

UNITED STATES GOVERNMENT
MEMORANDUM

October 24, 2018

To: Public Information (MS 5030)
From: Plan Coordinator, FO, Plans Section (MS
5231)

Subject: Public Information copy of plan

Control # - N-10032

Type - Initial Development Operations Coordinations Document

Lease(s) - OCS-G13808 Block - A 379 High Island Area
OCS-G35110 Block - A 380 High Island Area

Operator - Castex Offshore, Inc.

Description - Well E003

Rig Type - Not Found

Attached is a copy of the subject plan.

It has been deemed submitted as of this date and is under review for approval.

Robert Arpino
Plan Coordinator

Site Type/Name	Botm Lse/Area/Blk	Surface Location	Surf Lse/Area/Blk
FIXED/E		5699 FNL, 2466 FWL	G13808/HI/A 379
WELL/E003	G35110/HI/A 380	5704 FNL, 2461 FWL	G13808/HI/A 379

PUBLIC COPY
September 14, 2018

INITIAL DEVELOPMENT OPERATIONS COORDINATION DOCUMENT



Castex Offshore, Inc.
High Island Block A379 / A380
OCS-G 13808 / 35110
Affected States: Louisiana, Texas

Estimated Startup Date: November 15, 2018

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Section 17	Environmental Impact Analysis (EIA)
17-A	Environmental Impact Analysis (EIA)

SECTION 1 PLAN CONTENTS

1.1 PLAN INFORMATION

Castex Offshore, Inc. submitted an Initial Exploration Plan (N-10010) which was approved for High Island Block A-380 on July 12, 2018. This plan provided for the drilling and completion of one well. A Revised Exploration Plan was submitted (R-6742) to change the surface location from High Island Block A-380 to High Island Block A-379 and is currently pending approval.

Under this Initial Development Operations Coordination Document, Castex proposes to place one well (Well No. E003) on production from the existing High Island Block A-379 E Platform. These development operations are in approximately 320' of water.

There will be no anchors associated with the proposed activities. There will be no drilling operations conducted under this DOCD.

The OCS Plan Information Form BOEM-137 is included as **Attachment 1-A**.

1.2 LOCATION

A Well Location Plat depicting the surface location of the proposed well and water depth is included as **Attachment 1-B**.

1.3 SAFETY AND POLLUTION PREVENTION FEATURES

No drilling operations are proposed in this plan.

1.4 STORAGE TANKS AND PRODUCTION VESSELS

Type of Storage Tank	Type of Facility	Tank Capacity (bbl)	Number of Tanks	Total Capacity (bbl)	Fluid Gravity (API)
Fuel oil (marine diesel)	N/A	N/A	N/A	N/A	N/A
Production	N/A	N/A	N/A	N/A	N/A

1.5 POLLUTION PREVENTION MEASURES

These operations do not propose activities for which the State of Florida is an affected state.

1.6 ADDITIONAL MEASURES

Castex does not propose any additional safety, pollution prevention, or early spill detection measures beyond those required by 30 CFR Part 250.

1.7 COST RECOVERY FEE

Documentation of the \$4,238 cost recovery fee payment is included as **Attachment 1-C**.

OCS PLAN INFORMATION FORM

General Information													
Type of OCS Plan:		Exploration Plan (EP)		X		Development Operations Coordination Document (DOCD)							
Company Name: Castex Offshore, Inc.					BOEM Operator Number: 02970								
Address: 333 Clay Street, Suite 2900					Contact Person: Kim Sayre								
Houston, TX 77002					Phone Number: 281-578-3388								
					E-Mail Address: kim.sayre@jcccteam.com								
If a service fee is required under 30 CFR 550.125(a), provide the				Amount paid		\$4,238		Receipt No.		26C7VVMVI			
Project and Worst Case Discharge (WCD) Information													
Lease: OCS-G 35110			Area: High Island			Block: A-380			Project Name (If Applicable): N/A				
Objectives:		X	Oil	X	Gas		Sulphur		Salt	Onshore Support Bases: Cameron, LA; Santa Fe, TX			
Platform / Well Name: 001				Total Volume of WCD: 12,660,186 bbls				API Gravity: 46°					
Distance to Closest Land (Miles): 108.5					Volume from uncontrolled blowout: 94,479 bbls/day								
Have you previously provided information to verify the calculations and assumptions for your WCD?								X	Yes		No		
If so, provide the Control Number of the EP or DOCD with which this information was provided								N-10010					
Do you propose to use new or unusual technology to conduct your activities?									Yes	X	No		
Do you propose to use a vessel with anchors to install or modify a structure?									Yes	X	No		
Do you propose any facility that will serve as a host facility for deepwater subsea development?									Yes	X	No		
Description of Proposed Activities and Tentative Schedule (Mark all that apply)													
Proposed Activity					Start Date		End Date		No. of Days				
Commence Production Well #E003					11/15/2018		03/17/2034		15.3 year reserve life				
Description of Drilling Rig						Description of Structure							
Jackup				Drillship				Caisson				Tension leg platform	
Gorilla Jackup				Platform rig		X		Fixed platform				Compliant tower	
Semisubmersible				Submersible				Spar				Guyed tower	
DP Semisubmersible				Other (Attach description)				Floating production system				Other (Attach description)	
Drilling Rig Name (If known): N/A													
Description of Lease Term Pipelines													
From (Facility/Area/Block)			To (Facility/Area/Block)			Diameter (Inches)			Length (Feet)				
N/A			N/A			N/A			N/A				

OCS PLAN INFORMATION FORM (CONTINUED)
Include one copy of this page for each proposed well/structure

Proposed Well/Structure Location									
Well or Structure Name/Number (If renaming well or structure, reference previous name): Well No. E003				Previously reviewed under an approved EP or DOCD?		X	Yes		No
Is this an existing well or structure?		Yes	X	No	If this is an existing well or structure, list the Complex ID or API No.				
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?							Yes	X	No
WCD Info	For wells, volume of uncontrolled blowout (Bbls/Day): 94,479			For structures, volume of all storage and pipelines (Bbls):		API Gravity of fluid		46°	
	Surface Location			Bottom-Hole Location (For Wells)		Completion (For multiple completions, enter separate lines)			
Lease No.	G-13808			G-35110		OCS OCS			
Area Name	High Island			High Island					
Block No.	A-379			A-380					
Blockline Departures (in feet)	N/S Departure: 5,704' FNL			N/S Departure:		N/S Departure		F __ L	
	E/W Departure: 2,461' FWL			E/W Departure:		N/S Departure		F __ L	
Lambert X-Y coordinates	X: 3,668,336.81			X:		X:		F __ L	
	Y: 81,416			Y:		X:		F __ L	
Latitude/ Longitude	Latitude: 27° 57' 21.011" N			Latitude:		Y:		F __ L	
	Longitude: 93° 49' 53.430" W			Longitude:		Y:		F __ L	
Water Depth (Feet): 320'				MD (Feet):		TVD (Feet):		MD (Feet):	
Anchor Radius (if applicable) in feet:				N/A		MD (Feet):		TVD (Feet):	
MD (Feet):				TVD (Feet):		MD (Feet):		TVD (Feet):	
Anchor Locations for Drilling Rig or Construction Barge (If anchor radius supplied above, not necessary)									
Anchor Name or No.	Area	Block	X Coordinate		Y Coordinate		Length of Anchor Chain on Seafloor		
N/A			X:		Y:				
			X:		Y:				
			X:		Y:				
			X:		Y:				
			X:		Y:				
			X:		Y:				
			X:		Y:				

OCS PLAN INFORMATION FORM (CONTINUED)
Include one copy of this page for each proposed well/structure

Proposed Well/Structure Location									
Well or Structure Name/Number (If renaming well or structure, reference previous name): E				Previously reviewed under an approved EP or DOCD?		X	Yes		No
Is this an existing well or structure?		X	Yes	No	If this is an existing well or structure, list the Complex ID or API No.		28050		
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?							Yes	X	No
WCD Info	For wells, volume of uncontrolled blowout (Bbls/Day):			For structures, volume of all storage and pipelines (Bbls): 280.5		API Gravity of fluid		46°	
	Surface Location			Bottom-Hole Location (For Wells)		Completion (For multiple completions, enter separate lines)			
Lease No.	G-13808					OCS OCS			
Area Name	High Island								
Block No.	A-379								
Blockline Departures (in feet)	N/S Departure: 5,699' FNL			N/S Departure:		N/S Departure		F _ L	
	E/W Departure: 2,466' FWL			E/W Departure:		E/W Departure		F _ L	
Lambert X-Y coordinates	X: 3,668,341.81			X:		X:		X:	
	Y: 81,421			Y:		Y:		Y:	
Latitude/ Longitude	Latitude: 27° 57' 21.06" N			Latitude:		Latitude		Latitude	
	Longitude: 93° 49' 53.37" W			Longitude:		Longitude		Longitude	
Water Depth (Feet): 324'				MD (Feet):		TVD (Feet):		MD (Feet):	
Anchor Radius (if applicable) in feet:				N/A				TVD (Feet):	
								TVD (Feet):	
Anchor Locations for Drilling Rig or Construction Barge (If anchor radius supplied above, not necessary)									
Anchor Name or No.	Area	Block	X Coordinate		Y Coordinate		Length of Anchor Chain on Seafloor		
N/A			X:		Y:				
			X:		Y:				
			X:		Y:				
			X:		Y:				
			X:		Y:				
			X:		Y:				
			X:		Y:				

Y = 87,120.00

1 (OCS-G08574)



X = 3,665,875.81

2 (OCS-G08574)
2 (OCS-G03488)
1 (OCS-G03488)

'E' PLATFORM
PROPOSED WELL
No.1 (SL)

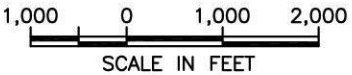
HIA380
OCS-G35110
CASTEX OFFSHORE INC

HIA379
OCS-G13808

CASTEX OFFSHORE INC
W & T OFFSHORE INC

PROPOSED WELL LOCATION

LOCATION	BLOCK	CALLS		COORDINATES		LATITUDE	LONGITUDE	WD	MD	TVD
No.1 (SL)	HII/A379	2,461.00' FWL	5,704.00' FNL	X = 3,668,336.81	Y = 81,416.00	27° 57' 21.011"N	93° 49' 53.430"W	320'		



SHEET 1 OF 1
PUBLIC INFORMATION

Y = 71,280.00

DATUM: NAD 27
SPHEROID: CLARKE 1866
PROJECTION: LAMBERT
ZONE: TEXAS SOUTH CENTRAL



CASTEX
OFFSHORE, INC.

Echo)))
OFFSHORE LLC

36499 Perkins Road
Prairieville, Louisiana 70769
Tel: 225-673-2163

**EXPLORATION PLAT
PROPOSED WELL No.1
OCS-G 35110 BLOCK A-380
WITH SURFACE LOCATION IN BLOCK A-379
HIGH ISLAND AREA
EAST ADDITION SOUTH EXTENSION
GULF OF MEXICO**

DRAWN BY: R/JN	DATE: 7/17/18	CHECKED BY: MEK	DRAWING No.: 18-027-EXP
REV. DATE:	REV. No.:	SCALE: 1"=2,000'	JOB No.: 18-027-32

ATTACHMENT 1 - C

Kim Sayre

From: notification@pay.gov
Sent: Friday, September 14, 2018 6:09 AM
To: Kim Sayre
Subject: Pay.gov Payment Confirmation: BOEM Development/DOCD Plan - BD

Your payment has been submitted to Pay.gov and the details are below. If you have any questions regarding this payment, please contact Brenda Dickerson at (703) 787-1617 or BseeFinanceAccountsReceivable@bsee.gov.

Application Name: BOEM Development/DOCD Plan - BD
Pay.gov Tracking ID: 26C7VVM1
Agency Tracking ID: 75573112460
Transaction Type: Sale
Transaction Date: 09/14/2018 07:08:37 AM EDT

Account Holder Name: Caran Crooker

Transaction Amount: \$4,238.00
Card Type: MasterCard
Card Number: *****3142

Region: Gulf of Mexico
Contact: Kim Sayre 281-698-8527
Company Name/No: Castex Offshore Inc., 02970
Lease Number(s): 13808, 35110, , ,
Area-Block: High Island HI, A380: , : , : , : ,
Type-Wells: Initial Plan, 1

THIS IS AN AUTOMATED MESSAGE. PLEASE DO NOT REPLY.

SECTION 2 GENERAL INFORMATION

2.1 APPLICATIONS AND PERMITS

No additional applications or permits are required to conduct the activities proposed herein.

2.2 DRILLING FLUIDS

No drilling operations are proposed in this DOCD.

2.3 PRODUCTION

Proprietary Information

2.4 OIL CHARACTERISTICS

Oil characteristics are not required to be submitted with this plan.

2.5 NEW OR UNUSUAL TECHNOLOGY

No new or unusual technology is proposed in this DOCD as defined by 30 CFR 550.200.

2.6 BONDING STATEMENT

The bond requirements for the activities and facilities proposed in this EP are satisfied by an area-wide bond, furnished and maintained according to 30 CFR 556.900 (a) and 30 CFR 556.901 (a) and (b) and NTL No. 2015-BOEM-N04, "General Financial Assurance"; and additional security under 30 CFR 556.901(d) – (f) and NTL No. 2016—BOEM-N01, "Requiring Additional Security" as required by BOEM.

2.7 OIL SPILL FINANCIAL RESPONSIBILITY (OSFR)

Castex Offshore, Inc. (Company No. 02970) will demonstrate oil spill financial responsibility for the facilities proposed in this DOCD according to 30 CFR Part 553.15 (a); and NTL No. 2008-N05, "Guidelines for Oil Spill Financial Responsibility for Covered Facilities".

2.8 DEEPWATER WELL CONTROL STATEMENT

Operations proposed in this plan are located in water depths less than 300 meters (984 feet); therefore, a deepwater well control statement is not provided.

2.9 SUSPENSION OF OPERATIONS

Castex anticipates filing a request for Suspension of Operations to hold the lease addressed in this DOCD in active status.

2.10 BLOWOUT SCENARIO AND WORST CASE DISCHARGE CALCULATIONS

In accordance with NTL No. 2015-BOEM-N01, "Information Requirements for Exploration Plans, Development and Production Plans, and Development Operations Coordination Documents on the OCS for Worst Case Discharge and Blowout Scenarios" the Blowout Scenario and Worst Case Discharge Assumptions and Calculations were submitted and approved with Plan Control No. N-10010.

SECTION 3 GEOLOGICAL AND GEOPHYSICAL INFORMATION

3.1 GEOLOGICAL DESCRIPTION

Proprietary Information

3.2 STRUCTURE CONTOUR MAP

Proprietary Information

3.3 INTERPRETED SEISMIC LINES

Proprietary Information

3.4 GEOLOGICAL STRUCTURE CROSS-SECTION

Proprietary Information

3.5 SHALLOW HAZARDS REPORT

The proposed operations will be conducted from a previously approved surface location; therefore, in accordance with NTL No. 2008-G05, "Shallow Hazards Program," a shallow hazards report is not provided.

3.6 SHALLOW HAZARDS ASSESSMENT

The proposed operations will be conducted from a previously approved surface location; therefore, in accordance with NTL No. 2008-G05, "Shallow Hazards Program," a site-specific shallow hazards assessment is not provided.

3.7 HIGH-RESOLUTION SEISMIC LINES

Proprietary Information

3.8 STRATIGRAPHIC COLUMN

Proprietary Information

3.9 TIME VS DEPTH TABLES

Proprietary Information

SECTION 4 HYDROGEN SULFIDE INFORMATION

4.1 CONCENTRATION

Castex anticipates encountering 0 ppm H₂S during the proposed operations.

4.2 CLASSIFICATION

By letter dated July 12, 2018, BOEM determined High Island Block A-380 as H₂S absent.

4.3 H₂S CONTINGENCY PLAN

An H₂S Contingency Plan is not required for the activities proposed in this plan.

4.4 MODELING REPORT

Modeling reports are not required for the activities proposed in this plan.

SECTION 5

MINERAL RESOURCE CONSERVATION INFORMATION

5.1 TECHNOLOGY & RESERVOIR ENGINEERING PRACTICES AND PROCEDURES

Proprietary Information

5.2 TECHNOLOGY AND RECOVERY PRACTICES AND PROCEDURES

Proprietary Information

5.3 RESERVOIR DEVELOPMENT

Proprietary Information

SECTION 6

BIOLOGICAL, PHYSICAL AND SOCIOECONOMIC INFORMATION

6.1 DEEPWATER BENTHIC COMMUNITIES

Activities proposed in this DOCD are in water depths less than 300 meters (984 feet); therefore, information as outlined in Attachment A of NTL No. 2009-G40, "Deepwater Benthic Communities," is not provided.

6.2 TOPOGRAPHIC FEATURES (BANKS)

Activities proposed in this DOCD do not fall within 305 meters (1000 feet) of a topographic "No Activity Zone;" therefore, no map is required per NTL No. 2009-G39, "Biologically Sensitive Underwater Features and Areas."

6.3 TOPOGRAPHIC FEATURES STATEMENT (SHUNTING)

There are no drilling operations proposed in this DOCD; therefore, there will be no shunting of drill cuttings.

6.4 LIVE-BOTTOMS (PINNACLE TREND FEATURES)

High Island Block A-379 is not located within 61 meters (200 feet) of any pinnacle trend feature; therefore, a separate bathymetric map is not required per NTL No. 2009-G39, "Biologically Sensitive Underwater Features and Areas."

6.5 LIVE BOTTOMS (LOW RELIEF)

High Island Block A-379 is not located within 30 meters (100 feet) of any live bottom (low relief) feature with vertical relief equal to or greater than 8 feet; therefore, live bottom (low relief) maps are not required per NTL No. 2009-G39, "Biologically Sensitive Underwater Features and Areas."

6.6 POTENTIALLY SENSITIVE BIOLOGICAL FEATURES

High Island Block A-379 is not located within 30 meters (100 feet) of potentially sensitive biological features. In accordance with NTL No. 2009-G39, "Biologically Sensitive Underwater Features and Areas," biologically sensitive area maps are not required.

6.7 THREATENED AND ENDANGERED SPECIES, CRITICAL HABITAT AND MARINE MAMMAL INFORMATION

The federally listed endangered and threatened species potentially occurring in the lease area and along the Gulf Coast are provided in the table below.

Species	Scientific Name	Status	Potential Presence		Critical Habitat Designated in the Gulf of Mexico
			Lease Area	Coastal	
Marine Mammals					
Manatee, West Indian	<i>Trichechus manatus latirostris</i>	E	--	X	Florida (peninsular)
Whale, Blue	<i>Balaenoptera masculus</i>	E	X	--	None
Whale, Finback	<i>Balaenoptera physalus</i>	E	X	--	None
Whale, Humpback	<i>Megaptera novaeangliae</i>	E	X	--	None
Whale, North Atlantic Right	<i>Eubalaena glacialis</i>	E	X	--	None
Whale, Sei	<i>Balaenoptera borealis</i>	E	X	--	None
Whale, Sperm	<i>Physeter catodon</i> (= <i>macrocephalus</i>)	E	X	--	None
Terrestrial Mammals					
Mouse, Beach (Alabama, Choctawatchee, Perdido Key, St. Andrew)	<i>Peromyscus polionotus</i>	E	-	X	Alabama, Florida (panhandle) beaches
Birds					
Plover, Piping	<i>Charadrius melodus</i>	T	-	X	Coastal Texas, Louisiana, Mississippi, Alabama and Florida (panhandle)
Crane, Whooping	<i>Grus Americana</i>	E	-	X	Coastal Texas
Reptiles					
Sea Turtle, Green	<i>Chelonia mydas</i>	T	X	X	None
Sea Turtle, Hawksbill	<i>Eretmochelys imbricata</i>	E	X	X	None
Sea Turtle, Kemp's Ridley	<i>Lepidochelys kempli</i>	E	X	X	None
Sea Turtle, Leatherback	<i>Dermochelys coriacea</i>	E	X	X	None
Sea Turtle, Loggerhead	<i>Caretta caretta</i>	T	X	X	Texas, Louisiana, Mississippi, Alabama, Florida
Fish					
Sturgeon, Gulf	<i>Acipenser oxyrinchus</i> (= <i>oxyrhynchus</i>) <i>desotoi</i>	T	X	X	Coastal Louisiana, Mississippi, Alabama and Florida (panhandle)
Corals					
Coral, Elkhorn	<i>Acopora palmate</i>	T	-	X	Florida Keys and Dry Tortugas
Coral, Staghorn	<i>Acopora cervicornis</i>	T	-	X	Florida

Abbreviations: E = Endangered; T = Threatened

* The Blue Fin, Humpback, North Atlantic Right, and Sei Whales are rare or extralimital in the Gulf of Mexico and are unlikely to be present in the lease area.

6.8 ARCHAEOLOGICAL REPORT

The proposed operations will be conducted from a previously approved surface location; therefore, in accordance with NTL No. 2005-G07, "Archaeological Resource Surveys and Reports," and NTL No. 2011-JOINT-G01, "Revisions to the List of OCS Lease Blocks Requiring Archaeological Resource Surveys and Reports," an archaeological resource survey report is not provided.

6.9 AIR AND WATER QUALITY INFORMATION

Air and water quality information is not required to be included in this plan per NTL No. 2008-G04, "Information Requirements for Exploration Plans and Development Operations Coordination Documents."

6.10 SOCIOECONOMIC INFORMATION

Socioeconomic information is not required to be included in this plan per NTL No. 2008-G04, "Information Requirements for Exploration Plans and Development Operations Coordination Documents."

SECTION 7 WASTES AND DISCHARGES INFORMATION

7.1 PROJECTED GENERATED WASTES

“Wastes You Will Generate, Treat and Downhole Dispose or Discharge to the Gulf of Mexico” is included as **Attachment 7-A**.

7.2 MODELING REPORT

Modeling reports are not required for the activities proposed in this plan.

ATTACHMENT 7-A WASTE ESTIMATED TO BE GENERATED, TREATED AND/OR DOWNHOLE DISPOSED OR DISCHARGED TO THE GOM

Please specify if the amount reported is a total or per well amount and be sure to include appropriate units.

Projected generated waste			Projected ocean discharges		Projected Downhole Disposal
Type of Waste	Composition	Projected Amount	Discharge rate	Discharge Method	Answer yes or no
Will drilling occur ? If yes, you should list muds and cuttings					<i>no</i>
Water-based drilling fluid	N/A	N/A	N/A	N/A	N/A
Cuttings wetted with water-based fluid	N/A	N/A	N/A	N/A	N/A
Cuttings wetted with synthetic-based fluid	N/A	N/A	N/A	N/A	N/A
Will humans be there? If yes, expect conventional waste					
Domestic waste	N/A	N/A	N/A	N/A	N/A
Sanitary waste	N/A	N/A	N/A	N/A	N/A
Is there a deck? If yes, there will be Deck Drainage					
Deck Drainage	N/A	N/A	N/A	N/A	N/A
Will you conduct well treatment, completion, or workover?					
Well treatment fluids	N/A	N/A	N/A	N/A	N/A
Well completion fluids	N/A	N/A	N/A	N/A	N/A
Workover fluids	N/A	N/A	N/A	N/A	N/A
Miscellaneous discharges. If yes, only fill in those associated with your activity.					
Desalinization unit discharge	N/A	N/A	N/A	N/A	N/A
Blowout prevent fluid	N/A	N/A	N/A	N/A	N/A
Ballast water	N/A	N/A	N/A	N/A	N/A
Bilge water	N/A	N/A	N/A	N/A	N/A
Excess cement at seafloor	N/A	N/A	N/A	N/A	N/A
Fire water	N/A	N/A	N/A	N/A	N/A
Cooling water	N/A	N/A	N/A	N/A	N/A
Will you produce hydrocarbons? If yes fill in for produced water.					
Produced water	N/A	N/A	N/A	N/A	N/A
Please enter <i>individual</i> or <i>general</i> to indicate which type of NPDES permit you will be covered by? General					
NOTE: If you will not have a type of waste for the activity being applied for, enter NA for all columns in the row.			NOTE: All discharged wastes should comply with the requirements of the NPDES permit.		

SECTION 8 AIR EMISSIONS INFORMATION

8.1 EMISSIONS WORKSHEETS AND SCREENING QUESTIONS

Screen Questions for DOCD's	Yes	No
Is any calculated Complex Total (CT) Emission amount (tons) associated with your proposed development activities more than 90% of the amounts calculated using the following formulas: $CT = 3400D^{2/3}$ for CO, and $CT = 33.3D$ for the other air pollutants (where D = distance to shore in miles)?		X
Do your emission calculations include any emission reduction measures or modified emission factors?		X
Does or will the facility complex associated with your proposed development and production activities process production from eight or more wells?		X
Do you expect to encounter H ₂ S at concentrations greater than 20 parts per million (ppm)?		X
Do you propose to flare or vent natural gas for more than 48 continuous hours from any proposed well?		X
Do you propose to burn produced hydrocarbon liquids?		X
Are your proposed development and production activities located within 25 miles (40 kilometers) from shore?		X
Are your proposed development and production activities located within 124 miles (200 kilometers) of the Breton Wilderness Area?		X

8.2 SUMMARY INFORMATION

There are existing facilities and activities co-located with the currently proposed activities; however, the Plan Emissions are the same as the Complex Total Emissions and are included as **Attachment 8-A**.

This information was calculated by: Kim Sayre
(281) 698-8527
kim.sayre@jccteam.com

DOCD AIR QUALITY SCREENING CHECKLIST

OMB Control No. 1010-0151
OMB Approval Expires: 06/30/2021

COMPANY	Castex Offshore, Inc.
AREA	High Island
BLOCK	A379
LEASE	OCS-G 13808
PLATFORM	E
WELL	E003
COMPANY CONTACT	Kim Sayre
TELEPHONE NO.	281-578-3388
REMARKS	Place Well No. E003 on production; Includes emissions for future workovers with jack-up rig

LEASE TERM PIPELINE CONSTRUCTION INFORMATION:		
YEAR	NUMBER OF PIPELINES	TOTAL NUMBER OF CONSTRUCTION DAYS
2018	N/A	N/A
2019		
2020		
2021		
2022		
2023		
2024		
2025		
2026		
2027		
2028		

AIR EMISSIONS COMPUTATION FACTORS

Fuel Usage Conversion Factors	Natural Gas Turbines		Natural Gas Engines		Diesel Recip. Engine		REF.	DATE
	SCF/hp-hr	9.524	SCF/hp-hr	7.143	GAL/hp-hr	0.0483	AP42 3.2-1	4/76 & 8/84

Equipment/Emission Factors	units	PM	SOx	NOx	VOC	CO	REF.	DATE
NG Turbines	gms/hp-hr		0.00247	1.3	0.01	0.83	AP42 3.2-1& 3.1-1	10/96
NG 2-cycle lean	gms/hp-hr		0.00185	10.9	0.43	1.5	AP42 3.2-1	10/96
NG 4-cycle lean	gms/hp-hr		0.00185	11.8	0.72	1.6	AP42 3.2-1	10/96
NG 4-cycle rich	gms/hp-hr		0.00185	10	0.14	8.6	AP42 3.2-1	10/96
Diesel Recip. < 600 hp.	gms/hp-hr	1	0.1835	14	1.12	3.03	AP42 3.3-1	10/96
Diesel Recip. > 600 hp.	gms/hp-hr	0.32	0.1835	11	0.33	2.4	AP42 3.4-1	10/96
Diesel Boiler	lbs/bbl	0.084	0.3025	0.84	0.008	0.21	AP42 1.3-12,14	9/98
NG Heaters/Boilers/Burners	lbs/mmscf	7.6	0.593	100	5.5	84	AP42 1.4-1, 14-2, & 14	7/98
NG Flares	lbs/mmscf		0.593	71.4	60.3	388.5	AP42 11.5-1	9/91
Liquid Flaring	lbs/bbl	0.42	6.83	2	0.01	0.21	AP42 1.3-1 & 1.3-3	9/98
Tank Vapors	lbs/bbl				0.03		E&P Forum	1/93
Fugitives	lbs/hr/comp.				0.0005		API Study	12/93
Glycol Dehydrator Vent	lbs/mmscf				6.6		La. DEQ	1991
Gas Venting	lbs/scf				0.0034			

Sulphur Content Source	Value	Units
Fuel Gas	3.33	ppm
Diesel Fuel	0.05	% weight
Produced Gas(Flares)	3.33	ppm
Produced Oil (Liquid Flaring)	1	% weight

AIR EMISSIONS CALCULATIONS - FIRST YEAR

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL		CONTACT	PHONE	REMARKS								
Castex Offshore, Inc.	High Island	A379	OCS-G 13808	E	E003		Kim Sayre	281-578-3388	Place Well No. E003 on production; Includes emissions for future workovers with jack-up rig								
OPERATIONS	EQUIPMENT	RATING	MAX. FUEL	ACT. FUEL	RUN TIME		MAXIMUM POUNDS PER HOUR					ESTIMATED TONS					
	Diesel Engines	HP	GAL/HR	GAL/D													
	Nat. Gas Engines	HP	SCF/HR	SCF/D													
	Burners	MMBTU/HR	SCF/HR	SCF/D	HR/D	D/YR	PM	SOx	NOx	VOC	CO	PM	SOx	NOx	VOC	CO	
DRILLING	PRIME MOVER>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Jack-up*	PRIME MOVER>600hp diesel	16975	819.8925	19677.42	24	120	11.96	6.86	411.29	12.34	89.74	17.23	9.88	592.26	17.77	129.22	
	PRIME MOVER>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	PRIME MOVER>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	BURNER diesel	0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	AUXILIARY EQUIP<600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSELS>600hp diesel(crew)	2065	99.7395	2393.75	6	52	1.46	0.83	50.03	1.50	10.92	0.23	0.13	7.81	0.23	1.70	
	VESSELS>600hp diesel(supply)	2065	99.7395	2393.75	8	52	1.46	0.83	50.03	1.50	10.92	0.30	0.17	10.41	0.31	2.27	
	VESSELS>600hp diesel(tugs)	8400	405.72	9737.28	10	2	5.92	3.40	203.52	6.11	44.41	0.06	0.03	2.04	0.06	0.44	
PIPELINE	PIPELINE LAY BARGE diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
INSTALLATION	SUPPORT VESSEL diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	PIPELINE BURY BARGE diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	SUPPORT VESSEL diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSELS>600hp diesel(crew)	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSELS>600hp diesel(supply)	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
FACILITY	DERRICK BARGE diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
INSTALLATION	MATERIAL TUG diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSELS>600hp diesel(crew)	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSELS>600hp diesel(supply)	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
PRODUCTION	RECIP.<600hp diesel	240	11.592	278.21	2	365	0.53	0.10	7.40	0.59	1.60	0.19	0.04	2.70	0.22	0.58	
	RECIP.>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	SUPPORT VESSEL diesel	2065	99.7395	2393.75	10	52	1.46	0.83	50.03	1.50	10.92	0.38	0.22	13.01	0.39	2.84	
	TURBINE nat gas	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	RECIP.2 cycle lean nat gas	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	RECIP.4 cycle lean nat gas	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	RECIP.4 cycle rich nat gas	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	BURNER nat gas	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	MISC.	BPD	SCF/HR	COUNT													
	TANK-	0			0	0				0.00					0.00	0.00	
	FLARE-		0		0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	
	PROCESS VENT-		0		0	0				0.00				0.00	0.00	0.00	
	FUGITIVES-			0.0		0				0.00				0.00	0.00	0.00	
	GLYCOL STILL VENT-		0		0	0				0.00				0.00	0.00	0.00	
DRILLING	OIL BURN	0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
WELL TEST	GAS FLARE		0		0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	
2018-2034 YEAR TOTAL							22.78	12.86	772.31	23.54	168.49	18.39	10.47	628.21	18.98	137.06	
EXEMPTION CALCULATION	DISTANCE FROM LAND IN MILES											3613.05	3613.05	3613.05	3613.05	77344.97	
	108.5																

* This AQR includes contingency drilling days each year for maintenance, workovers, recompletions, interventions and abandonment activities.

AIR EMISSIONS CALCULATIONS

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL
Castex Offshore	High Island	A379	OCS-G 13808	E	E003
Year	Emitted Substance				
	PM	SO _x	NO _x	VOC	CO
2018-2034	18.39	10.47	628.21	18.98	137.06
Allowable	3613.05	3613.05	3613.05	3613.05	77344.97

SECTION 9 OIL SPILL INFORMATION

9.1 OIL SPILL RESPONSE PLANNING

All the proposed activities and facilities in this DOCD will be covered by the Oil Spill Response Plan (OSRP) filed by Castex Offshore, Inc. (Company No. 02970) dated August 2018 and last approved on May 29, 2018 (OSRP Control No. O-653).

9.2 SPILL RESPONSE SITES

Primary Response Equipment Location	Preplanned Staging Location
Houma, LA	Houma, LA
Harvey, LA	Harvey, LA
Galveston, TX	Galveston, TX

9.3 OSRO INFORMATION

Castex's primary equipment provider is Clean Gulf Associates. Clean Gulf Associates Services, LLC will provide closest available personnel, as well as a supervisor to operate the equipment.

9.4 WORST-CASE DISCHARGE SCENARIO DETERMINATION

Category	Production	
	Regional OSRP WCD	DOCD WCD
Type of Activity	FGB Oil Spill Planning Area	FGB Production
Facility location (Area/Block)	HIA380	HIA379
Facility designation	Well Location A	E003
Distance to nearest shoreline (miles)	108	108.5
Storage tanks & flowlines (bbl)	94,479	280.5
Lease term pipelines (bbl)	0	0
Uncontrolled blowout (bbl)	0	2,825
Total Volume (bbl)	94,479	3,105.5
Type of oil(s) (crude, condensate, diesel)	Condensate	Condensate
API gravity	46°	46°

Castex has determined that the worst-case scenario from the activities proposed in this DOCD does not supersede the worst-case scenario from our approved Regional OSRP.

Since Castex Offshore, Inc. has the capability to respond to the worst-case spill scenario included in our Regional OSRP approved on May 29, 2018, and since the worst-case scenario determined for our DOCD does not replace the worst-case scenario in our Regional OSRP, Castex Offshore, Inc. hereby certifies that Castex Offshore, Inc. has the capability to respond, to

the maximum extent practicable, to a worst-case discharge, or a substantial threat of such a discharge, resulting from the activities proposed in this DOCD.

9.5 OIL SPILL RESPONSE DISCUSSION

The Oil Spill Response Discussion is included as **Attachment 9-A**.

9.6 MODELING REPORT

Modeling reports are not required for the activities proposed in this plan.

SPILL RESPONSE DISCUSSION

For the purpose of NEPA and Coastal Zone Management Act analysis, the largest spill volume originating from the proposed activity would be a well blowout during production operations, estimated to be 3,105.5 barrels of condensate with an API gravity of 46°.

Land Segment and Resource Identification

Trajectories of a spill and the probability of it impacting a land segment have been projected utilizing information in the BOEM Oil Spill Risk Analysis Model (OSRAM) for the Central and Western Gulf of Mexico available on the BOEM website. The results are shown in **Figure 1**. The BOEM OSRAM identifies a 7% probability of impact to the shorelines of Matagorda County, Texas within 10 days. Matagorda County stretches from Matagorda Bay, across the Colorado River and up to the border of San Bernard Wildlife Refuge (immediately west of the San Bernard River). The county includes Matagorda Peninsula on the Gulf coast and Matagorda Bay. This area is primarily open beach. However, marshland exists along the east side of Matagorda Bay. Several bird rookeries are present around the peninsula. Seagrass is present off of Matagorda Peninsula on the bay side.

Flower Garden Banks

Located approximately 105 miles directly south of the Texas/Louisiana border, the Flower Garden Banks are the northernmost coral reefs in the United States. Perched atop salt dome structures rising above the sea floor, the Banks provide a hard surface for coral attachment where clear sunlit water, warm water temperatures, and a steady food supply have formed a shallow-water Caribbean reef complex, an ecosystem of unique biological diversity. The Flower Garden Banks were designated a National Marine Sanctuary in 1992. In 1996, Congress expanded the Sanctuary by adding a third smaller bank, Stetson Bank, located approximately 70 miles south of Galveston, Texas. Due to its unique location, the Flower Garden Banks National Marine Sanctuary provides a rich assemblage of plants and animals enjoyed by researchers and recreational divers alike. To protect the reef structures, the National Marine Fisheries Service (NMFS) has prohibited fishing with bottom longlines, bottom trawl, dredge, pots or traps year round.

In the event of an oil spill in the Flower Garden Banks area, decisions regarding the selection of appropriate response strategies must also consider the proximity of the slick to the resources located in and around the Flower Garden Banks National Marine Sanctuary. Accurate trajectory analysis for the immediate area can be critical for strategic response planning. Two data sets, wind speed & direction and current speed & direction, are required to obtain accurate spill trajectories. These data sets are then used to assist responders in making decisions regarding the type of response appropriate for the incident, particularly whether or not the use of dispersants is advisable. In order to have access to these data sets for the immediate area of the Flower Garden Banks, Castex will join the Flower Garden Banks Joint Industry Project (FGB-JIP). The FGB-JIP funds two automated buoys, which provide real-time observations of current and wind speeds and directions in the immediate vicinity of the Sanctuary. In the event of an oil spill, this data is accessed via the internet (<http://tabs.gerg.tamu.edu/tglo>), and is used to generate a trajectory.

Response

Castex will make every effort to respond to the Worst Case Discharge as effectively as practicable. A description of the response equipment under contract to contain and recover the Worst Case Discharge is shown in **Figure 2**.

Using the estimated chemical and physical characteristics of condensate, an ADIOS weathering model was run on a similar product from the ADIOS oil database. The results indicate 69% or approximately 2,143 barrels of condensate would be evaporated/dispersed within 24 hours, with approximately 962.5 barrels remaining.

Spill Response HI A379, Well E003	Barrels of Oil
WCD Volume	3,105.5
<i>Less</i> 69% natural evaporation/dispersion	2,143
Remaining volume	962.5

Figure 2 outlines equipment, personnel, materials and support vessels as well as temporary storage equipment available to respond to the worst case discharge. The volume accounts for the amount remaining after evaporation/dispersion at 24 hours. The list estimates individual times needed for procurement, load out, travel time to the site and deployment. **Figure 2** also indicates how operations will be supported.

Castex's Oil Spill Response Plan includes alternative response technologies such as dispersants. Strategies will be decided by Unified Command based on a safety analysis, the size of the spill, weather and potential impacts. Although unlikely, if aerial dispersants are utilized, 8 sorties (9,600 gallons) from two of the DC-3 aircrafts and 4 sorties (8,000 gallons) from the Basler aircraft would provide a daily dispersant capability of 7,540 barrels. Slick containment boom and sorbent boom would be immediately called out and on-scene as soon as possible. Offshore response strategies may include collection of condensate with sorbent boom (inside hard boom), attempting to skim utilizing CGA spill response equipment, with a total derated skimming capacity of 99,170 barrels. Temporary storage associated with skimming equipment equals 4,249 barrels. If additional storage is needed, various storage barges with a total capacity of 95,000 barrels may be mobilized and centrally located to provide temporary storage and minimize off-loading time. **Safety is first priority. Air monitoring will be accomplished and operations deemed safe prior to any containment/skimming attempts.**

If the spill went unabated, shoreline impact in Matagorda County, Texas would depend upon existing environmental conditions. Shoreline protection would include the use of CGA's near shore and shallow water skimmers with a totaled derated skimming capacity of 19,617 barrels. Temporary storage associated with skimming equipment equals 838 barrels. If additional storage is needed, one storage barge with a total capacity of 20,000 barrels may be mobilized and centrally located to provide temporary storage allowing the skimmers to stay in the area of operations as much as possible. Onshore response may include the deployment of shoreline

boom on beach areas, or protection and sorbent boom on vegetated areas. An agreement with Garner Environmental will ensure access to 50,830 feet of 18” shoreline protection boom. **Figure 2** outlines individual times needed for procurement, load out, travel time to the site and deployment. Strategies would be based upon surveillance and real time trajectories that depict areas of potential impact given actual sea and weather conditions. Applicable Area Contingency Plans (ACPs), Geographic Response Plans (GRPs), and Unified Command would be consulted to ensure that environmental and special economic resources would be correctly identified and prioritized to ensure optimal protection. Shoreline protection strategies depict the protection response modes applicable for oil spill clean-up operations. Each response mode is schematically represented to show optimum deployment and operation of the equipment in areas of environmental concern. Supervisory personnel have the option to modify the deployment and operation of equipment allowing a more effective response to site-specific circumstances. Castex’s contract Spill Management Team has access to the applicable ACP(s) and GRP(s).

Based on the anticipated worst case discharge scenario, Castex can be onsite with contracted oil spill recovery equipment with adequate response capacity to contain and recover surface hydrocarbons, and prevent land impact, to the maximum extent practicable, within an estimated 60 hours (based on the equipment’s Effective Daily Recovery Capacity (EDRC)).

Initial Response Considerations

Actual actions taken during an oil spill response will be based on many factors to include but not be limited to:

- Weather
- Equipment and materials availability
- Ocean currents and tides
- Location of the spill
- Product spilled
- Amount spilled
- Environmental risk assessments
- Trajectory and product analysis
- Well status, i.e., shut in or continual release

Castex will take action to provide a safe, aggressive response to contain and recover as much of the spilled oil as quickly as it is safe to do so. In an effort to protect the environment, response actions will be designed to provide an “in-depth” protection strategy meant to recover as much oil as possible as far from environmentally sensitive areas as possible. Safety will take precedence over all other considerations during these operations.

Coordination of response assets will be supervised by the designation of a SIMOPS group as necessary for close quarter vessel response activities. Most often, this group will be used during source control events that require a significant number of large vessels operating independently, but in coordination to complete a common objective, in a small area and in close coordination and support of each other. This group must also monitor the subsurface activities of each vessel (ROV, dispersant application, well control support, etc.). The SIMOPS group leader reports to the Source Control Section Chief.

In addition, these activities will be monitored by the spill management team (SMT) and Unified Command via a structured Common Operating Picture (COP) established to track resource and slick movement in real time.

Upon notification of a spill, the following actions will be taken:

- Information will be confirmed
- An assessment will be made and initial objectives set
- OSROs and appropriate agencies will be notified
- ICS 201, Initial Report Form completed
- Initial Safety plan will be written and published
- Unified Command will be established
 - Overall safety plan developed to reflect the operational situation and coordinated objectives
 - Areas of responsibility established for Source Control and each surface operational site
 - On-site command and control established

Offshore Response Actions

Equipment Deployment

Surveillance

- Surveillance Aircraft: within two hours of QI notification, or at first light
- Provide trained observer to provide on site status reports
- Provide command and control platform at the site if needed
- Continual surveillance of oil movement by remote sensing systems, aerial photography and visual confirmation
- Continual monitoring of vessel assets using vessel monitoring systems

Dispersant application assets

- Put ASI on standby
- With the FOSC, conduct analysis to determine appropriateness of dispersant application (refer to Section 18)
- Gain FOSC approval for use of dispersants on the surface
- Deploy aircraft in accordance with a plan developed for the actual situation
- Coordinate movement of dispersants, aircraft, and support equipment and personnel
- Confirm dispersant availability for current and long range operations
- Start ordering dispersant stocks required for expected operations

Containment boom

- Call out early and expedite deployment to be on scene ASAP
- Ensure boom handling and mooring equipment is deployed with boom
- Provide continuing reports to vessels to expedite their arrival at sites that will provide for their most effective containment
- Use Vessels of Opportunity (VOO) to deploy and maintain boom

Oceangoing Boom Barge

- Containment at the source
- Increased/enhanced skimmer encounter rate
- Protection booming

In-situ Burn assets

- Determine appropriateness of in-situ burn operation in coordination with the FOSC and affected SOSC
- Determine availability of fire boom and selected ignition systems
- Start ordering fire boom stocks required for expected operations
- Contact boom manufacturer to provide training & tech support for operations, if required
- Determine assets to perform on water operation
- Build operations into safety plan
- Conduct operations in accordance with an approved plan
- Initial test burn to ensure effectiveness

Dedicated off-shore skimming systems

General

- Deployed to the highest concentration of oil
- Assets deployed at safe distance from aerial dispersant and in-situ burn operations

CGA HOSS Barge

- Use in areas with heaviest oil concentrations
- Consider for use in areas of known debris (seaweed, and other floating materials)

CGA 95' Fast Response Vessels (FRVs)

- Designed to be a first vessel on scene
- Capable of maintaining the initial Command and Control function for on water recovery operations
- 24 hour oil spill detection capability
- Highly mobile and efficient skimming capability
- Use as far off-shore as safely possible

CGA FRUs

- To the area of the thickest oil
- Use as far off-shore as allowed
- VOOs 140' – 180' in length
- VOOs with minimum of 18' x 38' or 23' x 50' of optimum deck space
- VOOs in shallow water should have a draft of <10 feet when fully loaded

T&T Koseq Skimming Systems

- To the area of the thickest oil
- Use as far off-shore as allowed
- VOOs with a minimum of 2,000 bbls storage capacity
- VOOs at least 200' in length
- VOOs with deck space of 100' x 40' to provide space for arms, tanks, and crane
- VOOs for shallow water should be deck barges with a draft of <10 feet when fully loaded

Storage Vessels

- Establish availability of CGA contracted assets (See Appendix E)
- Early call out (to allow for tug boat acquisition and deployment speeds)
- Phase mobilization to allow storage vessels to arrive at the same time as skimming systems
- Position as closely as possible to skimming assets to minimize offloading time

Vessels of Opportunity (VOO)

- Use Castex's contracted resources as applicable
- Industry vessels are ideal for deployment of Vessel of Opportunity Skimming Systems (VOSS)
- Acquire additional resources as needed
- Consider use of local assets, i.e. fishing and pleasure craft for ISB operations or boom tending
- Expect mission specific and safety training to be required
- Plan with the US Coast Guard for vessel inspections
- Place VOOs in Division or Groups as needed
- Use organic on-board storage if appropriate
- Maximize non-organic storage appropriate to vessel limitations
- Decant as appropriate after approval to do so has been granted
- Assign bulk storage barges to each Division/Group
- Position bulk storage barges as close to skimming units as possible
- Utilize large skimming vessel (e.g. barges) storage for smaller vessel offloading
- Maximize skimming area (swath) to the optimum width given sea conditions and available equipment
- Maximize use of oleophilic skimmers in all operations, but especially offshore
- Nearshore, use shallow water barges and shuttle to skimming units to minimize offloading time
- Plan and equip to use all offloading capabilities of the storage vessel to minimize offloading time

Adverse Weather Operations:

In adverse weather, when seas are ≥ 3 feet, the use of larger recovery and storage vessels, oleophilic skimmers, and large offshore boom will be maximized. KOSEQ Arm systems are built for rough conditions, and they should be used until their operational limit (9.8' seas) is met. Safety will be the overriding factor in all operations and will cease at the order of the Unified Command, vessel captain, or in an emergency, "stop work" may be directed by any crew member.

Surface Oil Recovery Considerations and Tactics (Offshore and Near-shore Operations)

Maximization of skimmer-oil encounter rate

- Place barges in skimming task forces, groups, etc., to reduce recovered oil offloading time
- Place barges alongside skimming systems for immediate offloading of recovered oil when practicable
- Use two vessels, each with heavy sea boom, in an open-ended "V" configuration to funnel surface oil into a trailing skimming unit's organic, V-shaped boom and skimmer (see page 7, *CGA Equipment Guide Book and Tactic Manual (CGATM)*)

- Use secondary vessels and heavy sea boom to widen boom swath beyond normal skimming system limits (see page 15, CGATM)
- Consider night-time operations, first considering safety issues
- Utilize all available advanced technology systems (IR, X-Band Radar, etc.) to determine the location of, and move to, recoverable oil
- Confirm the presence of recoverable oil prior to moving to a new location

Maximize skimmer system efficiency

- Place weir skimming systems in areas of calm seas and thick oil
- Maximize the use of oleophilic skimming systems in heavier seas
- Place less mobile, high EDRC skimming systems (e.g. HOSS Barge) in the largest pockets of the heaviest oil
- Maximize onboard recovered oil storage for vessels.
- Obtain authorization for decanting of recovered water as soon as possible
- Use smaller, more agile skimming systems to recover streamers of oil normally found farther from the source. Place recovered oil barges nearby

Recovered Oil Storage

- Smaller barges in larger quantities will increase flexibility for multi-location skimming operations
- Place barges in skimming task forces, groups, etc., to reduce recovered oil offloading time
- Procure and deploy the maximum number of portable tanks to support Vessel of Opportunity Skimming Systems if onboard storage is not available
- Maximize use of the organic recovered oil storage capacity of the skimming vessel

Command, Control, and Communications (C³)

- Publish, implement, and fully test an appropriate communications plan
- Design an operational scheme, maintaining a manageable span of control
- Designate and mark C³ vessels for easy aerial identification
- Designate and employ C³ aircraft for task forces, groups, etc.
- Use reconnaissance air craft and Rapid Response Teams (RAT) to confirm the presence of recoverable oil

On Water Recovery Group

When the first skimming vessel arrives on scene, a complete site assessment will be conducted before recovery operations begin. Once it is confirmed that the air monitoring readings for O₂, LEL, H₂S, CO, VOC, and Benzene are all within the permissible limits, oil recovery operations may begin.

As skimming vessels arrive, they will be organized to work in areas that allow for the most efficient vessel operation and free vessel movement in the recovery of oil. Vessel groups will vary in structure as determined by the Operations Section of the Unified Command, but will generally consist, at a minimum, of the following dedicated assets:

- 3 to 5 – Offshore skimming vessels (recovery)
- 1 – Tank barge (temporary storage)
- 1 – Air asset (tactical direction)
- 2 – Support vessels (crew/utility for supply)
- 6 to 10 – Boom vessels (enhanced booming)

Example (Note: Actual organization of TFs will be dependent on several factors including, asset availability, weather, spilled oil migration, currents, etc.)

The 95' FRV Breton Island out of Venice arrives on scene and conducts an initial site assessment. Air monitoring levels are acceptable and no other visual threats have been observed. The area is cleared for safe skimming operations. The Breton Island assumes command and control (CoC) of on-water recovery operations until a dedicated non-skimming vessel arrives to relieve it of those duties.

A second 95' FRV arrives and begins recovery operations alongside the Breton Island. Several more vessels begin to arrive, including a third 95' FRV out of Galveston, the HOSS Barge (High Volume Open Sea Skimming System) out of Harvey, a boom barge (CGA 300) with 25,000' of 42" auto boom out of Leeville, and 9 Fast Response Units (FRUs) from the load-out location at C-Port in Port Fourchon.

As these vessels set up and begin skimming, they are grouped into task forces (TFs) as directed by the Operations Section of the Unified Command located at the command post.

Initial set-up and potential actions:

- A 1,000 meter safety zone has been established around the incident location for vessels involved in Source Control
- The HOSS Barge is positioned facing the incident location just outside of this safety zone or at the point where the freshest oil is reaching the surface
- The HOSS Barge engages its Oil Spill Detection (OSD) system to locate the heaviest oil and maintains that ability for 24-hour operations

- The HOSS Barge deploys 1,320' of 67" Sea Sentry boom on each side, creating a swath width of 800'
- The Breton Island and H.I. Rich skim nearby, utilizing the same OSD systems as the HOSS Barge to locate and recover oil
- Two FRUs join this group and it becomes TF1
- The remaining 7 FRUs are split into a 2 and 3 vessel task force numbered TF2 and TF3
- A 95' FRV is placed in each TF
- The boom barge (CGA 300) is positioned nearby and begins deploying auto boom in sections between two utility vessels (1,000' to 3,000' of boom, depending on conditions) with chain-link gates in the middle to funnel oil to the skimmers
- The initial boom support vessels position in front of TF2 and TF3
- A 100,000+ barrel offshore tank barge is placed with each task force as necessary to facilitate the immediate offload of skimming vessels

The initial task forces (36 hours in) may be structured as follows:

TF 1

- 1 – 95' FRV
- 1 – HOSS Barge with 3 tugs
- 2 – FRUs
- 1 – 100,000+ barrel tank barge and associated tug(s)
- 1 – Dedicated air asset for tactical direction
- 8 – 500' sections of auto boom with gates
- 8 – Boom-towing vessels
- 2 – Support vessels (crew/utility)

TF 2

- 1 – 95' FRV
- 4 – FRUs
- 1 – 100,000+ barrel tank barge and associated tug(s)
- 1 – Dedicated air asset for tactical direction
- 10 – 500' sections of auto boom with gates
- 10 – Boom-towing vessels
- 2 – Support vessels (crew/utility)

TF 3

- 1 – 95' FRV
- 3 – FRUs
- 1 – 100,000+ barrel tank barge and associated tug(s)
- 1 – Dedicated air asset for tactical direction
- 8 – 500' sections of auto boom with gates
- 8 – Boom-towing vessels
- 2 – Support vessels (crew/utility)

Offshore skimming equipment continues to arrive in accordance with the ETA data listed in figure H.3a; this equipment includes 2 AquaGuard skimmers and 11 sets of Koseq Rigid Skimming Arms. These high volume heavy weather capable systems will be divided into functional groups and assigned to specific areas by the Operations Section of the Unified Command.

At this point of the response, the additional TFs may assume the following configurations:

TF 4

- 2 – Sets of Koseq Rigid Skimming Arms w/ associated 200'+ PIDVs
- 1 – AquaGuard Skimmer
- 1 – 100,000+ barrel tank barge and associated tug(s)
- 1 – Dedicated air asset for tactical direction
- 2 – Support vessels (crew/utility)
- 6 – 500' sections of auto boom with gates
- 6 – Boom-towing vessels

TF 5

- 3 – Sets of Koseq Rigid Skimming Arms w/ associated 200'+ PIDVs
- 1 – AquaGuard Skimmer
- 1 – 100,000+ barrel tank barge and associated tug(s)
- 1 – Dedicated air asset for tactical direction
- 2 – Support vessels (crew/utility)
- 8 – 500' sections of auto boom with gates
- 8 – Boom-towing vessels

TF 6

- 3 – Sets of Koseq Rigid Skimming Arms w/ associated 200'+ PIDVs
- 1 – 100,000+ barrel tank barge and associated tug(s)
- 1 – Dedicated air asset for tactical direction
- 2 – Support vessels (crew/utility)
- 6 – 500' sections of auto boom with gates
- 6 – Boom-towing vessels

TF 7

- 3 – Sets of Koseq Rigid Skimming Arms w/ associated 200'+ PIDVs
- 1 – 100,000+ barrel tank barge and associated tug(s)
- 1 – Dedicated air asset for tactical direction
- 2 – Support vessels (crew/utility)
- 6 – 500' sections of auto boom with gates
- 6 – Boom-towing vessels

CGA Minimum Acceptable Capabilities for Vessels of Opportunity (VOO)

Minimum acceptable capabilities of Petroleum Industry Designed Vessels (PIDV) for conducting Vessel of Opportunity (VOO) skimming operations are shown in the table below. PIDVs are “purpose-built” to provide normal support to offshore oil and gas operators. They include but are not limited to utility boats, offshore supply vessels, etc. They become VOOs when tasked with oil spill response duties.

Capability	FRU	KOSEQ	AquaGuard
Type of Vessel	Utility Boat	Offshore Supply Vessel	Utility Boat
Operating parameters			
Sea State	3-5 ft max	9.8 ft max	3-5 ft max
Skimming speed	≤1 kt	≤3 kts	≤1 kt
Vessel size			
Minimum Length	100 ft	200 ft	100 ft
Deck space for: <ul style="list-style-type: none"> • Tank(s) • Crane(s) • Boom Reels • Hydraulic Power Units • Equipment Boxes 	18x32 ft	100x40 ft	18x32 ft
Communication Assets	Marine Band Radio	Marine Band Radio	Marine Band Radio

Tactical use of Vessels of Opportunity (VOO): Castex will take all possible measures to maximize the oil-to-skimmer encounter rate of all skimming systems, to include VOOs, as discussed in this section. VOOs will normally be placed within an On-water recovery unit as shown in figures below.

Skimming Operations: PIDVs are the preferred VOO skimming platform. OSROs are more versed in operating on these platforms and the vessels are generally large enough with crews more likely versed in spill response operations. They also have a greater possibility of having on-board storage capacity and the most likely vessels to be under contract, and therefore more readily available to the operator. These vessels would normally be assigned to an on-water recovery group/division (see figure below) and outfitted with a VOSS suited for their size and capabilities. Specific tactics used for skimming operations would be dependent upon many parameters which include, but are not limited to, safety concerns, weather, type VOSS on board, product being recovered, and area of oil coverage. Planners would deploy these assets with the objective of safely maximizing oil- to-skimmer encounter rate by taking actions to minimize non-skimming time and maximizing boom swath. Specific tactical configurations are shown in figures below.

The Fast Response Unit (FRU): A self-contained, skid based, skimming system that is deployed from the right side of a vessel of opportunity (VOO). An outrigger holds a 75' long section of air inflatable boom in place that directs oil to an apex for recovery via a Foilex 250 weir skimmer. The outrigger creates roughly a 40' swath width dependent on the VOO beam. The lip of the collection bowl on the skimmer is placed as close to the oil and water interface as possible to maximize oil recovery and minimize water retention. The skimmer then pumps all fluids recovered to the storage tank where it is allowed to settle, and with the approval of the Coast Guard, the water is decanted from the bottom of the tank back into the water ahead of the containment boom to be recycled through the system. Once the tank is full of as much pure recovered oil as possible it is offloaded to a storage barge for disposal in accordance with an approved disposal plan. A second 100 barrel storage tank can be added if the appropriate amount of deck space is available to use as secondary storage.

Tactical Overview

Mechanical Recovery – The FRU is designed to provide fast response skimming capability in the offshore and nearshore environment in a stationary or advancing mode. It provides a rated daily recovery capacity of 4,100 barrels. An additional boom reel with 440' of offshore boom can be deployed along with the FRU, and a second support vessel for boom towing, to extend the swath width when attached to the end of the fixed boom. The range and sustainability offshore is dependent on the VOO that the unit is placed on, but generally these can stay offshore for extended periods. The FRU works well independently or assigned with other on-water recovery assets in a task force. In either case, it is most effective when a designated aircraft is assigned to provide tactical direction to ensure the best placement in recoverable oil.

Maximum Sea Conditions – Under most circumstances the FRU can maintain standard oil spill recovery operations in 2' to 4' seas. Ultimately, the Coast Guard licensed Captain in charge of the VOO (with input from the CGAS Supervisor assigned) will be responsible to determine when the sea conditions have surpassed the vessel's safe operating capabilities.

Possible Task Force Configuration (Multiple VOOs can be deployed in a task force)

- 1 – VOO (100' to 165' Utility or Supply Vessel)
- 1 – Boom reel w/support vessel for towing
- 1 – Tank barge (offshore) for temporary storage
- 1 – Utility/Crewboat (supply)
- 1 – Designated spotter aircraft



The VOSS (yellow) is being deployed and connected to an out-rigged arm. This is suitable for collection in both large pockets of oil and for recovery of streaming oil. The oil-to-skimmer encounter rate is limited by the length of the arm. Skimming pace is ≤ 1 knot.



Through the use of an additional VOO, and using extended sea boom, the swath of the VOSS is increased therefore maximizing the oil-to-skimmer encounter rate. Skimming pace is ≤ 1 knot.

The Koseq Rigid Sweeping Arm: A skimming system deployed on a vessel of opportunity. It requires a large Offshore or Platform Supply Vessel (OSV/PSV), greater than 200' with at least 100' x 50' of free deck space. On each side of the vessel, a 50' long rigid framed Arm is deployed that consists of pontoon chambers to provide buoyancy, a smooth nylon face, and a hydraulically adjustable mounted weir skimmer. The Arm floats independently of the vessel and is attached by a tow bridle and a lead line. The movement of the vessel forward draws the rubber end seal of the arm against the hull to create a collection point for free oil directed to the weir by the Arm face. The collection weir is adjusted to keep the lip as close to the oil water interface as possible to maximize oil recovery while attempting to minimize excess water collection. A transfer pump (combination of positive displacement, screw type and centrifuge suited for highly viscous oils) pump the recovered liquid to portable tanks and/or dedicated fixed storage tanks onboard the vessel. After being allowed to sit and separate, with approval from the Coast Guard, the water can be decanted (pumped off) in front of the collection arm to be reprocessed through the system. Once full with as much pure recovered oil as possible, the oil is transferred to a temporary storage barge where it can be disposed of in accordance with an approved disposal plan.

Tactical Overview

Mechanical Recovery – Deployed on large vessels of opportunity (VOO) the Koseq Rigid Sweeping Arms are high volume surge capacity deployed to increase recovery capacity at the source of a large oil spill in the offshore and outer nearshore environment of the Gulf of Mexico. They are highly mobile and sustainable in rougher sea conditions than normal skimming vessels (9.8' seas). The large Offshore Supply Vessels (OSV) required to deploy the Arms are able to remain on scene for extended periods, even when sea conditions pick up. Temporary storage on deck in portable tanks usually provides between 1,000 and 3,000 bbls. In most cases, the OSV will be able to pump 20% of its deadweight into the liquid mud tanks in accordance with the vessels Certificate of Inspection (COI). All storage can be offloaded utilizing the vessels liquid transfer system.

Maximum Sea Conditions - Under most circumstances the larger OSVs are capable of remaining on scene well past the Skimming Arms maximum sea state of 9.8'. Ultimately it will be the decision of the VOO Captain, with input from the T&T Supervisor onboard, to determine when the sea conditions have exceeded the safe operating conditions of the vessel.

Command and Control – The large OSVs in many cases have state of the art communication and electronic systems, as well as the accommodations to support the function of directing all skimming operations offshore and reporting back to the command post.

Possible Task Force Configuration (Multiple Koseq VOOs can be deployed in a task force)

1 – \geq 200' Offshore Supply Vessels (OSV) with set of Koseq Arms

2 to 4 portable storage tanks (500 bbl)

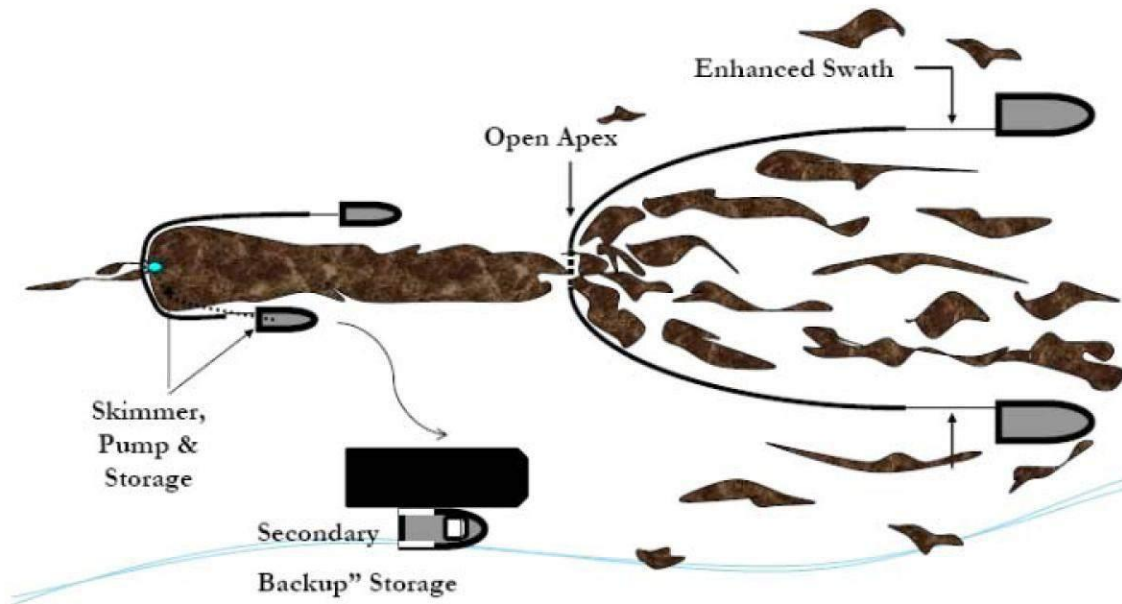
1 – Modular Crane Pedestal System set (MCPS) or 30 cherry picker (crane) for deployment

1 – Tank barge (offshore) for temporary storage

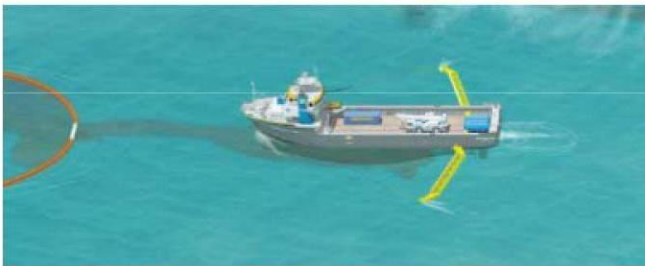
1 – Utility/Crewboat (supply)

1 – Designated spotter aircraft

4 – Personnel (4 T&T OSRO)



Scattered oil is “caught” by two VOO and collected at the apex of the towed sea boom. The oil moves through a “gate” at that apex, forming a larger stream of oil which moves into the boom of the skimming vessel. Operations are paced at >1 . A recovered oil barge stationed nearby to minimize time taken to offload recovered oil.



This is a depiction of the same operation as above but using KOSEQ Arms. In this configuration, the collecting boom speed dictates the operational pace at ≥ 1 knot to minimize entrainment of the oil.

Clean Gulf Associates (CGA) Procedure for Accessing Member-Contracted and other Vessels of Opportunity (VOOs) for Spill Response

- CGA has procedures in place for CGA member companies to acquire vessels of opportunity (VOOs) from an existing CGA member's contracted fleet or other sources for the deployment of CGA portable skimming equipment including Koseq Arms, Fast Response Units (FRUs) and any other portable skimming system(s) deemed appropriate for the response for a potential or actual oil spill, WCD oil spill or a Spill of National Significance (SONS).
- CGA uses Port Vision, a web-based vessel and terminal interface that empowers CGA to track vessels through Automatic Identification System (AIS) and terminal activities using a Geographic Information System (GIS). It provides live AIS/GIS views of waterways showing current vessel positions, terminals, created vessel fleets, and points-of-interest. Through this system, CGA has the ability to get instant snapshots of the location and status of all vessels contracted to CGA members, day or night, from any web-enabled PC.

Near Shore Response Actions

Timing

- Put near shore assets on standby and deployment in accordance with planning based on the actual situation, actual trajectories and oil budgets
- VOO identification and training in advance of spill nearing shoreline if possible
- Outfitting of VOOs for specific missions
- Deployment of assets based on actual movement of oil

Considerations

- Water depth, vessel draft
- Shoreline gradient
- State of the oil
- Use of VOOs
- Distance of surf zone from shoreline

Surveillance

- Provide trained observer to direct skimming operations
- Continual surveillance of oil movement by remote sensing systems, aerial photography and visual confirmation
- Continual monitoring of vessel assets

Dispersant Use

- Generally will not be approved within 3 miles of shore or with less than 10 meters of water depth
- Approval would be at Regional Response Team level (Region 6)

Dedicated Near Shore skimming systems

- FRVs
- Egmpol and Marco SWS
- Operate with aerial spotter directing systems to observed oil slicks

VOO

- Use Castex's contracted resources as applicable
- Industry vessel are usually best for deployment of Vessel of Opportunity Skimming Systems (VOSS)
- Acquire additional resources as needed
- Consider use of local assets, i.e. fishing and pleasure craft
- Expect mission specific and safety training to be required
- Plan with the US Coast Guard for vessel inspections
- Operate with aerial spotter directing systems to oil patches

Shoreline Protection Operations

Response Planning Considerations

- Review appropriate Area Contingency Plan(s)
- Locate and review appropriate Geographic Response and Site Specific Plans
- Refer to appropriate Environmentally Sensitive Area Maps
- Capability for continual analysis of trajectories run periodically during the response
- Environmental risk assessments (ERA) to determine priorities for area protection
- Time to acquire personnel and equipment and their availability
- Refer to the State of Louisiana Initial Oil Spill Response Plan, Deep Water Horizon, dated 2 May 2010, as a secondary reference
- Aerial surveillance of oil movement
- Pre-impact beach cleaning and debris removal
- Shoreline Cleanup Assessment Team (SCAT) operations and reporting procedures
- Boom type, size and length requirements and availability
- Possibility of need for In-situ burning in near shore areas
- Current wildlife situation, especially status of migratory birds and endangered species in the area
- Check for Archeological sites and arrange assistance for the appropriate state agency when planning operations that may impact these areas

Placement of boom

- Position boom in accordance with the information gained from references listed above and based on the actual situation
- Determine areas of natural collection and develop booming strategies to move oil into those areas
- Assess timing of boom placement based on the most current trajectory analysis and the availability of each type of boom needed. Determine an overall booming priority and conduct booming operations accordingly. Consider:
 - Trajectories
 - Weather forecast
 - Oil Impact forecast
 - Verified spill movement
 - Boom, manpower and vessel (shallow draft) availability
 - Near shore boom and support material, (stakes, anchors, line)

Beach Preparation - Considerations and Actions

- Use of a 10 mile go/no go line to determine timing of beach cleaning
- SCAT reports and recommendations
- Determination of archeological sites and gaining authority to enter
- Monitoring of tide tables and weather to determine extent of high tides
- Pre cleaning of beaches by moving waste above high tide lines to minimize waste
- Determination of logistical requirements and arranging of waste removal and disposal

- Staging of equipment and housing of response personnel as close to the job site as possible to maximize on-site work time
- Boom tending, repair, replacement and security (use of local assets may be advantageous)
- Constant awareness of weather and oil movement for resource re-deployment as necessary
- Earthen berms and shoreline protection boom may be considered to protect sensitive inland areas
- Requisitioning of earth moving equipment
- Plan for efficient and safe use of personnel, ensuring:
 - A continual supply of the proper Personal Protective Equipment
 - Heating or cooling areas when needed
 - Medical coverage
 - Command and control systems (i.e. communications)
 - Personnel accountability measures
- Remediation requirements, i.e., replacement of sands, rip rap, etc.
- Availability of surface washing agents and associated protocol requirements for their use (see National Contingency Plan Product Schedule for list of possible agents)
- Discussions with all stakeholders, i.e., land owners, refuge/park managers, and others as appropriate, covering the following:
 - Access to areas
 - Possible response measures and impact of property and ongoing operations
 - Determination of any specific safety concerns
 - Any special requirements or prohibitions
 - Area security requirements
 - Handling of waste
 - Remediation expectations
 - Vehicle traffic control
 - Domestic animal safety concerns
 - Wildlife or exotic game concerns/issues

*Inland and Coastal Marsh Protection and Response
Considerations and Actions*

- All considered response methods will be weighed against the possible damage they may do to the marsh. Methods will be approved by the Unified Command only after discussions with local Stakeholder, as identified above.
 - In-situ burn may be considered when marshes have been impacted
- Passive clean up of marshes should be considered and appropriate stocks of sorbent boom and/or sweep obtained.
- Response personnel must be briefed on methods to traverse the marsh, i.e.,
 - use of appropriate vessel
 - use of temporary walkways or road ways
- Discuss and gain approval prior to cutting or moving vessels through vegetation
- Discuss use of vessels that may disturb wildlife, i.e., airboats
- Safe movement of vessels through narrow cuts and blind curves

- Consider the possibility that no response in a marsh may be best
- In the deployment of any response asset, actions will be taken to ensure the safest, most efficient operations possible. This includes, but is not limited to:
 - Placement of recovered oil or waste storage as near to vessels or beach cleanup crews as possible.
 - Planning for stockage of high use items for expeditious replacement
 - Housing of personnel as close to the work site as possible to minimize travel time
 - Use of shallow water craft
 - Use of communication systems appropriate ensure command and control of assets
 - Use of appropriate boom in areas that I can offer effective protection
 - Planning of waste collection and removal to maximize cleanup efficiency
- Consideration or on-site remediation of contaminated soils to minimize replacement operations and impact on the area

Decanting Strategy

Recovered oil and water mixtures will typically separate into distinct phases when left in a quiescent state. When separation occurs, the relatively clean water phase can be siphoned or decanted back to the recovery point with minimal, if any, impact. Decanting therefore increases the effective on-site oil storage capacity and equipment operating time. FOSC/SOSC approval will be requested prior to decanting operations. This practice is routinely used for oil spill recovery.

CGA Equipment Limitations

The capability for any spill response equipment, whether a dedicated or portable system, to operate in differing weather conditions will be directly in relation to the capabilities of the vessel the system is placed on. Most importantly, however, the decision to operate will be based on the judgment of the Unified Command and/or the Captain of the vessel, who will ultimately have the final say in terminating operations. Skimming equipment listed below may have operational limits which exceed those safety thresholds. As was seen in the Deepwater Horizon (DWH) oil spill response, vessel skimming operations ceased when seas reached 5-6 feet and vessels were often recalled to port when those conditions were exceeded. Systems below are some of the most up-to-date systems available and were employed during the DWH spill.

Boom	3 foot seas, 20 knot winds
Dispersants	Winds more than 25 knots Visibility less than 3 nautical miles Ceiling less than 1,000 feet.
FRU	8 foot seas
HOSS Barge/OSRB	8 foot seas
Koseq Arms	8 foot seas
OSRV	4 foot seas

Environmental Conditions in the GOM

Prevailing winds, waves and currents along the Texas coast are from the southeast and northeast quadrants. Ten to 20 foot waves may occur during hurricanes. The combined effect of the winds, surface currents, and waves refracting shoreward produce the prevailing westerly longshore currents.

Tides are semi-diurnal and diurnal, and range in height from less than 1 foot to 2.5 feet. The direction, force, and duration of the wind has a considerable effect on the tides and currents. Fifteen foot tides may be expected during severe hurricanes and very low tides may accompany strong northerlies of long duration.

Surface water temperature averages slightly less than 90° F and ranges between 80 and 100° F during the late summer. During the winter the average is slightly less than 60° F and the range is between 35 and 80° F.

The Atlantic and Gulf of Mexico hurricane season is officially from 1 June to 30 November. 97% of all tropical activity occurs within this window. The Atlantic basin shows a very peaked season from August through October, with 78% of the tropical storm days, 87% of the minor (Saffir-Simpson Scale categories 1 and 2) hurricane days, and 96% of the major (Saffir-Simpson categories 3, 4 and 5) hurricane days occurring then. Maximum activity is in early to mid September. Once in a few years there may be a hurricane occurring "out of season" - primarily in May or December. Globally, September is the most active month and May is the least active month.

**FIGURE 1
TRAJECTORY BY LAND SEGMENT**

<p>Trajectory of a spill and the probability of it impacting a land segment have been projected utilizing Castex's WCD and information in the BOEM Oil Spill Risk Analysis Model (OSRAM) for the Central and Western Gulf of Mexico available on the BOEM website using 10 day impact. The results are tabulated below.</p>				
Area/Block	OCS-G	Launch Area	Land Segment and/or Resource	Conditional Probability (%) within 10 days
Place Well E003 on production HI A379, Well E003 <i>108.5 miles from shore</i>	G13808	W17	Calhoun, TX Matagorda, TX Brazoria, TX Galveston, TX Jefferson, TX Cameron, LA	1 7 4 5 2 1

WCD Scenario– BASED ON WELL BLOWOUT DURING PRODUCTION OPERATIONS (108.5 miles from shore)
 962.5 bbls of condensate (Volume considering natural weathering)
 API Gravity 46°

FIGURE 2 – Equipment Response Time to HI A379, Well E003

Dispersants/Surveillance

Dispersant/Surveillance	Dispersant Capacity (gal)	Storage Capacity	Persons Req.	From	Hrs to Procure	Hrs to Loadout	Travel to site	Total Hrs
ASI								
Basler 67T	2000	NA	2	Houma	2	2	1.1	5.1
DC 3	1200	NA	2	Houma	2	2	1.5	5.5
DC 3	1200	NA	2	Houma	2	2	1.5	5.5
Aero Commander	NA	NA	2	Houma	2	2	1.1	5.1

Offshore Response

Offshore Equipment No Staging	EDRC	Storage Capacity	VOO	Persons Required	From	Hrs to Procure	Hrs to Loadout	Hrs to GOM	Travel to Spill Site	Hrs to Deploy	Total Hrs
CGA											
HOSS Barge	76285	4000	3 Tugs	12	Harvey	6	0	12	27.5	2	47.5
95' FRV	22885	249	N/A	4	Galveston	2	0	2	5	1	10
Boom Barge (CGA-300) 42" Auto Boom (25000')	NA	NA	1 Tug 50 Crew	4 (Barge) 2 (Per Crew)	Leeville	8	0	4	36	2	50
Recovered Oil Storage No Staging	EDRC	Storage Capacity	VOO	Persons Required	From	Hrs to Procure	Hrs to Loadout	Hrs to GOM	Travel to Spill Site	Hrs to Deploy	Total Hrs
Enterprise Marine Services LLC (available through contract with CGA)											
CTCo 2603	NA	25000	1 Tug	6	Amelia	19	12	6	22	1	60
CTCo 2607	NA	23000	1 Tug	6	Amelia	19	12	6	22	1	60
CTCo 5001	NA	47000	1 Tug	6	Amelia	19	12	6	22	1	60

Nearshore Response

Nearshore Equipment Pre-determined Staging	EDRC	Storage Capacity	VOO	Persons Required	From	Hrs to Procure	Hrs to Loadout	Hrs to GOM	Travel to Spill Site	Hrs to Deploy	Total Hrs
Enterprise Marine Services LLC (Available through contract with CGA)											
CTCo 2604	NA	20000	1 Tug	6	Amelia	16	12	6	25	1	60

Staging Area: Galveston

Nearshore Equipment With Staging	EDRC	Storage Capacity	VOO	Persons Req.	From	Hrs to Procure	Hrs to Load Out	Travel to Staging	Travel to Deployment	Hrs to Deploy	Total Hrs
CGA											
SWS Egmopol	1810	100	NA	3	Galveston	2	2	2	2	1	9
SWS Egmopol	1810	100	NA	3	Morgan City	2	2	9	2	1	16
SWS Marco	3588	20	NA	3	Lake Charles	2	2	5	2	1	12
SWS Marco	3588	34	NA	3	Leeville	2	2	11	2	1	18
SWS Marco	3588	34	NA	3	Venice	2	2	13	2	1	20
Foilex Skim Package (TDS 150)	1131	50	NA	3	Lake Charles	4	12	5	2	2	25
Foilex Skim Package (TDS 150)	1131	50	NA	3	Galveston	4	12	2	2	2	22
Foilex Skim Package (TDS 150)	1131	50	NA	3	Harvey	4	12	11	2	2	31
4 Drum Skimmer (Magnum 100)	680	100	1 Crew	3	Lake Charles	2	2	5	2	1	12
4 Drum Skimmer (Magnum 100)	680	100	1 Crew	3	Harvey	2	2	11	2	1	18
2 Drum Skimmer (TDS 118)	240	100	1 Crew	3	Lake Charles	2	2	5	2	1	12
2 Drum Skimmer (TDS 118)	240	100	1 Crew	3	Harvey	2	2	11	2	1	18

Shoreline Protection

Staging Area: Galveston

Shoreline Protection Boom	VOO	Persons Req.	Storage/Warehouse Location	Hrs to Procure	Hrs to Loadout	Travel to Staging	Travel to Deployment Site	Hrs to Deploy	Total Hrs
Garner Environmental									
17,600' 18" Boom	5 Crew	10	Deer Park, TX	1	1	1.2	2	8	9.2
11,000' 18" Boom	3 Crew	6	La Marque, TX	1	1	0.4	2	4	8.4
22,230' 18" Boom	5 Crew	10	Port Arthur, TX	1	1	2.4	2	8	14.4

Wildlife Response	EDRC	Storage Capacity	VOO	Persons Req.	From	Hrs to Procure	Hrs to Loadout	Travel to Staging	Travel to Deployment	Hrs to Deploy	Total Hrs
CGA											
Wildlife Support Trailer	NA	NA	NA	2	Harvey	2	2	11	1	2	18
Bird Scare Guns (24)	NA	NA	NA	2	Harvey	2	2	11	1	2	18
Bird Scare Guns (12)	NA	NA	NA	2	Galveston	2	2	2	1	2	9
Bird Scare Guns (12)	NA	NA	NA	2	Aransas Pass	2	2	6	1	2	13
Bird Scare Guns (48)	NA	NA	NA	2	Lake Charles	2	2	5	1	2	12
Bird Scare Guns (24)	NA	NA	NA	2	Leeville	2	2	11	1	2	18

Response Asset	Total
Offshore EDRC	99,170
Offshore Recovered Oil Storage	99,249
Nearshore / Shallow Water EDRC	19,617
Nearshore / Shallow Water Recovered Oil Storage	20,838

SECTION 10 ENVIRONMENTAL MONITORING INFORMATION

10.1 MONITORING SYSTEMS

There are no environmental monitoring systems currently in place or planned for the proposed activities.

10.2 INCIDENTAL TAKES

There is no reason to believe that any of the endangered species or marine mammals as listed in the Endangered Species Act (ESA) will be “taken” as a result of the operations proposed under this plan.

It has been documented that the use of explosives and/or seismic devices can affect marine life. Operations proposed in this plan will not be utilizing either of these devices.

Castex will adhere to the requirements as set forth in the following documents, as applicable, to avoid or minimize impacts to any of the species listed in the ESA as a result of the operations conducted herein:

- NTL No. 2015-BSEE-G03, “Marine Trash and Debris Awareness and Elimination”
- NTL No. 2016-BOEM-G01, “Vessel Strike Avoidance and Injured/Dead Protected Species Reporting”
- NTL No. 2016-BOEM-G02, “Implementation of Seismic Survey Mitigation Measures and Protected Species Observer Program”

10.3 FLOWER GARDEN BANKS NATIONAL MARINE SANCTUARY

High Island Block A-379 falls within the Protective Zone of the Flower Garden Banks. Castex is a member of the Joint Industry Project that sponsors the Texas Automated Buoy System (TABS) coordinated by Texas A&M University. The TABS buoys deployed around the Flower Garden Banks allows agencies and responders to make appropriate operational decisions should there be a pollution event by accurately predicting the event’s impact and attempting to mitigate the problem.

SECTION 11 LEASE STIPULATIONS INFORMATION

Development activities are subject to the following stipulations attached to Lease OCS-G 13808, High Island Block A-379.

11.1 TOPOGRAPHIC FEATURES (BANKS)

In accordance with NTL No. 2009-G39, "Biologically-Sensitive Underwater Features and Areas," Castex will conduct no activities within the "No Activity Zone" of the West Flower Garden Bank as stated in the oil and gas lease instrument.

11.2 MARINE PROTECTED SPECIES

In accordance with the Federal Endangered Species Act and the Marine Mammal Protection Act, Castex will:

- (a) Collect and remove flotsam resulting from activities related to exploration, development, and production of this lease;
- (b) Post signs in prominent places on all vessels and platforms used as a result of activities related to exploration, development, and production of this lease detailing the reasons (legal and ecological) why release of debris must be eliminated;
- (c) Observe for marine mammals and sea turtles while on vessels, reduce vessel speed to 10 knots or less when assemblages of cetaceans are observed, and maintain a distance of 90 meters or greater from whales, and a distance of 45 meters or greater from small cetaceans and sea turtles;
- (d) Employ mitigation measures prescribed by BOEM/BSEE or the National Marine Fisheries Service (NMFS) for all seismic surveys, including the use of an "exclusion zone" based upon the appropriate water depth, ramp-up and shutdown procedures, visual monitoring, and reporting;
- (e) Identify important habitats, including designated critical habitat, used by listed species (e.g., sea turtle nesting beaches, piping plover critical habitat), in oil spill contingency planning and require the strategic placement of spill cleanup equipment to be used only by personnel trained in less-intrusive cleanup techniques on beaches and bay shores; and
- (f) Immediately report all sightings and locations of injured or dead protected species (e.g., marine mammals and sea turtles) to the appropriate stranding network. If oil and gas industry activity is responsible for the injured or dead animal (e.g., because of a vessel strike), the responsible parties should remain available to assist the stranding network. If the injury or death was caused by a collision with the lessee's vessel, the lessee must notify BOEM within 24 hours of the strike.

BOEM and BSEE issue Notices to Lessees (NTLs), which more fully describe measures implemented in support of the above-mentioned implementing statutes and regulations, as well

as measures identified by the U.S. Fish and Wildlife Service and NMFS arising from, among others, conservation recommendations, rulemakings pursuant to the MMPA, or consultation. The lessee and its operators, personnel, and subcontractors, while undertaking activities authorized under this lease, must implement and comply with the specific mitigation measures outlined in NTL No. 2016-BOEM-G01, "Vessel Strike Avoidance and Injured/Dead Protected Species Reporting;" NTL No. 2016-BOEM-G02, "Implementation of Seismic Survey Mitigation Measures and Protected Species Observer Program;" and NTL No. 2015-BSEE-G03, "Marine Trash and Debris Awareness and Elimination." At the lessee's option, the lessee, its operators, personnel, and contractors may comply with the most current measures to protect species in place at the time an activity is undertaken under this lease, including but not limited to new or updated versions of the NTLs identified in this paragraph. The lessee and its operators, personnel, and subcontractors will be required to comply with the mitigation measures, identified in the above referenced NTLs, and additional measures in the conditions of approvals for their plans or permits.

SECTION 12

ENVIRONMENTAL MITIGATION MEASURES INFORMATION

12.1 MEASURES TAKEN TO AVOID, MINIMIZE, AND MITIGATE IMPACTS

This plan does not propose activities for which the state of Florida is an affected state; therefore, mitigation information is not required for the activities proposed in this plan.

12.2 INCIDENTAL TAKES

Castex will adhere to the requirements set forth in the following documents, as applicable, to avoid or minimize impacts to any of the species listed in the Endangered Species Act (ESA) as a result of the operations conducted herein:

- NTL No. 2015-BSEE-G03, "Marine Trash and Debris Awareness and Elimination"
- NTL No. 2016-BOEM-G01, "Vessel Strike Avoidance and Injured/Dead Protected Species Reporting"
- NTL No. 2016-BOEM-G02, "Implementation of Seismic Survey Mitigation Measures and Protected Species Observer Program"

SECTION 13 RELATED FACILITIES AND OPERATIONS INFORMATION

13.1 RELATED OCS FACILITIES AND OPERATIONS

The subject well will be produced from existing High Island Block A-379 Platform E. A 6-inch right-of-way pipeline approximately 13,800 feet in length will be installed to transport produced oil from Platform E to Platform B in High Island Block A-379. A ROW Pipeline Application will be submitted to provide for the installation of the pipeline from Platform E to Platform B. The maximum flow rate is 3,000-4,000 BPD of oil and 20 Mmscfd and the estimated shut-in time is 45 seconds.

Hydrocarbons will be delivered to the HIOS Operations System for ultimate delivery to shore. No new near shore or onshore pipelines or facilities will be constructed.

13.2 TRANSPORTATION SYSTEM

Hydrocarbon production will be transported as described above.

13.3 PRODUCED LIQUID HYDROCARBONS TRANSPORTATION VESSELS

There will not be any transfers of liquid hydrocarbons other than via pipeline.

SECTION 14 SUPPORT VESSELS AND AIRCRAFT INFORMATION

14.1 GENERAL

The most practical, direct route from the shorebase as permitted by weather and traffic conditions will be utilized. Information regarding the vessels and aircraft to be used to support the proposed activities is provided in the table below.

Type	Maximum Fuel Tank Capacity	Maximum Number in Area at Any Time	Trip Frequency or Duration
Supply boat	10,000 gal	1	1 per week
Helicopter	560 gal	As Required	As Required

14.2 DIESEL OIL SUPPLY VESSELS

Information regarding vessels to be used to supply diesel oil for fuel and other purposes is provided in the table below.

Size of Fuel Supply Vessel (ft)	Capacity of Fuel Supply Vessel	Frequency of Fuel Transfers	Route Fuel Supply Vessel Will Take
180	1,500 bbls	Weekly	Shortest route from Shorebase to block

14.3 DRILLING FLUID TRANSPORTATION

Drilling fluid transportation information is not required to be submitted with this plan.

14.4 SOLID AND LIQUID WASTE TRANSPORTATION

A table, "Wastes You Will Transport and/or Dispose of Onshore," is included as **Attachment 14-A**.

14.5 VICINITY MAP

A vicinity map showing the location of the activities proposed herein relative to the shoreline with the distance of the proposed activities from the shoreline and the primary routes of the support vessels and aircraft that will be used when traveling between the onshore support facilities and the platform is included as **Attachment 14-B**.

ATTACHMENT 14-A WASTE AND SURPLUS ESTIMATED TO BE TRANSPORTED AND/OR DISPOSED OF ONSHORE

please specify whether the amount reported is a total or per well

Projected generated waste		Solid and Liquid Wastes transportation	Waste Disposal		
Type of Waste	Composition	Transport Method	Name/Location of Facility	Amount	Disposal Method
Will drilling occur ? If yes, fill in the muds and cuttings.					
Oil-based drilling fluid or mud	No drilling will occur under this DOCD	N/A	N/A	N/A	N/A
Synthetic-based drilling fluid or mud	N/A	N/A	N/A	N/A	N/A
Cuttings wetted with Water-based fluid	N/A	N/A	N/A	N/A	N/A
Cuttings wetted with Synthetic-based fluid	N/A	N/A	N/A	N/A	N/A
Cuttings wetted with oil-based fluids	N/A	N/A	N/A	N/A	N/A
Will you produce hydrocarbons? If yes fill in for produced sand.					
Produced sand	N/A	N/A	N/A	N/A	N/A
Will you have additional wastes that are not permitted for discharge? If yes, fill in the appropriate rows.					
Trash and debris	Paper and Plastic	Garbage bags on workboat or crew boat	Grand Isle Shipyard, Fourchon	150 cuft/week	Landfill
Used oil	Motor Oil	Tote tank on workboat or crew boat	Grand Isle Shipyard, Fourchon	70 gal/week	Recycled
Wash water	N/A	N/A	N/A	N/A	N/A
Chemical product wastes	Paints, solvents, batteries, etc.	Storage container	Grand Isle Shipyard, Fourchon	200 lb/yr	Recycle or Incinerate
NOTE: If you will not have a type of waste, enter NA in the row.					



SECTION 15 ONSHORE SUPPORT FACILITIES INFORMATION

15.1 GENERAL

The onshore facilities to be used to provide supply and service support for the proposed activities are provided in the table below.

Name	Location	Existing/New/Modified
Castex Dock	Cameron, LA	Existing
Westwind Helicopters	Santa Fe, TX	Existing

15.2 SUPPORT BASE CONSTRUCTION OR EXPANSION

There will be no new construction of an onshore support base, nor will Castex expand the existing shorebase as a result of the operations proposed in this DOCD.

15.3 SUPPORT BASE CONSTRUCTION OR EXPANSION TIMETABLE

A support base construction or expansion timetable is not required for the activities proposed in this plan.

15.4 WASTE DISPOSAL

A table, "Wastes You Will Transport and/or Dispose of Onshore," is included as **Attachment 14-A**.

SECTION 16 COASTAL ZONE MANAGEMENT (CZM) INFORMATION

Under direction of the Coastal Zone Management Act (CZMA), the states of Louisiana and Texas developed Coastal Zone Management Programs (CZMP) to allow for the supervision of significant land and water use activities that take place within or that could significantly affect the Louisiana and Texas coastal zones.

Proposed activities are 131 miles from the Louisiana and 108 miles from the Texas shore. Measures will be taken to avoid or mitigate the probable impacts. Castex will operate in compliance with existing federal and state laws, regulations, and resultant enforceable program policies in Louisiana's Texas' Coastal Zone Management Programs.

The OCS related oil and gas exploratory and development activities having potential impact on the Louisiana and Texas Coastal Zones are based on the location of the proposed facilities, access to those sites, best practical techniques for drilling locations, drilling equipment guidelines for the prevention of adverse environmental effects, effective environmental protection, emergency plans and contingency plans.

Relevant enforceable policies were considered in certifying consistency for Louisiana. A certificate of Coastal Zone Management Consistency for the state of Louisiana is included as **Attachment 16-A**.

The policies and corresponding sections within this Development Operations Coordination Document identified by the state of Texas Coastal Management Plan (TCMP) as being related to OCS Plans are provided in the table below.

Enforceable Program Policies of the Texas Coastal Management Plan (TCMP)

Policy	Plan Section	Evaluation
<i>Category 2:</i> Construction, Operation and Maintenance of Oil and Gas Exploration and Production Facilities	1 2	Proposed activities shall avoid to the maximum extent practicable significant impact to Texas submerged lands, critical areas, wetlands, beaches, or other coastal resources.
<i>Category 3:</i> Discharges of Wastewater and Disposal of Waste from Oil and Gas Exploration and Production Activities	7 14 15	All offshore discharges associated with the proposed activities, as summarized in Section 7, will be conducted in accordance with regulations implemented by the United States Environmental Protection Agency (USEPA), the U. S. Coast Guard (USCG), the Bureau of Ocean Energy Management (BOEM), and the Bureau of Safety

Policy	Plan Section	Evaluation
		and Environmental Enforcement (BSEE). All wastes generated during proposed activities that do not meet discharge regulations will be properly transported to Fourchon, LA, and disposed of as summarized in Section 14.
<i>Category 4:</i> Construction and Operation of Solid Waste Treatment, Storage, and Disposal Facilities	15	No construction of solid waste facilities and no expansion of existing facilities are proposed in the Texas coastal zone.
<i>Category 5:</i> Prevention, Response, and Remediation of Oil Spills	2 9	Proposed activities will comply with all applicable laws and regulations concerning oil spill prevention, response, and remediation summarized in Section 9. The proposed activities will be covered under the Castex approved Regional Oil Spill Response Plan (OSRP).
<i>Category 6:</i> Discharge of Municipal and Industrial Waste Water to Coastal Waters	7	No discharges to Texas coastal waters are proposed. The proposed activities will be conducted in accordance with discharge regulations implemented by the USEPA, the USCG, BOEM, and BSEE.
<i>Category 7:</i> Non Point Source Pollution	7	The proposed activities do not include nonpoint sources of water pollution.
<i>Category 8:</i> Development in Critical Areas	6 11 12 15 17	No activities are proposed in critical areas. Proposed activities shall avoid to the maximum extent practicable significant impact to critical areas.
<i>Category 9:</i> Construction of Waterfront Facilities and Other Structures on Submerge lands	2 8 15 17	No construction of waterfront facilities or other structures on Texas submerged lands is proposed.
<i>Category 10:</i> Dredging and Dredged Material Disposal and Placement	15	No dredging or dredged material disposal or placement is proposed.
<i>Category 11:</i> Construction in the Beach / Dune System	15	No construction in the beach/dune system is proposed.
<i>Category 12:</i> Development in Coastal	15	No development in coastal hazard areas is proposed.

Policy	Plan Section	Evaluation
Hazard Area		
<i>Category 13:</i> Development within Coastal Barrier Resource	15	No development within the Texas coastal barrier resource system is proposed.
<i>Category 14:</i> Development in State Parks, Wildlife Management Areas or Preserves	15	No development in Texas state parks, wildlife management areas, or preserves is proposed.
<i>Category 15:</i> Alteration of Coastal Historic Areas	6 17	The proposed activities do not include any development that would alter or disturb coastal historic areas.
<i>Category 16:</i> Transportation Projects	15	No transportation construction or maintenance projects are proposed.
<i>Category 17:</i> Emission of Air Pollutants	8 17	Air emissions associated with project activities are summarized in Section 8. The proposed activities will be conducted in conformance with applicable air quality laws, standards, and regulations and shall avoid to the maximum extent practicable significant impact to onshore air quality.
<i>Category 18:</i> Appropriations of Water	15	No appropriations, impoundments, or diversions of water resources are proposed.
<i>Category 19:</i> Levee and Control Projects	15	No levee or flood control projects are proposed.
<i>Category 20:</i> Marine Fishery Management	17	Proposed activities shall avoid to the maximum extent practicable significant impact to marine fisheries.
<i>Category 22:</i> Policies for Major Actions	17	The proposed activities are not a "major action".

A certificate of Coastal Zone Management Consistency for the state of Texas is included as **Attachment 16-B**.

COASTAL ZONE MANAGEMENT

CONSISTENCY CERTIFICATION

INITIAL DEVELOPMENT OPERATIONS COORDINATION DOCUMENT

HIGH ISLAND BLOCK A379

OCS-G 13808

The proposed activity complies with the enforceable policies of the Louisiana approved management program and will be conducted in a manner consistent with such program.

Castex Offshore, Inc.

Lessee or Operator



Certifying Official

8.8.18

Date

COASTAL ZONE MANAGEMENT

CONSISTENCY CERTIFICATION

INITIAL DEVELOPMENT OPERATIONS COORDINATION DOCUMENT

HIGH ISLAND BLOCK A379

OCS-G 13808

The proposed activity complies with the enforceable policies of the Texas approved management program and will be conducted in a manner consistent with such program.

Castex Offshore, Inc.

Lessee or Operator



Certifying Official

8-8-18

Date

SECTION 17
ENVIRONMENTAL IMPACT ANALYSIS (EIA)

The Environmental Impact Analysis is included as **Attachment 17-A**.

Castex Offshore, Inc. (Castex)

Initial Development Operations Coordination Document High Island Block A-379 (BHL: High Island Block A-380) OCS-G 31808 (BHL: 35110)

(A) IMPACT PRODUCING FACTORS

ENVIRONMENTAL IMPACT ANALYSIS WORKSHEET

Environment Resources	Impact Producing Factors (IPFs) Categories and Examples Refer to recent GOM OCS Lease Sale EIS for a more complete list of IPFs					
	Emissions (air, noise, light, etc.)	Effluents (muds, cutting, other discharges to the water column or seafloor)	Physical disturbances to the seafloor (rig or anchor emplacements, etc.)	Wastes sent to shore for treatment or disposal	Accidents (e.g., oil spills, chemical spills, H ₂ S releases)	Discarded Trash & Debris
Site-specific at Offshore Location						
Designated topographic features		(1)	(1)		(1)	
Pinnacle Trend area live bottoms		(2)	(2)		(2)	
Eastern Gulf live bottoms		(3)	(3)		(3)	
Benthic communities			(4)			
Water quality			X		X	
Fisheries			X		X	
Marine Mammals	X(8)				X(8)	X
Sea Turtles	X(8)				X(8)	X
Air quality	X(9)					
Shipwreck sites (known or potential)			(7)			
Prehistoric archaeological sites			(7)		X	
Vicinity of Offshore Location						
Essential fish habitat			X		X(6)	
Marine and pelagic birds	X				X	X
Public health and safety					(5)	
Coastal and Onshore						
Beaches					X(6)	X
Wetlands					X(6)	
Shore birds and coastal nesting birds					X(6)	X
Coastal wildlife refuges					X	
Wilderness areas					X	

Attachment 17-A

Footnotes for Environmental Impact Analysis Matrix

- 1) Activities that may affect a marine sanctuary or topographic feature. Specifically, if the well or platform site or any anchors will be on the seafloor within the:
 - 4-mile zone of the Flower Garden Banks, or the 3-mile zone of Stetson Bank;
 - 1000-m, 1-mile or 3-mile zone of any topographic feature (submarine bank) protected by the Topographic Features Stipulation attached to an OCS lease;
 - Essential Fish Habitat (EFH) criteria of 500 ft. from any no-activity zone; or
 - Proximity of any submarine bank (500 ft. buffer zone) with relief greater than 2 meters that is not protected by the Topographic Features Stipulation attached to an OCS lease.
- 2) Activities with any bottom disturbance within an OCS lease block protected through the Live Bottom (Pinnacle Trend) Stipulation attached to an OCS lease.
- 3) Activities within any Eastern Gulf OCS block where seafloor habitats are protected by the Live Bottom (Low-Relief) Stipulation attached to an OCS lease.
- 4) Activities on blocks designated by the BOEM as being in water depths 300 meters or greater.
- 5) Exploration or production activities where H₂S concentrations greater than 500 ppm might be encountered.
- 6) All activities that could result in an accidental spill of produced liquid hydrocarbons or diesel fuel that you determine would impact these environmental resources. If the proposed action is located a sufficient distance from a resource that no impact would occur, the EIA can note that in a sentence or two.
- 7) All activities that involve seafloor disturbances, including anchor emplacements, in any OCS block designated by the BOEM as having high-probability for the occurrence of shipwrecks or prehistoric sites, including such blocks that will be affected that are adjacent to the lease block in which your planned activity will occur. If the proposed activities are located a sufficient distance from a shipwreck or a prehistoric site that no impact would occur, the EIA can note that in a sentence or two.
- 8) All activities that you determine might have an adverse effect on endangered or threatened marine mammals or sea turtles or their critical habitats.
- 9) Production activities that involve transportation of produced fluids to shore using shuttle tankers or barges.

(B) ANALYSIS

Site-Specific at High Island Block A-379

Proposed operations consist of the placing of one well into production.

Operations will be conducted without the use of any rigs or drilling.

1. Designated Topographic Features

Potential IPFs on topographic features are physical disturbances to the seafloor and accidents. High Island Block A-379 is within a Topographic Features Stipulation Block of West Flower Gardens Bank.

Physical disturbances to the seafloor: The Topographic Features Stipulation minimizes the likelihood of bottom-disturbing activities impacting the live-bottom communities of the banks by not allowing direct contact to the banks (No activity zone) from rig emplacements and anchoring activities.

Accidents: It is unlikely that an accidental surface or subsurface spill would occur from the proposed activities (refer to statistics in **Item 5**, Water quality). Oil spills cause damage to benthic organisms only if the oil contacts the organisms. Oil from a surface spill can be driven into the water column; measurable amounts have been documented down to a 10 m depth. At this depth, the oil is found only at concentrations several orders of magnitude lower than the amount shown to have an effect on corals. Because the crests of topographic features in the Northern Gulf of Mexico are found below 10 m, no oil from a surface spill could reach their sessile biota. Oil from a subsurface spill is expected to rise in the water column to the surface and become diluted by currents. Any oil remaining on the bottom is expected to be swept clear of the banks by currents moving around the banks. The activities proposed in this plan will be covered by Castex's Regional OSRP (refer to information submitted in **Section 9**).

There are no other IPFs (including emissions, effluents and wastes sent to shore for disposal) from the proposed activities that could cause impacts to topographic features.

2. Pinnacle Trend Area Live Bottoms

Potential IPFs on pinnacle trend area live bottoms include physical disturbances to the seafloor and accidents.

Physical disturbances to the seafloor: High Island Block A-379 is 336 miles from the closest live bottom (pinnacle trend) area; therefore, no adverse impacts are expected.

Accidents: It is unlikely that an accidental surface or subsurface spill would occur from the proposed activities (refer to statistics in **Item 5**, Water Quality). Oil spills have the potential to foul benthic communities and cause lethal and sublethal effects on live bottom organisms. Oil from a surface spill can be driven into the water column; measurable amounts have been

Attachment 17-A

documented down to a 10 m depth. At this depth, the oil is found only at concentrations several orders of magnitude lower than the amount shown to have an effect on marine organisms. Oil from a subsurface spill is not applicable due to the distance of these blocks from a live bottom (pinnacle trend) area. The activities proposed in this plan will be covered by Castex's Regional OSRP (refer to information submitted in **Section 9**).

There are no other IPFs (including emissions, effluents and wastes sent to shore for disposal) from the proposed activities which could impact a live bottom (pinnacle trend) area.

3. Eastern Gulf Live Bottoms

Potential IPFs on Eastern Gulf live bottoms include physical disturbances to the seafloor and accidents.

Physical disturbances to the seafloor: High Island Block A-379 is not located in an area characterized by the existence of live bottoms, and this lease does not contain a Live-Bottom Stipulation requiring a photo documentation survey and survey report.

Accidents: It is unlikely that an accidental surface or subsurface spill would occur from the proposed activities (refer to statistics in **Item 5**, Water Quality). Oil spills cause damage to live bottom organisms only if the oil contacts the organisms. Oil from a surface spill can be driven into the water column; measurable amounts have been documented down to a 10 m depth. At this depth, the oil is found only at concentrations several orders of magnitude lower than the amount shown to have an effect on marine invertebrates. Oil from a subsurface spill is not applicable due to the distance of these blocks from a live bottom area. The activities proposed in this plan will be covered by Castex's Regional OSRP (refer to information submitted in **Section 9**).

There are no other IPFs (including emissions, effluents and wastes sent to shore for disposal) from the proposed activities which could impact an Eastern Gulf live bottom area.

4. Benthic Communities

There are no IPFs (including emissions, physical disturbances to the seafloor, wastes sent to shore for disposal, or accidents) from the proposed activities that could cause impacts to benthic communities.

Operations proposed in this plan are in water depths of 324 feet. High-density benthic communities are found only in water depths greater than 984 feet (300 meters); therefore, Castex's proposed operations in High Island Block A-379 would not cause impacts to benthic communities.

5. Water Quality

IPFs that could result in water quality degradation from the proposed operations in High Island Block A-379 include disturbances to the seafloor, and accidents.

Physical disturbances to the seafloor: Bottom area disturbances resulting from the emplacement of drill rigs, the drilling of wells and the installation of platforms and pipelines would increase water-column turbidity and re-suspension of any accumulated pollutants, such as trace metals and excess nutrients. This would cause short-lived impacts on water quality conditions in the immediate vicinity of the emplacement operations.

Accidents: Oil spills have the potential to alter offshore water quality; however, it is unlikely that an accidental surface or subsurface spill would occur from the proposed activities. Between 1980 and 2000, OCS operations produced 4.7 billion barrels of oil and spilled only 0.001 percent of this oil, or 1 bbl for every 81,000 bbl produced. The spill risk related to a diesel spill from drilling operations is even less. Between 1976 and 1985, (years for which data were collected), there were 80 reported diesel spills greater than one barrel associated with drilling activities. Considering that there were 11,944 wells drilled, this is a 0.7 percent probability of an occurrence. If a spill were to occur, the water quality of marine waters would be temporarily affected by the dissolved components and small oil droplets. Dispersion by currents and microbial degradation would remove the oil from the water column and dilute the constituents to background levels. Historically, changes in offshore water quality from oil spills have only been detected during the life of the spill and up to several months afterwards. Most of the components of oil are insoluble in water and therefore float. The activities proposed in this plan will be covered by Castex's Regional Oil Spill Response Plan (refer to information submitted in **Section 9**).

There are no other IPFs (including emissions, physical disturbances to the seafloor, effluents and wastes sent to shore for disposal) from the proposed activities which could cause impacts to water quality.

6. Fisheries

IPFs that could cause impacts to fisheries as a result of the proposed operations in High Island Block A-379 include physical disturbances to the seafloor, and accidents.

Physical disturbances to the seafloor: The emplacement of a structure or drilling rig results in minimal loss of bottom trawling area to commercial fishermen. Pipelines cause gear conflicts which result in losses of trawls and shrimp catch, business downtime, and vessel damage. Most financial losses from gear conflicts are covered by the Fishermen's Contingency Fund (FCF). The emplacement and removal of facilities are not expected to cause significant adverse impacts to fisheries.

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Accidents: An accidental oil spill has the potential to cause some detrimental effects on fisheries; however, it is unlikely that such an event would occur from the proposed activities (refer to **Item 5**, Water Quality). The effects of oil on mobile adult finfish or shellfish would likely be sublethal and the extent of damage would be reduced to the capacity of adult fish and shellfish to avoid the spill, to metabolize hydrocarbons, and to excrete both metabolites and parent compounds. The activities proposed in this plan will be covered by Castex's Regional OSRP (refer to information submitted in **Section 9**).

There are no IPFs from emissions, effluents or wastes sent to shore for disposal from the proposed activities which could cause impacts to fisheries.

7. Marine Mammals

GulfCet II studies revealed that cetaceans of the continental shelf and shelf-edge were almost exclusively bottlenose dolphin and Atlantic spotted dolphin. Squid eaters, including dwarf and pygmy killer whale, Risso's dolphin, rough-toothed dolphin, and Cuvier's beaked whale, occurred most frequently along the upper slope in areas outside of anticyclones. IPFs that could cause impacts to marine mammals as a result of the proposed operations in High Island Block A-379 include emissions, discarded trash and debris, and accidents.

Emissions: Noises from drilling activities, support vessels and helicopters may elicit a startle reaction from marine mammals. This reaction may lead to disruption of marine mammals' normal activities. Stress may make them more vulnerable to parasites, disease, environmental contaminants, and/or predation (Majors and Myrick, 1990). There is little conclusive evidence for long-term displacements and population trends for marine mammals relative to noise.

Discarded trash and debris: Both entanglement in, and ingestion of debris have caused the death or serious injury of marine mammals (Laist, 1997; MMC, 1999). The limited amount of marine debris, if any, resulting from the proposed activities is not expected to substantially harm marine mammals. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V and the Marine Plastic Pollution Research and Control Act, and regulations imposed by various agencies including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA).

Castex will operate in accordance with the regulations and also avoid accidental loss of solid waste items by maintaining waste management plans, manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass.

Informational placards will be posted on all vessels and facilities having sleeping or food preparation capabilities. All offshore personnel, including contractors and other support

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services-related personnel (e.g. helicopter pilots, vessel captains and boat crews) will be indoctrinated on waste procedures, and will view the video (or Microsoft PowerPoint presentation), “Think About It” (*previously “All Washed Up: The Beach Litter Problem”*). Thereafter, all personnel will view the marine trash and debris training video annually. Offshore personnel will also receive an explanation from Castex management or the designated lease operator management that emphasizes their commitment to waste management in accordance with NTL No. 2015-G03-BSEE.

Accidents: Collisions between support vessels and cetaceans would be unusual events, however should one occur, death or injury to marine mammals is possible. Contract vessel operators can avoid marine mammals and reduce potential deaths by maintaining a vigilant watch for marine mammals and maintaining a safe distance when they are sighted. Vessel personnel should use a Gulf of Mexico reference guide to help identify the twenty-one species of whales and dolphins, and the single species of manatee that may be encountered in the Gulf of Mexico OCS. Vessel personnel must report sightings of any injured or dead protected marine mammal species immediately, regardless of whether the injury or death is caused by their vessel, to the NMFS Southeast Marine Mammal Stranding Hotline at 1-877-433-8299 (<http://www.nmfs.noaa.gov/pr/health/report.htm#southeast>). Any injured or dead protected species should also be reported to takereport.nmfs@noaa.gov. In addition, if the injury or death was caused by a collision with a contract vessel, the BOEM must be notified within 24 hours of the strike by email to protectedspecies@bsee.gov. If the vessel is the responsible party, it is required to remain available to assist the respective salvage and stranding network as needed.

Oil spills have the potential to cause sublethal oil-related injuries and spill-related deaths to marine mammals. However, it is unlikely that an accidental oil spill would occur from the proposed activities (refer to **Item 5**, Water Quality). Oil spill response activities may increase vessel traffic in the area, which could add to changes in cetacean behavior and/or distribution, thereby causing additional stress to the animals. The effect of oil dispersants on cetaceans is not known. The acute toxicity of oil dispersant chemicals included in Castex’s OSRP is considered to be low when compared with the constituents and fractions of crude oils and diesel products. The activities proposed in this plan will be covered by Castex’s OSRP (refer to information submitted in accordance with **Section 9**).

There are no other IPFs (including physical disturbances to the seafloor and effluents) from the proposed activities which could impact marine mammals.

8. Sea Turtles

IPFs that could cause impacts to sea turtles as a result of the proposed operations include emissions, discarded trash and debris, and accidents. GulfCet II studies sighted most loggerhead, Kemp’s ridley and leatherback sea turtles over shelf waters. Historically these species have been sighted up to the shelf’s edge. They appear to be more abundant east of the Mississippi River than they are west of the river (Fritts et al., 1983b; Lohofener et al., 1990). Deep waters may be used by all species as a transitory habitat.

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Emissions: Noise from drilling activities, support vessels, and helicopters may elicit a startle reaction from sea turtles, but this is a temporary disturbance.

Discarded trash and debris: Both entanglement in, and ingestion of, debris have caused the death or serious injury of sea turtles (Balazs, 1985). The limited amount of marine debris, if any, resulting from the proposed activities is not expected to substantially harm sea turtles. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V and the Marine Plastic Pollution Research and Control Act, and regulations imposed by various agencies including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA). Castex will operate in accordance with the regulations and also avoid accidental loss of solid waste items by maintaining waste management plans, manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass.

Informational placards will be posted on all vessels and facilities having sleeping or food preparation capabilities. All offshore personnel, including contractors and other support services-related personnel (e.g. helicopter pilots, vessel captains and boat crews) will be indoctrinated on waste procedures, and will view the video (or Microsoft PowerPoint presentation), “Think About It” (*previously “All Washed Up: The Beach Litter Problem”*). Thereafter, all personnel will view the marine trash and debris training video annually. Offshore personnel will also receive an explanation from Castex management or the designated lease operator management that emphasizes their commitment to waste management in accordance with NTL No. 2015-G03-BSEE.

Accidents: Collisions between support vessels and sea turtles would be unusual events, however should one occur, death or injury to sea turtles is possible. Contract vessel operators can avoid sea turtles and reduce potential deaths by maintaining a vigilant watch for sea turtles and maintaining a safe distance when they are sighted. Vessel crews should use a reference guide to help identify the five species of sea turtles that may be encountered in the Gulf of Mexico OCS. Vessel crews must report sightings of any injured or dead protected sea turtle species immediately, regardless of whether the injury or death is caused by their vessel, to the State Coordinators for the Sea Turtle Stranding and Salvage Network (STSSN) at http://www.sefsc.noaa.gov/species/turtles/stranding_coordinators.htm (phone numbers vary by state). Any injured or dead protected species should also be reported to takereport.nmfsser@noaa.gov. In addition, if the injury or death was caused by a collision with a contract vessel, the BOEM must be notified within 24 hours of the strike by email to protectedspecies@bsee.gov. If the vessel is the responsible party, it is required to remain available to assist the respective salvage and stranding network as needed.

All sea turtle species and their life stages are vulnerable to the harmful effects of oil through direct contact or by fouling of their food. Exposure to oil can be fatal, particularly to juveniles

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and hatchlings. However, it is unlikely that an accidental oil spill would occur from the proposed activities (refer to **Item 5**, Water Quality). Oil spill response activities may increase vessel traffic in the area, which could add to the possibility of collisions with sea turtles. The activities proposed in this plan will be covered by Castex's Regional Oil Spill Response Plan (refer to information submitted in accordance with **Section 9**).

There are no other IPFs (including physical disturbances to the seafloor and effluents) from the proposed activities which could impact sea turtles.

9. Air Quality

The projected air emissions identified in **Section 8** are not expected to affect the OCS air quality primarily due to distance to the shore or to any Prevention of Significant Deterioration Class I air quality area such as the Breton Wilderness Area. High Island Block A-379 is beyond the 200 kilometer (124 mile) buffer for the Breton Wilderness Area and is 108.5 miles from the coastline. Therefore, no special mitigation, monitoring, or reporting requirements apply with respect to air emissions.

Accidents and blowouts can release hydrocarbons or chemicals, which could cause the emission of air pollutants. However, these releases would not impact onshore air quality because of the prevailing atmospheric conditions, emission height, emission rates, and the distance of High Island Block A-379 from the coastline. There are no other IPFs (including effluents, physical disturbances to the seafloor, wastes sent to shore for treatment or disposal) from the proposed activities which could impact air quality.

10. Shipwreck Sites (known or potential)

IPFs that could impact known or unknown shipwreck sites as a result of the proposed operations in High Island Block A-379 include accidents and disturbances to the seafloor. High Island Block A-379 is not located in or adjacent to an OCS block designated by BOEM as having a high probability for occurrence of shipwrecks. Castex will report to BOEM the discovery of any evidence of a shipwreck and make every reasonable effort to preserve and protect that cultural resource. There are no other IPFs (including emissions, effluents, wastes sent to shore for treatment or disposal, or accidents) from the proposed activities which could impact shipwreck sites.

Accidents: An accidental oil spill has the potential to cause some detrimental effects to shipwreck sites if the release were to occur subsea. However, it is unlikely that an accidental oil spill would occur from the proposed activities (refer to **Item 5**, Water Quality). The activities proposed in this plan will be covered by Castex's Regional Oil Spill Response Plan (refer to information submitted in accordance with **Section 9**).

There are no other IPFs (including emissions, effluents, or wastes sent to shore for treatment or disposal) from the proposed activities that could cause impacts to shipwreck sites.

11. Prehistoric Archaeological Sites

IPFs that could cause impacts to prehistoric archaeological sites as a result of the proposed operations in High Island Block A-379 are disturbances to the seafloor and accidents (oil spills).

Disturbances to the seafloor: High Island Block A-379 is located inside the Archaeological Prehistoric high probability lines. Castex will report to BOEM the discovery of any object of prehistoric archaeological significance and make every reasonable effort to preserve and protect that cultural resource.

Accidents: An accidental oil spill has the potential to cause some detrimental effects to prehistoric archaeological sites if the release were to occur subsea. However, it is unlikely that an accidental oil spill would occur from the proposed activities (refer to **Item 5**, Water Quality). The activities proposed in this plan will be covered by Castex's Regional Oil Spill Response Plan (refer to information submitted in accordance with **Section 9**).

There are no other IPFs (including emissions, effluents, wastes sent to shore for treatment or disposal) from the proposed activities that could cause impacts to prehistoric archaeological sites.

Vicinity of Offshore Location

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1. Essential Fish Habitat (EFH)

IPFs that could cause impacts to EFH as a result of the proposed operations in High Island Block A-379 include physical disturbances to the seafloor and accidents. EFH includes all estuarine and marine waters and substrates in the Gulf of Mexico.

Physical disturbances to the seafloor: The Live Bottom Low Relief Stipulation, the Live Bottom (Pinnacle Trend) Stipulation, and the Eastern Gulf Pinnacle Trend Stipulation would prevent most of the potential impacts on live-bottom communities and EFH from bottom disturbing activities (e.g., anchoring, structure emplacement and removal).

Accidents: An accidental oil spill has the potential to cause some detrimental effects on EFH. Oil spills that contact coastal bays and estuaries, as well as OCS waters when pelagic eggs and larvae are present, have the greatest potential to affect fisheries. However, it is unlikely that an oil spill would occur from the proposed activities (refer to **Item 5**, Water Quality). The activities proposed in this plan will be covered by Castex's Regional OSRP (refer to information submitted in **Section 9**).

There are no other IPFs (including emissions, effluents or wastes sent to shore for treatment or disposal) from the proposed activities which could impact essential fish habitat.

2. Marine and Pelagic Birds

IPFs that could impact marine birds as a result of the proposed activities include air emissions, accidental oil spills, and discarded trash and debris from vessels and the facilities.

Emissions: Emissions of pollutants into the atmosphere from the proposed activities are far below concentrations which could harm coastal and marine birds.

Accidents: An oil spill would cause localized, low-level petroleum hydrocarbon contamination. However, it is unlikely that an oil spill would occur from the proposed activities (refer to **Item 5**, Water Quality). Marine and pelagic birds feeding at the spill location may experience chronic, nonfatal, physiological stress. It is expected that few, if any, coastal and marine birds would actually be affected to that extent. The activities proposed in this plan will be covered by Castex's Regional OSRP (refer to information submitted in **Section 9**).

Discarded trash and debris: Marine and pelagic birds could become entangled and snared in discarded trash and debris, or ingest small plastic debris, which can cause permanent injuries and death. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V and the Marine Plastic Pollution Research and Control Act, and regulations imposed by various agencies including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA). Castex will operate in accordance with the regulations and also avoid accidental loss of solid waste items by maintaining waste management plans, manifesting trash

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sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass. Informational placards will be posted on all vessels and facilities having sleeping or food preparation capabilities. All offshore personnel, including contractors and other support services-related personnel (e.g. helicopter pilots, vessel captains and boat crews) will be indoctrinated on waste procedures, and will view the video (or Microsoft PowerPoint presentation), “Think About It” (*previously “All Washed Up: The Beach Litter Problem”*). Thereafter, all personnel will view the marine trash and debris training video annually. Offshore personnel will also receive an explanation from Castex management or the designated lease operator management that emphasizes their commitment to waste management in accordance with NTL No. 2015-G03-BSEE. Debris, if any, from these proposed activities will seldom interact with marine and pelagic birds; therefore, the effects will be negligible.

There are no other IPFs (including effluents, physical disturbances to the seafloor, or wastes sent to shore for treatment or disposal) from the proposed activities which could impact marine and pelagic birds.

3. Public Health and Safety Due to Accidents.

There are no IPFs (emissions, effluents, physical disturbances to the seafloor, wastes sent to shore for treatment or disposal or accidents, including an accidental H₂S release) from the proposed activities which could cause impacts to public health and safety. In accordance with NTL No.’s 2008-G04, 2009-G27, and 2009-G31, sufficient information is included in **Section 4** to justify our request that our proposed activities be classified by BSEE as H₂S absent.

Coastal and Onshore

1. Beaches

IPFs from the proposed activities that could cause impacts to beaches include accidents (oil spills) and discarded trash and debris.

Accidents: Oil spills contacting beaches would have impacts on the use of recreational beaches and associated resources. Due to the distance from shore (108.5 miles), no significant adverse impacts are expected. The activities proposed in this plan will be covered by Castex’s Regional OSRP (refer to information submitted in **Section 9**).

Discarded trash and debris: Trash on the beach is recognized as a major threat to the enjoyment and use of beaches. There will only be a limited amount of marine debris, if any, resulting from the proposed activities. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V and the Marine Plastic Pollution Research and Control Act, and regulations imposed by various agencies including the United States Coast

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Guard (USCG) and the Environmental Protection Agency (EPA). Castex will operate in accordance with the regulations and also avoid accidental loss of solid waste items by maintaining waste management plans, manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass.

Informational placards will be posted on all vessels and facilities having sleeping or food preparation capabilities. All offshore personnel, including contractors and other support services-related personnel (e.g. helicopter pilots, vessel captains and boat crews) will be indoctrinated on waste procedures, and will view the video (or Microsoft PowerPoint presentation), “Think About It” (*previously “All Washed Up: The Beach Litter Problem”*). Thereafter, all personnel will view the marine trash and debris training video annually. Offshore personnel will also receive an explanation from Castex management or the designated lease operator management that emphasizes their commitment to waste management in accordance with NTL No. 2015-G03-BSEE.

There are no other IPFs (emissions, effluents, physical disturbances to the seafloor, or wastes sent to shore for treatment or disposal) from the proposed activities which could impact beaches.

2. Wetlands

IPFs from the proposed activities that could cause impacts to wetlands include accidents (oil spills) and discarded trash and debris.

Accidents: Oil spills could cause impacts to wetlands, however, it is unlikely that an oil spill would occur from the proposed activities (refer to **Item 5**, Water Quality). Due to the distance from shore (108.5 miles) and the response capabilities that would be implemented, no impacts are expected. The activities proposed in this plan will be covered by Castex’s Regional OSRP (refer to information submitted in **Section 9**).

Discarded trash and debris: There will only be a limited amount of marine debris, if any, resulting from the proposed activities. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V and the Marine Plastic Pollution Research and Control Act, and regulations imposed by various agencies including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA). Castex will operate in accordance with the regulations and also avoid accidental loss of solid waste items by maintaining waste management plans, manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass.

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Informational placards will be posted on all vessels and facilities having sleeping or food preparation capabilities. All offshore personnel, including contractors and other support services-related personnel (e.g. helicopter pilots, vessel captains and boat crews) will be indoctrinated on waste procedures, and will view the video (or Microsoft PowerPoint presentation), “Think About It” (*previously “All Washed Up: The Beach Litter Problem”*). Thereafter, all personnel will view the marine trash and debris training video annually. Offshore personnel will also receive an explanation from Castex management or the designated lease operator management that emphasizes their commitment to waste management in accordance with NTL No. 2015-G03-BSEE.

There are no other IPFs (emissions, effluents, physical disturbances to the seafloor, or wastes sent to shore for treatment or disposal) from the proposed activities which could impact wetlands.

3. Shore Birds and Coastal Nesting Birds

Accidents: Oil spills could cause impacts to shore birds and coastal nesting birds. However, it is unlikely that an oil spill would occur from the proposed activities (refer to **Item 5**, Water Quality). Given the distance from shore (108.5 miles) and the response capabilities that would be implemented, no impacts are expected. The activities proposed in this plan will be covered by Castex’s Regional OSRP (refer to information submitted in **Section 9**).

Discarded trash and debris: Coastal and marine birds are highly susceptible to entanglement in floating, submerged, and beached marine debris: specifically plastics. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V and the Marine Plastic Pollution Research and Control Act, and regulations imposed by various agencies including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA). Castex will operate in accordance with the regulations and also avoid accidental loss of solid waste items by maintaining waste management plans, manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass.

Informational placards will be posted on vessels and every facility that has sleeping or food preparation capabilities. All offshore personnel, including contractors and other support services-related personnel (e.g. helicopter pilots, vessel captains and boat crews) will be indoctrinated on waste procedures, and will view the video (or Microsoft PowerPoint presentation), “Think About It” (*previously “All Washed Up: The Beach Litter Problem”*). Thereafter, all personnel will view the marine trash and debris training video annually. Offshore personnel will also receive an explanation from Castex management or the designated lease operator management that emphasizes their commitment to waste management in accordance with NTL No. 2015-G03-BSEE.

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There are no other IPFs (emissions, effluents, physical disturbances to the seafloor, or wastes sent to shore for treatment or disposal) from the proposed activities that could cause impacts to shore birds and coastal nesting birds.

4. Coastal Wildlife Refuges

Accidents: An accidental oil spill from the proposed activities could cause impacts to coastal wildlife refuges. However, it is unlikely that an oil spill would occur from the proposed activities (refer to **Item 5**, Water Quality). Due to the distance from shore (108.5 miles) and the response capabilities that would be implemented, no impacts are expected. The activities proposed in this plan will be covered by Castex's Regional OSRP (refer to information submitted in **Section 9**).

Discarded trash and debris: Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V, the Marine Plastic Pollution Research and Control Act and regulations imposed by various agencies including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA). Castex will operate in accordance with the regulations and also avoid accidental loss of solid waste items by maintaining waste management plans, manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass.

Informational placards will be posted on vessels and every facility that has sleeping or food preparation capabilities. All offshore personnel, including contractors and other support services-related personnel (e.g. helicopter pilots, vessel captains and boat crews) will be indoctrinated on waste procedures, and will view the video (or Microsoft PowerPoint presentation), "Think About It" (*previously "All Washed Up: The Beach Litter Problem"*). Thereafter, all personnel will view the marine trash and debris training video annually. Offshore personnel will also receive an explanation from Castex management or the designated lease operator management that emphasizes their commitment to waste management in accordance with NTL No. 2015-G03-BSEE.

There are no other IPFs (emissions, effluents, physical disturbances to the seafloor, or wastes sent to shore for treatment or disposal) from the proposed activities that could cause impacts to coastal wildlife refuges.

5. Wilderness Areas

Accidents: An accidental oil spill from the proposed activities could cause impacts to wilderness areas. However, it is unlikely that an oil spill would occur from the proposed activities (refer to **Item 5**, Water Quality). Due to the distance from the nearest designated Wilderness Area (298 miles) and the response capabilities that would be implemented, no significant adverse impacts are expected. The activities proposed in this plan will be covered by Castex's Regional OSRP (refer to information submitted in **Section 9**).

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Discarded trash and debris: Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V, the Marine Plastic Pollution Research and Control Act and regulations imposed by various agencies including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA). Castex will operate in accordance with the regulations and also avoid accidental loss of solid waste items by maintaining waste management plans, manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass.

Informational placards will be posted on vessels and every facility that has sleeping or food preparation capabilities. All offshore personnel, including contractors and other support services-related personnel (e.g. helicopter pilots, vessel captains and boat crews) will be indoctrinated on waste procedures, and will view the video (or Microsoft PowerPoint presentation), “Think About It” (previously “All Washed Up: The Beach Litter Problem”). Thereafter, all personnel will view the marine trash and debris training video annually. Offshore personnel will also receive an explanation from Castex management or the designated lease operator management that emphasizes their commitment to waste management in accordance with NTL No. 2015-G03-BSEE.

There are no other IPFs (emissions, effluents, physical disturbances to the seafloor, or wastes sent to shore for treatment or disposal) from the proposed activities that could cause impacts to wilderness areas.

6. Other Environmental Resources Identified

There are no other environmental resources identified for this impact assessment.

(C) IMPACTS ON PROPOSED ACTIVITIES

The site-specific environmental conditions have been taken into account for the proposed activities. No impacts are expected on the proposed activities from site-specific environmental conditions.

(D) ENVIRONMENTAL HAZARDS

During the hurricane season, June through November, the Gulf of Mexico is impacted by an average of ten tropical storms (39-73 mph winds), of which six become hurricanes (> 74 mph winds). Due to its location in the gulf, High Island Block A-379 may experience hurricane and tropical storm force winds, and related sea currents. These factors can adversely impact the integrity of the operations covered by this plan. A significant storm may present physical hazards to operators and vessels, damage exploration or production equipment, or result in the release of hazardous materials (including hydrocarbons). Additionally, the displacement of equipment may disrupt the local benthic habitat and pose a threat to local species.

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The following preventative measures included in this plan may be implemented to mitigate these impacts:

1. Platform / structure Installation
Operator will not conduct platform / structure installation operations during Tropical Storm or Hurricane threat.
2. Pipeline Installation
Operator will not conduct pipeline installation operations during Tropical Storm or Hurricane threat.

(E) ALTERNATIVES

No alternatives to the proposed activities were considered to reduce environmental impacts.

(F) MITIGATION MEASURES

No mitigation measures other than those required by regulation will be employed to avoid, diminish, or eliminate potential impacts on environmental resources.

(G) CONSULTATION

No agencies or persons were consulted regarding potential impacts associated with the proposed activities. Therefore, a list of such entities has not been provided.

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Although not cited, the following were utilized in preparing this EIA:

- Hazard Surveys
- BOEM EIS's:
 - GOM Deepwater Operations and Activities. Environmental Assessment. BOEM 2000-001
 - GOM Central and Western Planning Areas Sales 166 and 168 Final Environmental Impact Statement. BOEM 96-0058.

SECTION 18 ADMINISTRATIVE INFORMATION

18.1 EXEMPTED INFORMATION DESCRIPTION

The proposed bottomhole location of the well has been removed from the Public Information copy of the DOCD as well as any discussions of the target objectives, geologic or geophysical data, and interpreted geology.

18.2 BIBLIOGRAPHY

1. Initial Exploration Plan (Control No. N-10010).