UNITED STATES GOVERNMENT
MEMORANDUM

September 24, 2019

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

Subject: Public Information copy of plan

Control #	-	N-10082
Type	-	Initial Exploration Plan
Lease(s)	-	OCS-G36513 Block - 136 Ship Shoal Area
Operator	-	Castex Offshore, Inc.
Description	-	Wells A and B
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.

Leslie Wilson
Plan Coordinator

Site Type/Name	Botm Lse/Area/Blk	Surface Location	Surf Lse/Area/Blk
WELL/A	G36513/SS/136	3979 FSL, 3542 FWL	G36513/SS/136
WELL/B	G36513/SS/136	3979 FSL, 3542 FWL	G36513/SS/136

CASTEX

CASTEX OFFSHORE, INC.
333 CLAY STREET, SUITE 2900
HOUSTON, TEXAS 77002

INITIAL EXPLORATION PLAN

SHIP SHOAL BLOCK 136
LEASE OCS-G 36513

PUBLIC INFORMATION COPY

August 20, 2019

CASTEX OFFSHORE, INC.

INITIAL EXPLORATION PLAN

LEASE OCS-G 36513

SHIP SHOAL BLOCK 136

SECTION A
PLAN CONTENTS

Lease OCS-G 36513, Ship Shoal Block 136 was acquired at the Gulf of Mexico Lease Sale No. 252 held on March 20, 2019. The lease was issued with an effective date of July 1, 2019 and a primary term ending June 30, 2024. Castex Offshore, Inc. (Castex) is the current designated operator of the lease.

This Initial Exploration Plan (Plan/EP) provides for the following:

- Drill, complete and test two (2) wells from a common surface location
- Install temporary well protector structure
- Note: The drilling rig has no anchors associated with proposed activities

(a) Plan Information Form

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

(b) Location

Included under this section are the following attachments:

- Location Map: ***Attachment A-2***
- Bathymetry Map: ***Attachment A-3***
- Typical Temporary Structure Schematic: ***Attachment A-4***

(c) Safety and Pollution Prevention Features

A description of the drilling unit is included on the OCS Plan Information Form. Rig specifications will be made part of the Application for Permit to Drill.

Safety features on the drilling unit will include well control, pollution prevention, and blowout prevention equipment as described in Title 30 CFR Part 250, Subparts C, D, E, and G; and as further clarified by MMS Notices to Lessees, and current policy making invoked by the MMS, Environmental Protection Agency and the U.S. Coast Guard. Appropriate life rafts, life jackets, ring buoys, etc., will always be maintained on the facility .

Pollution prevention measures include installation of curbs, gutters, drip pans, and drains on drilling deck areas to collect all contaminants and debris.

(d) Storage Tanks and/or Production Vessels

All facility tans of 25 barrels or more:

Type of Storage Tank	Type of Facility	Tank Capacity (bbls)	Number of Tanks	Total Capacity (bbls)	Fluid Gravity (API)
Fuel Oil	Jack-up Rig	900	4	3,600	35.4°

(e) Pollution Prevention Measures

The State of Florida is not an affected State for the activities proposed for in this plan; therefore, pursuant to NTL No. 2008-G04, this information is not required.

(f) Additional Measures

According to NTL No. 2008-G04, this section of the Plan is not applicable to the proposed operations.

(g) Processing Fee

A Pay.gov receipt is being included in this plan in the amount of $3,673.00 to cover the cost and processing fee for the proposed operations being conducted under this plan as ***Attachment A-5***.

Attachment A-1

U.S. Department of the Interior
Bureau of Ocean Energy Management

OMB Control Number: 1010-0151
OMB Approval Expires: 6/30/2021

OCS PLAN INFORMATION FORM

General Information

Type of OCS Plan:	X	Exploration Plan (EP)		Development Operations Coordination Document (DOCD)			
Company Name: **Castex Offshore, Inc.**				BOEM Operator Number: **02970**			
Address: **333 Clay Street, Suite 2900**				Contact Person: **Natalie Schumann**			
Houston, TX 77002				Phone Number: **(281) 878-0042**			
				E-Mail Address: nschumann@castexenergy.com			
If a service fee is required under 30 CFR 550.125(a), provide the		Amount paid	**$3,673**	Receipt No.	**75822106934**		

Project and Worst Case Discharge (WCD) Information

Lease(s): **OCS-G 36513**		Area: **Ship Shoal**			Block(s): **136**			Project Name (If Applicable): **NA**	
Objective(s)	X Oil		Gas		Sulphur		Salt	Onshore Support Base(s): **Port Fourchon, Louisiana**	
Platform / Well Name: **A & B**			Total Volume of WCD: **1,214,004 bbls**					API Gravity: **30°**	
Distance to Closest Land (Miles): **19.7**					Volume from uncontrolled blowout: **27,591 bbls/day**				

Have you previously provided information to verify the calculations and assumptions for your WCD?		Yes	X	No
If so, provide the Control Number of the EP or DOCD with which this information was provided				
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
Drill Well A	**11/01/2019**	**11/30/2019**	**30**
Complete Well A	**12/01/2019**	**12/20/2019**	**20**
Well test flaring of Well A	**12/21/2019**	**12/22/2019**	**2**
Drill Well B	**12/23/2019**	**1/21/2020**	**30**
Complete Well B	**1/22/2020**	**2/10/2020**	**20**
Well test flaring of Well B	**2/11/2020**	**2/12/2020**	**2**
Install Temporary Well Protector Structure	**2/13/2020**	**2/17/2020**	**5**

Description of Drilling Rig

X	Jackup		Drillship		Caisson		Tension leg platform
	Gorilla Jackup		Platform rig		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):							

Description of Lease Term Pipelines

From (Facility/Area/Block)	To (Facility/Area/Block)	Diameter (Inches)	Length (Feet)
NA			

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 A**					Previously reviewed under an approved EP or DOCD?		Yes	X	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.	**NA**			
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): **27,499**	For structures, volume of all storage and pipelines (Bbls): **NA**	API Gravity of fluid	**30°**

	Surface Location	**Bottom-Hole Location (For Wells)**	**Completion (For multiple completions, enter separate lines)**
Lease No.	**OCS-G 36513**		
Area Name	**Ship Shoal**		
Block No.	**136**		
Blockline Departures (in feet)	**N/S Departure: 3,979.77' FSL**	**N/S Departure:**	**N/S Departure:**
	E/W Departure: 3,542.00' FWL	**E/W Departure:**	**E/W Departure:**
Lambert X-Y coordinates	**X: 2,128,342.00**	**X:**	**X:**
	Y: 33,841.00	**Y:**	**Y:**
Latitude/ Longitude	**Latitude: 28° 45' 32.776"N**	**Latitude:**	**Latitude:**
	Longitude: 90° 55' 58.295"W	**Longitude:**	**Longitude:**

Water Depth (Feet): **55'**	MD (Feet):	TVD (Feet):	MD (Feet):	TVD (Feet):
Anchor Radius (if applicable) in feet: **NA**	**NA**			

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
NA			X:	Y:	
			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): **Well B**					Previously reviewed under an approved EP or DOCD?		Yes	**X**	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.	**N/A**			
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): **27,591**	For structures, volume of all storage and pipelines (Bbls): **NA**	API Gravity of fluid	**30°**

	Surface Location	**Bottom-Hole Location (For Wells)**	**Completion (For multiple completions, enter separate lines)**
Lease No.	**OCS-G 36513**		
Area Name	**Ship Shoal**		
Block No.	**136**		
Blockline Departures (in feet)	**N/S Departure: 3,979.77' FSL**	**N/S Departure:**	**N/S Departure:**
	E/W Departure: 3,542.00' FWL	**E/W Departure:**	**E/W Departure:**
Lambert X-Y coordinates	**X: 2,128,342.00**	**X:**	**X:**
	Y: 33,841.00	**Y:**	**Y:**
Latitude/ Longitude	**Latitude: 28° 45' 32.776"N**	**Latitude:**	**Latitude:**
	Longitude: 90° 55' 58.295"W	**Longitude:**	**Longitude:**

Water Depth (Feet): **55'**	MD (Feet):	TVD (Feet):	MD (Feet):	TVD (Feet):
Anchor Radius (if applicable) in feet: **NA**				

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
NA			X:	Y:	
			X:	Y:	
			X:	Y:	
			X:	Y:	
			X:	Y:	
			X:	Y:	
			X:	Y:	
			X:	Y:	

Attachment A-2

Y = 43,822.76

1 (G01513)

1 (G03790)

X = 2,124,800.00

X = 2,140,400.00

SS136

OCS-G 36513

CASTEX OFFSHORE, INC.

2 (G03790)

PROPOSED WELL LOCATION

LOCATION	BLOCK	CALLS		COORDINATES		LATITUDE	LONGITUDE	WD	MD	TVD
'A' (SL)	SS136	3,542.00' FWL	3,979.77' FSL	X = 2,128,342.00	Y = 33,841.00	28° 45' 32.776"N	90° 55' 58.295"W	55'		
'B' (SL)	SS136	3,542.00' FWL	3,979.77' FSL	X = 2,128,342.00	Y = 33,841.00	28° 45' 32.776"N	90° 55' 58.295"W	55'		

'A' & 'B' (SL)

3 (G03790)

Y = 29,861.23

1,000 0 1,000 2,000

SCALE IN FEET

SHEET 1 OF 1

PUBLIC INFORMATION

DATUM: NAD 27

SPHEROID: CLARKE 1866

PROJECTION: LAMBERT

ZONE: LOUISIANA SOUTH

Echo OFFSHORE LLC

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

CASTEX

CASTEX OFFSHORE, INC.

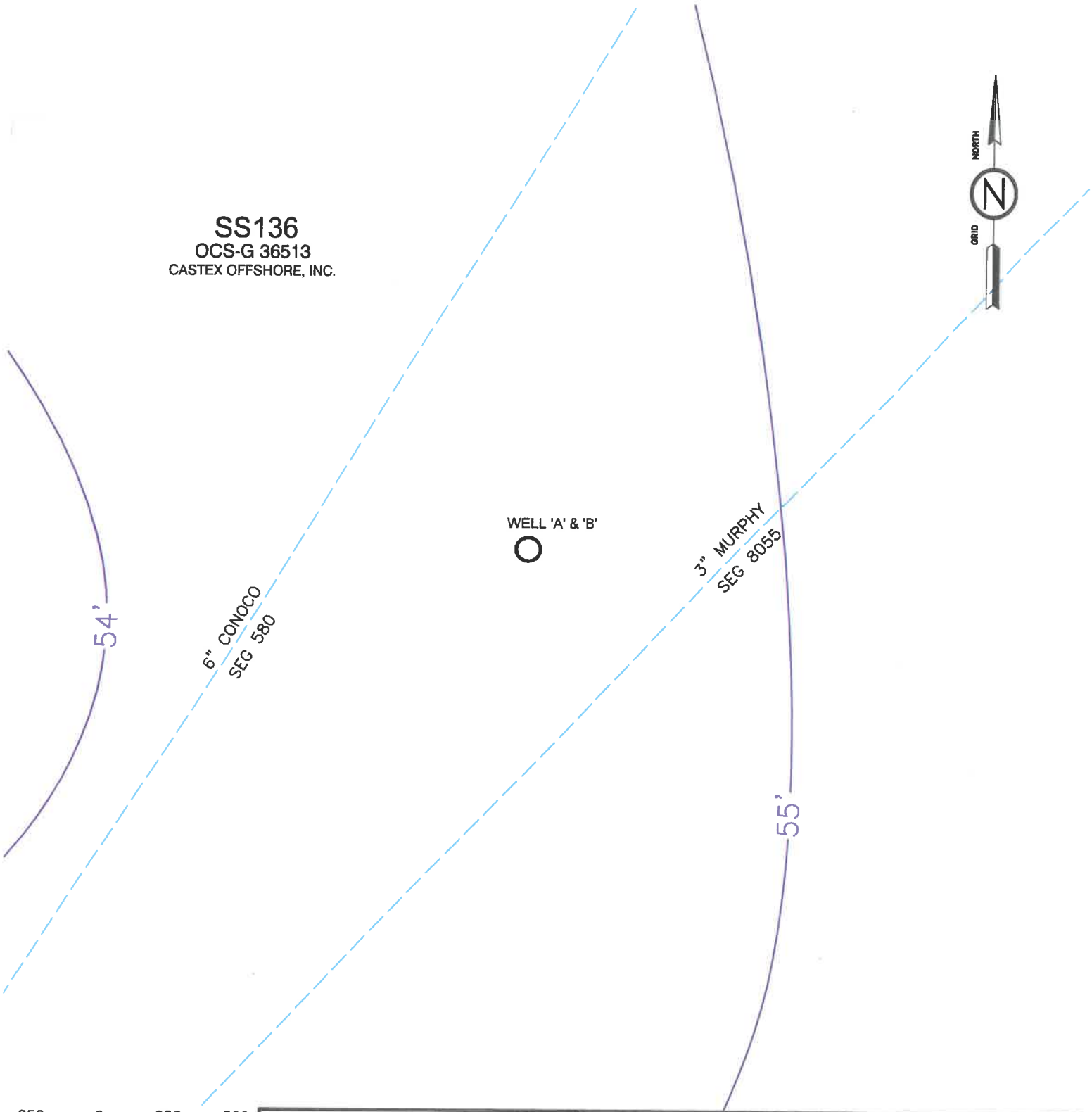
EXPLORATION PLAT

PROPOSED WELLS 'A' & 'B'
OCS-G 36513 BLOCK 136
SHIP SHOAL AREA

GULF OF MEXICO

DRAWN BY:	DATE:	CHECKED BY:	DRAWING No.:
RJN	08/12/2019	MEK	19-036-EXP
REV. DATE:	REV. No.:	SCALE:	JOB No.:
		1"=2,000'	19-036-12

Attachment A-3



250 0 250 500

SCALE IN FEET

SHEET 1 OF 5

WELL 'A' & 'B'
3,542.00' FWL
3,979.77' FSL
X = 2,128,342.00
= 33,841.00
LAT. = 28° 45' 32.776"N
LONG. = 90° 55' 58.295"W

NOTE:
THIS MAP IS SUPPLEMENTAL TO THE FULL SCALE MAPS PROVIDED IN ECHO OFFSHORE GEOPHYSICAL REPORT JOB NO. 19-036-12

DATUM: NAD 27
SPHEROID: CLARKE 1866
PROJECTION: LAMBERT
ZONE: LOUISIANA SOUTH

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

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CASTEX OFFSHORE, INC.

WELL ASSESSMENT

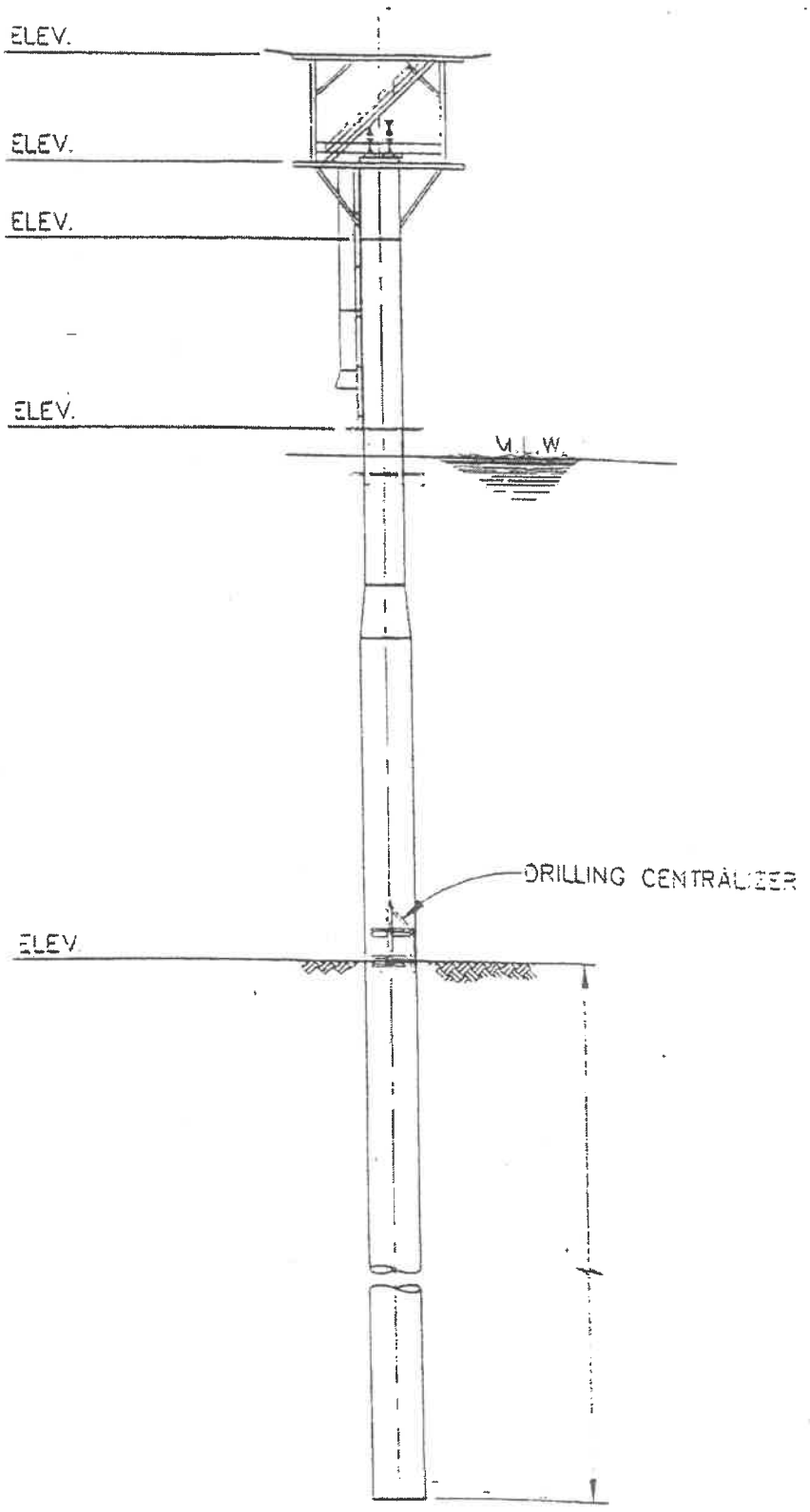
BATHYMETRY AND SEAFLOOR FEATURES
OCS-G 36513 BLOCK 136
SHIP SHOAL AREA

GULF OF MEXICO

DRAWN BY:	DATE:	CHECKED BY:	DRAWING No.:
RJN	08/12/2019	MEK	19-036-WELL MAPS
REV. DATE:	REV. No.:	SCALE:	JOB No.:
		1"=500'	19-036-12

Attachment A-4

TYPICAL WELL PROTECTOR CAISSON



Attachment A-5

Pay.gov

Receipt

Tracking Information

Pay.gov Tracking ID: 26JLHE3N

Agency Tracking ID: 75822106934

Form Name: BOEM Exploration Plan

Application Name: BOEM Exploration Plan - BF

Payment Information

Payment Type: Debit or credit card

Payment Amount: $3,673.00

Transaction Date: 08/21/2019 05:30:22 PM EDT

Payment Date: 08/21/2019

Region: Gulf of Mexico

Contact: Natalie Schumann 281-878-0042

Company Name/No: Castex Offshore, Inc., 02970

Lease Number(s): 36513, , , ,

Area-Block: Ship Shoal SS, 136: , : , : , : ,

Surface Locations: 1

Account Information

Cardholder Name: Caran Crooker

Card Type: Visa

Card Number: **********1476

SECTION B
GENERAL INFORMATION

(a) Applications and Permits
Listed in the table below are additional permits/applications to be filed before operations can commence under this Plan/EP:

Application/Permit	*Issuing Agency*	*Status*
CZM Consistency Certification	State of Louisiana	To be submitted
Application for Permit to Drill	BSEE	To be submitted
Rig Move Reports	BSEE, USCG and NGA	To be submitted

(b) Drilling Fluids
According to NTL No. 2008-G04, this section of the Plan is not applicable to the proposed operations.

(c) New or Unusual Technology
Castex does not propose to use any new or unusual technology to carry out the proposed exploration activities.

(d) Bonding Statement
The bond requirements for the activities and facilities proposed in this Plan/EP are satisfied by a $3,000,000.00 areawide development bond, furnished and maintained according to Title 30 CFR Part 256, Subpart I; NTL No. 2000-G16, "Guidelines for General Lease Surety Bonds;" and additional security under Title 30 CFR Part 256.53(d) and National NTL No. 2008-N07, "Supplemental Bond Procedures."

(e) Oil Spill Financial Responsibility
Oil Spill Financial Responsibility coverage will be obtained under Castex Offshore, Inc., BOEM company number 02970 for the activities proposed under this Plan/EP according to Title 30 CFR Part 253; and NTL No. 2008-N05, "Guidelines for Oil Spill Financial Responsibility for Covered Facilities".

(f) Deepwater Well Control Statement
According to NTL No. 2008-G04, this section of the Plan is not applicable to the proposed operations.

(g) Blowout Scenario
The blowout scenario within this section utilized the guidelines and requirements pursuant to NTL No. 2010-N06, which is included as ***Attachment B-1***.

Attachment B-1

CASTEX

Ship Shoal Block 136, Well B
Blowout Prevention Measures

In addition to the MMS 30 CFR 250, these additional measures will be performed to prevent and reduce the likelihood of a blowout and conduct effective and early intervention in the event of a blowout as required by US DOI BSEE NTL No. 2015-N01.

Blowout Prevention:

- Company will verify with contractor that the BOP has been certified, maintained and is capable of operating in the anticipated conditions required to drill this well.
- Company representative will witness and review all BOP tests, casing tests and formation integrity tests.
- Company representative will review and witness the installation, testing, function testing and operation of the diverter system and diverter outlets.
- Computerized system (OTC GreenLight or equivalent) will be used for all BOP testing.
- Key personnel on the rig will have a valid well control certificate.
- Company representative will relay and review the result of the FIT with the office in Houston prior to drilling ahead.
- Adequate circulation will be performed prior to cementing operations on any casing string, in order to obtain a quality cement job.
- All production casing strings will be centralized below, above, and across hydrocarbon bearing zones in order to ensure/assist with the proper zonal isolation of pay sands.
- Every effort will be made to review all offset and seismic data in order to prepare a mud weight schedule that will allow for safe drilling margin without putting excess hydrostatic pressures on known zones previously encountered.
- Lost circulation material will be added to the mud system in order to assist the mud systems ability to prevent lost circulation. Sweeps and concentrated pills will be used to prevent uncontrolled mud losses.
- Have spotting fluid on the rig or at the dock for quick response to stuck pipe.
- Wiper trips will be performed as hole conditions dictate in order to quantify the stability of the wellbore and determine if sufficient mud weights are being utilized.
- Connections will be simulated while drilling into pressure transition areas in order to properly assess the current wellbore conditions.
- Mud-loggers may be utilized during critical drilling operations as another set of eyes to monitor gas content of mud returns, formation characteristics and abnormalities of cuttings and estimate paleo aging of cuttings.
- Gas detection systems will be functioned daily. Run two gas detectors.
- Logging while drilling (LWD) tools may be utilized to evaluate formations, formation pressures and fluid content in the critical sections of the well. This will enable the real time identification of any changes in anticipated formation pressures and assist in the picking of casing points and

wellbore TD. Log data will be continuously review by the Castex drilling and geological departments.

- Pressure While Drilling (PWD) data may be utilized to maintain constant monitoring of hydrostatic pressures applied to the wellbore in the critical sections of the well.

Blowout Scenario:

- ***Estimated maximum flow rate:*** The estimated maximum flow rate would occur in the objective section, if a kick were taken and the well blew out. The maximum Worst Case Discharge (WCD) modeled for this scenario is 27,591 BOPD.
- ***Maximum duration of blowout days:*** The maximum duration of blowout is estimated to be 44 days total. This assumes the rig is damaged beyond repair. It is also assumed there are no suitable idle rigs and a working rig would have to be obtained from another Operator. That well would be suspended, the rig mobilized to location, and a relief well drilled.
- ***Maximum discharge volume:*** The total volume: barrels above (27,591 BOPD) times the flow rate X duration (44 days) = 1,214,004 bbls.

Blowout Intervention:

In the event of an uncontrolled flow of hydrocarbons from the wellbore, the Oil Spill Response Plan (OSRP) would be activated. In addition to the activation of this plan two scenarios (II & III) of well intervention have been described in the attached documentation and current availability of equipment to enact both well intervention scenarios identified:

- Assuming an uncontrolled flow situation, the MODU is intact and not sufficiently damaged, wellbore intervention would be performed from the MODU, or a vessel/barge mobilized nearby. It is assumed that the BOPs are compromised, that the rig has not caught on fire and is capable of supporting well control efforts with the assistance of a support vessel. As an example, the flow could be controlled from either a "top kill" method or from the removal of the damaged surface BOP stack or wellhead and subsequent replacement of the stack and the wellbore shut in.

- Assuming an uncontrolled flow situation, where the MODU and/or the wellbore is irreparably damaged during a blowout scenario, a relief well would have to be drilled. It is assumed that a suitable rig is not currently available due to the workload from any of the contractors working in the Gulf of Mexico. It assumes that another Operator will make their well safe and release the rig they have under contract to Castex for the use of drilling the relief well.

Castex believes this is the best case and worst case blowout scenario.

In the case of an uncontrolled flow of hydrocarbons, Castex will simultaneously pursue multiple wellbore intervention methods in an attempt to mitigate and terminate the spill, until the wellbore is brought under control.

CASTEX

Ship Shoal Block 136, Well B

Blowout Scenario

In the event of an uncontrolled flow of hydrocarbons from the wellbore, the Oil Spill Response Plan (OSRP) would be activated. Castex would immediately bring in the most qualified and experienced personnel in order to assist in the control of the blowout/spill. Castex has Cudd Pressure Control and Wild Well Control identified in the OSRP.

Three blowout scenarios will be described below:

Blowout Scenario I is most likely and is one that will remedy itself in 24 hours without any intervention. Scenario I will assume that the rig, BOPs and wellhead equipment are not damaged beyond repair and the well can be intervened after the well bridges over.

Blowout Scenario II will assume that the rig is still on location and capable of supporting a top kill or the replacement of the BOP Stack.

Blowout Scenario III will assume that all available MODU's are under contract, another Operator would have to make their well safe, suspend their contract with the Contractor, allow Castex to sign a contract, mob the rig to Castex's location and drill a relief well. These three cases should represent the quickest and simplest resolution to the longest and most difficult solution to the problem. Current availability of equipment to enact both well intervention scenarios will be identified.

Blowout Scenario I

Assuming an uncontrolled flow situation, the MODU is intact and not sufficiently damaged, and the well bridges over within a 24-hour period.

Duration:

- **24 hours**

Probability of the well bridging over is very high.

Wells in the Gulf of Mexico that have natural completions are typically produced with a sand face draw down of 1,000 psi or less. Depleting sandstone reservoirs in excess of 1,000 psi differential will dramatically increases the chances of sanding up the wellbore. The methodology of using absolute open flow (AOF) of the last casing string set will put maximum drawdown on the sandface. As a result, the rock will fail rapidly, causing a bridge to be formed.

Castex Offshore, Inc.
Blowout Scenario
Ship Shoal Block 136 Well B

Blowout Scenario II

Assuming an uncontrolled flow situation, the MODU is intact and not sufficiently damaged, wellbore intervention would be performed from the MODU, or a vessel/barge mobilized nearby. It is assumed that the BOPs are compromised, that the rig has not caught on fire and is capable of supporting well control efforts with the assistance of a support vessel. As an example, the flow could be controlled from either a "top kill" method or from removal of the damaged surface BOP stack or wellhead and subsequent replacement of the stack and the wellbore shut in.

Duration:

- 2 days to assess the situation and condition of the well.
- 2 days to mobilize and RU equipment
- 6 days to control well
- **10 days Total**

Blowout Scenario III

Assuming an uncontrolled flow situation, where the MODU and/or the wellbore is irreparably damaged during a blowout scenario, a relief well would have to be drilled. It is assumed that a suitable rig is not currently available due to the workload from any of the contractors working in the Gulf of Mexico. It assumes that another Operator will make their well safe and release the rig they have under contract to Castex for the use of drilling the relief well.

In the case of an uncontrolled flow of hydrocarbons, Castex will simultaneously pursue multiple wellbore intervention methods in an attempt to mitigate and terminate the spill until the wellbore is brought under control.

Duration:

- 2 days to assess the situation and condition of the well.
- 10 days for Operator to suspend current operations
- 2 days to mobilize Rig and equipment
- 30 days to drill relief well
- **44 days Total**

Rig Availability:

- Castex plans to contract either an EnscoRowan or Enterprise rig to drill the prospect
- Ensco 68, or comparable rig, would be utilized to drill the well.
- EnscoRowan has five (5) other rigs currently working in the Gulf of Mexico that are capable of drilling a relief well.
- Other Contractors and equipment capable of drilling a relief well:
  - Enterprise Offshore – four (4) jackups
  - Whitefleet – three (3) jackups
- 12 working jackups capable of drilling a relief well

Castex Offshore, Inc.
Blowout Scenario
Ship Shoal Block 136 Well B

Rig Package Constraints:

- Water depth is 55' at the Ship Shoal 136 location
- Relief well would be drilled from an open water location
- Use of mat or independent leg rigs is possible use for relief well
- Use of slot or cantilever rigs is possible use for relief well
- Use of a platform rig for a relief well is not an option.

SECTION C
GEOLOGICAL AND GEOPHYSICAL INFORMATION

(a) Geologic Description
The geological targets and a narrative of the trapping features proposed in the Plan for the proposed well is included as ***Attachment C-1***.

(b) Structure Map
A current structure contour map drawn on the top of each prospective hydrocarbon sand, showing the entire lease block, the location of the proposed well, and the locations of geological cross-section is included with this plan as attachments under this section as ***Attachment C-2***.

(c) Interpreted Seismic Lines
An interpreted deep seismic line is included as ***Attachment C-3.*** These lines are migrated, annotated with depth scale, and are within 500' of the surface location of the proposed well.

(d) Geological Structure Cross-Sections
An interpreted geological structure cross-section showing the location and depth of the proposed well and at least one key horizon and the objective sand labeled using standard biostratigrahic terms are included with this plan as attachments under this section as ***Attachment C-4.***

(e) Shallow Hazards Report
A shallow hazards assessment has been prepared for each proposed surface location, evaluating seafloor and subsurface geological and manmade features and conditions that may adversely affect drilling operations, and is included as ***Attachment C-5.***

(f) Shallow Hazards Assessment
Echo Offshore, LLC conducted a site-specific geophysical investigation of the southwestern quarter of Ship Shoal Block 136 during June 2019. This report includes the shallow hazard and archaeological assessments based on this data set.

Copies of the report are being submitted to the Bureau of Ocean Energy Management Regulation & Enforcement under separate cover.

(g) High Resolution Seismic Lines
Annotated high-resolution survey lines closest to each of the proposed well locations are included as ***Attachment C-6***.

(h) Stratigraphic Column
A generalized biostratigraphic/lithostratigraphic column depicting the well from the seafloor to total depth, with each objective horizon labeled, is included with this plan as an attachment under this section as ***Attachment C-7***.

(i) Time vs Depth Tables
Castex has determined that there is sufficient well control data for the target areas proposed in this plan; therefore, seismic time versus depth tables for the proposed well location is not required.

Attachment C-1

Attachment C-2

Attachment C-3

Attachment C-4

Attachment C-5

Echo OFFSHORE LLC

36499 Perkins Road
Prairieville, Louisiana 70769
Telephone: 225.673.2163

August 12, 2019

Job No. 19-036-12

Bureau of Ocean Energy Management (MS 5230)
Gulf of Mexico OCS Region
1201 Elmwood Park Blvd.
New Orleans, LA 70123-2394

RE: Castex Offshore, Inc.
Proposed Wells 'A' & 'B', OCS-G 36513
Block 136, Ship Shoal Area
Shallow Hazards and Archaeological Assessment

Castex Offshore, Inc. proposes to drill Wells 'A' & 'B' from the following common surface location:

Datum: NAD 27	Spheroid: Clarke 1866	Projection: LAMBERT	Zone: LAS	Central Meridian: 91° 20' West
Latitude: 28° 45' 32.776" N			Longitude: 90° 55' 58.295" W	
X: 2,128,342.00			Y: 33,841.00	
FWL: 3,542.00'			FSL: 3,979.77'	

Echo Offshore, LLC conducted a high-resolution geophysical investigation of the southwestern corner of Block 136 on June 19th and 20th, 2019, using 100-meter primary grid spacing and 900-meter tie lines on behalf of Castex Offshore, Inc. (Castex). Castex has selected Echo Offshore to prepare this shallow hazard and archaeological assessment for the proposed drill site to comply with **NTL No. 2008-G05** and **NTL No. 2005-G07** from the Bureau of Ocean Energy Management (BOEM), Gulf of Mexico Region. Geophysical record copies are enclosed for the magnetometer, side scan sonar, subbottom profiler, echo sounder, and processed seismic sections from the transect line nearest the proposed well site as required by the BOEM in **NTL No. 2008-G04**.

- ***Water depth*** is slightly less than 55 feet surrounding the proposed drill site. The seafloor is relatively featureless and water depths increase to the east/southeast at an approximate rate of 2.6 feet per mile.

- ***Seafloor sediments*** reportedly consist of clayey silt (USDI MMS Visual No. 3, 1983).

- ***Reported Seafloor installations*** closest to the proposed well include the 3" Murphy pipeline (Segment 8055) and the 6" Conoco pipeline (Segment 580), located approximately 565' SE and 732' NW, respectively. As discussed in the site assessment report, neither of these pipelines were verified by geophysical sensors. It is not known if they have been removed, displaced, or are buried too deeply to be detected. Caution should be employed when operating in proximity to these reported pipelines and diver confirmation of the proposed well site is recommended.

- ***Magnetic anomalies*** were not identified within 1,000' of the proposed surface location. The closest anomalies to the proposed well site are anomalies 12 and 13, located approximately 2,410' SW of the proposed well site. Anomaly No. 12 has been marked for avoidance by 100' as a potential hazard and potential cultural resource. No seafloor features were observed to corresponded to these anomalies and they remain unidentified.

- ***Side scan sonar*** verified that the seafloor immediately surrounding the proposed well site was clear of protruding obstructions. No sonar targets were identified within the site specific grid.

- ***Subbottom data*** in the vicinity of the surface location resolved an uppermost unit interpreted as soft clays and silts approximately 18' thick. The base of this unit (Horizon H01) is interpreted as a minor diffuse gas front. Reduction in soil load bearing capacity is possible at this level. Resolution beneath this front is attenuated, but the underlying sediments are interpreted as clays and silts with occasional sands and are observed to approximately 70' BML. No shallow channeling or faulting was observed on the subbottom profiler records within the study area.

- ***Processed seismic data*** resolved three discrete units (B, C, & D) with penetration reaching approximately 1.9 seconds TWT BSL. ***Unit B*** is interpreted as clays and silts with occasional sands. The base of Unit B extends to 1,309' BSL (1,254' BML) and is termed horizon H10. No significant indicators of shallow gas, drilling hazards or problems are interpreted within Unit B at the proposed well location. ***Unit C*** is interpreted as clays and silts with numerous sands. An anomaly indicative of a Slight Risk of Gas occurring within the upper part of Unit C is present 60' to the east of the proposed surface location at 1,675' BSL. The anomaly presents as a trough loaded event with around 3x background amplitude response. The anomaly is not fully resolved and is interpreted as a thin <10' thick sand interbed. The anomaly is not seen on any adjacent lines. Due to the relative proximity of the anomaly to the proposed well location drilling caution is advised at this level. A well-defined fault will cross the proposed vertical wellbore at 3,631' BSL (3,576' BML). This fault has limited upward and downward vertical extent, although it could induce minor drilling fluid circulation problems and wellbore stability problems and appropriate precautions should therefore be employed when intersecting the fault. Due to the increased potential for poorly consolidated granular material in this interval, minor drilling fluid circulation and wellbore stability problems are possible within Unit C. No other significant indications of shallow gas, drilling hazards or problems are interpreted in Unit C at the proposed well location. The base of Unit C was mapped at 3,631' BSL (3,576' BML). ***Unit D*** is interpreted as clays and silts with several sands and extends beyond the depth of data penetration at 6,884' BSL (6,829' BML). No significant indications of shallow gas, drilling hazards or problems are interpreted in Unit D at the proposed well location.

Proposed Well 'A' is a straight hole and 'B' is a directional. The deviation kick-off point for Well 'B' occurs just below Horizon H20, within the upper portion of Unit D. The deviated well path will encounter similar conditions to the straight hole well path to the base of the 2DHRS data with no significant drilling hazards or problems interpreted.

The operator has identified the primary hazards to rig movements, ancillary anchor and/or mooring deployments, and drilling. The proposed surface location will be marked with DGPS during rig moves and drilling to comply with the **BOEM On-Site Requirements** specified in **NTL No. 2008-G05, Section VI, Item B-2(a).**

No sonar targets or other features on the geophysical data were recorded which were interpreted as probable shipwrecks, or possible high probability areas for prehistoric habitation within 1,000 feet of the proposed well location. Assigned avoidances for magnetic anomalies should be noted and adhered to during operations. Pursuant to 30 CFR 550.194 (c), 30 CFR 550.101 (c), and **NTL No. 2005-G07**, if any archaeological or potentially historically significant materials are observed during lease development, operations will immediately cease in that area and appropriate BOEM/BSEE personnel will be notified within 48 hours of discovery.

The operator and subcontractors will apply the safest and best available technologies during rig moves and drilling operations.

Sincerely,

Matt Keith
Geoscience Manager

Andrew Haigh
Marine Geophysicist

Attachment C-6

Attachment C-7

SECTION D
HYDROGEN SULFIDE INFORMATION

(a) Concentration

Castex does not anticipate encountering any H_2S during the proposed operations.

(b) Classification

The basis for determination of H_2S is the evaluation of the following offset wells which were drilled to the stratigraphic equivalent of the Sand Series as proposed in this plan.

Lease Number	Area / Block	Well Name	Sand Series

(c) H2S Contingency Plan

In accordance with 30 CFR 250.490(c), a contingency plan is not required since the area should be classified as H2S absent.

(d) Modeling Report

According to NTL No. 2008-G04, this section of the Plan/EP is not applicable to the proposed operations.

SECTION E
BIOLOGICAL, PHYSICAL AND SOCIOECONOMIC INFORMATION

(a) High-Density Deepwater Benthic Communities Information
This Plan/EP does not propose activities that could disturb seafloor areas in water depths of 300 meters (984 feet) or greater; therefore, "Deepwater Benthic Communities" information is not required.

(b) Topographic Features Map
Activities proposed in this Plan/EP do not fall within 305 meters (1000 feet) of a topographic "no activity zone".

(c) Topographic Features Statement
All activities proposed under this Plan/EP will be conducted outside all Topographic Feature Protective Zones, therefore shunting of drill cuttings and drilling fluids is not required.

(d) Live Bottoms (Pinnacle Trend) Map
Ship Shoal Block 136 is not located within 61 meters (200 feet) of any live-bottom (pinnacle trend) features.

(e) Live Bottoms (Low Relief) Map
Ship Shoal Block 136 is not located within 100 feet of any live-bottom (low-relief) features.

(f) Potentially Sensitive Biological Features
Ship Shoal Block 136 not located within 30 meters (100 feet) of potentially sensitive biological features.

(g) Remotely Operated Vehicle (ROV) Surveys
The activities proposed in this Plan/EP are not located within an area where ROV Surveys are required.

(h)Threatened and Endangered Species, Critical Habitat, and Marine Mammal Information
Under Section 7 of the Endangered Species Act (ESA) all federal agencies must ensure that any actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of a listed species, or destroy or adversely modify its designated critical habitat.

In accordance with the 30 CFR 250, Subpart B, effective May 14, 2007, and further outlined in Notice to Lessees (NTL) 2008-G04, lessees/operators are required to address site-specific information on the presence of federally listed threatened or endangered species and critical habitat designated under the ESA and marine mammals protected under the Marine Mammal Protection Act (MMPA) in the area of proposes activities under this plan.

NOAA Fisheries currently lists the Sperm Whale, Leatherback Turtle, Green Turtle, Hawksbill Turtle, and the Kemp's Ridley Turtle as endangered and the Loggerhead Turtle and Gulf Sturgeon as threatened. Currently there are no designated critical habitats for the listed species in the Gulf of Mexico Outer Continental Shelf, however, it is possible that one or more of these species could be seen in the area of our operations.

BIOLOGICAL, PHYSICAL AND SOCIOECONOMIC INFORMATION

(i) Archaeological Report

Echo Offshore, LLC conducted a high-resolution geophysical survey covering the southwestern quarter of Ship Shoal Block 136 during June 2019.

Ship Shoal Block 136 has a high potential for containing archaeological properties, therefore, an Archaeological Survey Report has been prepared in accordance with NTL 2005-G07 "Archaeological Surveys and Reports" and is being submitted under separate cover.

(j) Air and Water Quality Information

The State of Florida is not an affected State for the activities proposed in this Plan/EP; therefore, pursuant to NTL No. 2008-G04, this information is not required.

(k) Socioeconomic Information

The State of Florida is not an affected State for the activities proposed in this Plan/EP; therefore, pursuant to NTL No. 2008-G04, this information is not required.

SECTION F
WASTES AND DISCHARGES INFORMATION

(a) Projected Generated Wastes

The projected generated wastes associated with the activities provided for in this Plan/EP are included in ***Attachment F-1***.

(b) Projected Ocean Discharges

The projected ocean discharges associated with the activities provided for in this Plan/EP are included in ***Attachment F-2***.

(c) Modeling Report

According to NTL No. 2008-G04, this section of the Plan is not applicable to the proposed operations.

Attachment F-1

TABL . WASTES YOU WILL GENERATE, TREAT AN DOWNHOLE DISPOSE OR DISCHARGE TO THE GOM

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

Projected generated waste			Projected ocean discharges		Projected Downhole Disposal
Type of Waste and Composition	Composition	Projected Amount	Discharge rate	Discharge Method	Answer yes or no
Will drilling occur ? If yes, you should list muds and cuttings					
EXAMPLE: Cuttings wetted with synthetic based fluid	*Cuttings generated while using synthetic based drilling*	*X bbl/well*	*X bbl/day*	*discharge pipe*	*No*
Water-based drilling fluid	barite, additives	8500 bbl	<1000 bbl/hr	discharge overboard	No
Cuttings wetted with water-based fluid	barite, additives	2100 bbl	<1000 bbl/hr	discharge overboard	No
Cuttings wetted with oil-based fluid	N/A	N/A	N/A	N/A	N/A
Brine	N/A	N/A	N/A	N/A	N/A
Will humans be there? If yes, expect conventional waste					
EXAMPLE: Sanitary waste water		*X liter/person/day*	*NA*	*chlorinate and discharge*	*No*
Domestic waste (kitchen water, shower water)	grey water	3150 bbls/well	100 bbls/day	chlorinate and discharge	No
Sanitary waste (toilet water)	treated sanitary waste	1620 bbls/well	75 bbls/day		No
Is there a deck? If yes, there will be Deck Drainage					
Deck Drainage	rainfall	Unknown	5 bbls/day	discharge overboard	No
Will you conduct well treatment, completion, or workover?					
well treatment fluids	Surfactants & Solvents	200 bbls/day	N/A	N/A	N/A
well completion fluids	CaCl/CaBr/etc	1500 bbls/day	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	seawater	925,000 bbls	6250 bbls/day	discharge overboard	No
Blowout prevent fluid	N/A	N/A	N/A	N/A	N/A
Ballast water	seawater	24,000 bbls	N/A	discharge overboard	No
Bilge water	fresh water, seawater	635 bbls	88 bbls/month	discharge overboard	No
Excess cement at seafloor	spacer, cement, & additives	N/A	N/A	N/A	No
Fire water	seawater	1,200 bbls	535 bbls/month	discharge overboard	No
Cooling water	seawater	485,000 bbls	12500 bbls/day	discharge overboard	No
Will you produce hydrocarbons? If yes fill in for produced water.					
Produced water	NA	NA			
Will you be covered by an individual or general NPDES permit ?			GENERAL PERMIT		

NOTE: If you will not have a type of waste, enter NA in the row.

Attachment F-2

TABLE 2. WASTES YOU WILL TRANSPORT AND /OR DISPOSE 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.						
	Water-based drilling fluid or mud	*Barite*	NA	NA	NA	NA
	Oil-based drilling fluid or mud	Diesel Based Drilling Fluids	MPT Tanks	R360 Fourchon, LA	NA	Recycle/Injection/Land Farming/ReUse
	Synthetic-based drilling fluid or mud	N/A	N/A	N/A	N/A	N/A
	Cuttings wetted with Water-based fluid	N/A	NA	NA	NA	NA
	Cuttings wetted with Synthetic-based fluid	N/A	N/A	N/A	N/A	N/A
	Cuttings wetted with oil-based fluids	Diesel Based Drill Cuttings	MPT Tanks	R360 Fourchon, LA	NA	Recycle/Injection/Land Farming/ReUse
	Completion Fluids	CaCl/CaBr/etc.	Workboat Tanks / MPT	Fluid Company, Fourchon	1650 bbls/well	Recycle/Injection/Land Farming/ReUse
	Completion Spacer & Wash Fluids	Surfactants & Solvents	Workboat Tanks	Fluid Company, Fourchon	200 bbls/well	Recycle/Injection/Land Farming/ReUse
Will you produce hydrocarbons? If yes fill in for produced sand.						
	Produced sand	NA	NA	NA	NA	NA
Will you have additional wastes that are not permitted for discharge? If yes, fill in the appropriate rows.						
	EXAMPLE: trash and debris	***cardboard, aluminum,***	***barged in a storage bin***	***shorebase***	***x lb/well***	***recycle***
	trash and debris	trash and debris	storage bags/bins on supply/crew boat	Dock, Fourchon	150 cu ft/week	landfill
	used oil	used oil	drums/MPT on supply/crew boat	Dock, 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	Dock, Fouchon	200 lbs/yr	hazardous waste

NOTE: If you will not have a type of waste, enter NA in the row.

SECTION G
AIR EMISSIONS INFORMATION

(a) Emissions Worksheets and Screening Questions

(1) Screening Questions

Screen Procedures for EP's	Yes	No
Is any calculated Complex Total (CT) Emission amount (tons) associated with your proposed exploration 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
Are your proposed exploration activities located east of 87.5° W longitude?		X
Do you expect to encounter H_2S 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

(2) Emissions Worksheets

Included in this section as ***Attachment G-1***, is the Projected Air Quality Emissions Report worksheet (Form BOEM-0138).

This information was calculated by:

Natalie Schumann
Castex Offshore, Inc.
(281) 878-0042
nschumann@castexenergy.com

Attachment G-1

OMB Control No 10-0151
OMB Approval Expires: 06/30/2021

EXPLORATION PLAN (EP)
AIR QUALITY SCREENING CHECKLIST

COMPANY	CASTEX OFFSHORE, INC.
AREA	Ship Shoal
BLOCK	136
LEASE	36513
PLATFORM	N/A
WELL	A & B
COMPANY CONTACT	Natalie Schumann
TELEPHONE NO.	(281) 878-0042
REMARKS	Drill, comlete, test two (2) wells & install typical well protector structure

EMISSIONS C, .ATIONS 1ST YEAR

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL		CONTACT	PHONE	REMARKS
CASTEX OFFSHORE, IN	Ship Shoal	136	36513	N/A	A & B		Natalie Schumann	(281) 878-0042	

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	11400	550.62	13214.88	24	59	8.04	4.61	276.21	8.29	60.26	5.69	3.26	195.56	5.87	42.67
	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
	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
	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
	VESSELS>600hp diesel(crew)	5400	260.82	6259.68	10	24	3.81	2.18	130.84	3.93	28.55	0.46	0.26	15.70	0.47	3.43
	VESSELS>600hp diesel(supply)	4125	199.2375	4781.70	15	24	2.91	1.67	99.94	3.00	21.81	0.52	0.30	17.99	0.54	3.93
	VESSELS>600hp diesel(tugs)	15000	724.5	17388.00	24	2	10.57	6.06	363.44	10.90	79.30	0.25	0.15	8.72	0.26	1.90
FACILITY INSTALLATION	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
	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
	MISC.	BPD	SCF/HR	COUNT												
	TANK-	0			0	0				0.00					0.00	
DRILLING WELL TEST	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
	GAS FLARE		208333.3		24	2		0.12	14.87	12.56	80.94		0.00	0.36	0.30	1.94
2019 YEAR TOTAL							25.32	14.64	885.30	38.68	270.85	6.92	3.97	238.33	7.44	53.86
EXEMPTION CALCULATION	DISTANCE FROM LAND IN MILES											1831.50	1831.50	1831.50	1831.50	49172.32
	55.0															

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL		CONTACT	PHONE	REMARKS
CASTEX OFFSHORE, INC.	Ship Shoal	136	36513	N/A	A & B		Natalie Schumann	(281) 878-00	

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	11400	550.62	13214.88	24	46	8.04	4.61	276.21	8.29	60.26	4.44	2.54	152.47	4.57	33.27
install typical well	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
protector structure	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
	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
	VESSELS>600hp diesel(crew)	5400	260.82	6259.68	10	20	3.81	2.18	130.84	3.93	28.55	0.38	0.22	13.08	0.39	2.85
	VESSELS>600hp diesel(supply)	4125	199.2375	4781.70	15	20	2.91	1.67	99.94	3.00	21.81	0.44	0.25	14.99	0.45	3.27
	VESSELS>600hp diesel(tugs)	15000	724.5	17388.00	24	2	10.57	6.06	363.44	10.90	79.30	0.25	0.15	8.72	0.26	1.90
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
	MISC.	BPD	SCF/HR	COUNT												
	TANK-	0			0	0				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		208333.3		24	2		0.12	14.87	12.56	80.94		0.00	0.36	0.30	1.94
2020 YEAR TOTAL							**25.32**	**14.64**	**885.30**	**38.68**	**270.85**	**5.51**	**3.16**	**189.62**	**5.98**	**43.24**
EXEMPTION CALCULATION	DISTANCE FROM LAND IN MILES											**1831.50**	**1831.50**	**1831.50**	**1831.50**	**49172.32**
	55.0															

SL ıARY

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL
CASTEX OFFS	Ship Shoal	136	36513	N/A	A & B

Year	Emitted Substance				
	PM	SOx	NOx	VOC	CO
2019	6.92	3.97	238.33	7.44	53.86
2020	5.91	3.16	189.62	5.98	43.24
Allowable	1831.50	1831.50	1831.50	1831.50	49172.32

SECTION H
OIL SPILLS INFORMATION

(a) Oil Spill Response Planning

All proposed activities and facilities in this Plan/EP will be covered by the Regional Oil Spill Response Plan (OSRP) filed by Castex Offshore, Inc. (BOEM Company Number 02970), The most recent version of this plan was approved on December 20, 2018 (OSRP Control No. O-653) in accordance with 30 CFR 254.30(b)(2).

(a)(2)(ii) SPILL RESPONSE SITES

Primary Response Equipment Location	Preplanned Staging Location(s)
Houma, LA	Houma, LA
Harvey, LA	Harvey, LA
Leeville, LA	Port Fourchon, LA

(a)(2)(iii) OSRO INFORMATION

Company's primary equipment provider is Clean Gulf Associates (CGA). The Marine Spill Response Corporation's (MSRC) STARS network will provide closest available personnel, as well as an MSRC supervisor to operate the equipment.

(a)(2)(iv) WORST-CASE SCENARIO COMPARISON

Category	Regional OSRP WCD	EP WCD
Type of Activity	Drilling	Drilling
Facility Location (Area/Block)	WD 61	SS 136
Facility Designation	Platform A	Well B / MODU
Distance to Nearest Shoreline (miles)	13 miles	19.7 miles
Volume Storage tanks (total) Uncontrolled blowout Total Volume	49,218 bbls	0 27,591 **27,591 bbls**
Type of Oil(s) (Crude, condensate, diesel)	Crude	Crude
API Gravity	38.7°	30°

The >10-mile drilling WCD volumes in this Plan/EP does not supersede the >10-mile drilling WCD as approved in the Regional OSRP.

Since Castex has the capability to respond to the worst-case spill scenario included in the Regional OSRP approved on December 20, 2018, and since the worst-case scenario determined for this Plan/EP does not replace the worst-case scenario submitted in the updated Regional OSRP, Castex Offshore, Inc. hereby certifies that Castex 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 our Plan/EP.

(b) Spill Response Discussion for NEPA Analysis

No new or unusual technology is being used by Castex regarding spill control, cleanup or prevention.

The Oil spill response discussion is included under this section as ***Attachment H-1***.

(c) Modeling Report

According to NTL No. 2008-G04, this section of the Plan is not applicable to the proposed operations.

(d) Worst-Case Discharge Calculations and Assumptions

Worst-case discharge (WCD) calculations and assumptions within this section utilized guidelines and requirements pursuant to NTL No. 2010-N06, which is included as ***Attachment H-2***. Discussions regarding geologic information are considered proprietary information and have been omitted from the public copy of the plan.

Attachment H-1

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 drilling operations, estimated to be 27,591 barrels of crude oil with an API gravity of 30°.

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 16% probability of impact to the shorelines of Cameron Parish, Louisiana within 30 days. Cameron Parish includes the east side of Sabine Lake, Sabine National Wildlife Refuge, Calcasieu Lake, Lacassine National Wildlife Refuge (inland) and Grand Lake. Cameron Parish also includes the area along the coastline from Sabine Pass to Big Constance Lake in Rockefeller Wildlife Refuge. This region is composed of open public beaches, marshlands and swamps. It serves as a habitat for numerous birds, finfish and other animals, including several rare, threatened and endangered species.

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 crude oil, an ADIOS weathering model was run on a similar product from the ADIOS oil database. The results indicate 19% or approximately 5,242 barrels of crude oil would be evaporated/dispersed within 24 hours, with approximately 22,349 barrels remaining.

Natural Weathering Data: SS 136	**Barrels of Oil**
WCD Volume	27,591
Less 19% natural evaporation/dispersion	5,242
Remaining volume	22,349

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 attempting to skim utilizing CGA spill response equipment, with a total derated skimming capacity of 122,055 barrels. Temporary storage associated with skimming equipment equals 4,498 barrels. If additional storage is needed, various storage barges with a total capacity 118,000 bbls 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 Cameron Parish, Louisiana 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 56,374 barrels. Temporary storage associated with skimming equipment equals 1,152 barrels. If additional storage is needed, various storage barges with a total capacity 60,000 bbls may be mobilized and centrally located to provide temporary storage and minimize off-loading time. Onshore response may include the deployment of shoreline boom on beach areas, or protection and sorbent boom on vegetated areas. A Master Service Agreement with AMPOL will ensure access to 30,200 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 (UC) will be consulted to ensure that environmental and special economic resources are correctly identified and prioritized to ensure optimal protection. Shoreline protection strategies depict the protection response modes applicable for oil spill clean-up operations. As a secondary resource, the State of Louisiana Initial Oil Spill Response Plan will be consulted as appropriate to provide detailed shoreline protection strategies and describe necessary action to keep the oil spill from entering Louisiana's coastal wetlands. The UC should take into consideration all appropriate items detailed in Tactics discussion of this Appendix. The UC and their personnel have the option to modify the deployment and operation of equipment to allow for 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 48 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:

- Safety
- 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 to complete a common objective, 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 $\geq$ 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 (C^3)

- Publish, implement, and fully test an appropriate communications plan
- Design an operational scheme, maintaining a manageable span of control
- Designate and mark C^3 vessels for easy aerial identification
- Designate and employ C^3 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: • 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 $\leq$ 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 $\leq$ 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

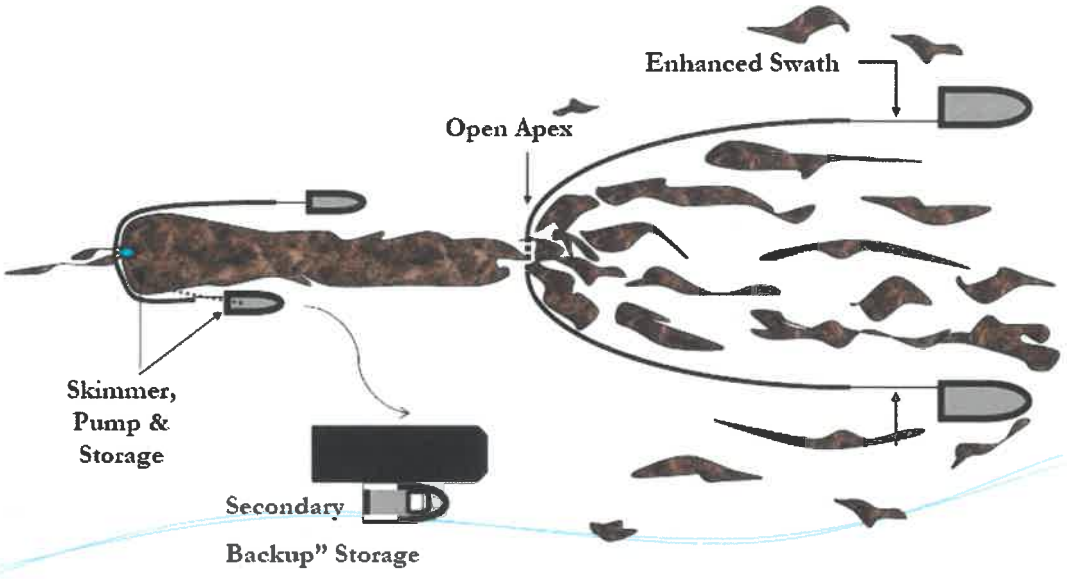
Mechanical Recovery – Deployed on large vessels of opportunity (VOO) the Koseq Rigid Sweeping Arms are high volume surge capacity deployed to increase recovery capacity at the source of a large oil spill in the offshore and outer nearshore environment of the Gulf of Mexico. They are highly mobile and 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 thought 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 $\geq$ 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
- Egmopol 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 the 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 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 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 in 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

Louisiana is situated between the easterly and westerly wind belts, and therefore, experiences westerly winds during the winter and easterly winds in the summer. Average wind speed is generally 14-15 mph along the coast. Wave heights average 4 and 5 feet. However, during hurricane season, Louisiana has recorded wave heights ranging from 40 to 50 feet high and winds reaching speeds of 100 mph. Because much of southern Louisiana lies below sea level, flooding is prominent.

Surface water temperature ranges between 70 and 80 ° F during the summer months. During the winter, the average temperature will range from 50 and 60 ° 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

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 30 day impact. The results are tabulated below.

Area/Block	OCS-G	Launch Area	Land Segment and/or Resource	Conditional Probability (%)
SS 136 *19.7 miles from shore*	G36513	C38	Calhoun, TX Matagorda, TX Brazoria, TX Galveston, TX Jefferson, TX **Cameron, LA** Vermilion, LA Iberia, La St. Mary, LA Terrebonne, LA Lafourche, LA Plaquemines, LA	1 4 2 5 5 **16** 7 3 1 7 1 2

WCD Scenario– <u>BASED ON WELL BLOWOUT DURING DRILLING OPERATIONS</u> (19.7 miles from shore)
22,349 bbls of crude oil (Volume considering natural weathering)
API Gravity 30°

FIGURE 2 – Equipment Response Time to SS 136

Dispersants/Surveillance

Dispersant/Surveillance	Dispersant Capacity (gal)	Persons Req.	From	Hrs to Procure	Hrs to Loadout	Travel to site	Total Hrs
ASI							
Basler 67T	2000	2	Houma	2	2	0.3	4.3
DC 3	1200	2	Houma	2	2	0.4	4.4
DC 3	1200	2	Houma	2	2	0.4	4.4
Aero Commander	NA	2	Houma	2	2	0.3	4.3

Offshore Response

Offshore 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
CGA											
HOSS Barge	76285	4000	3 Tugs	12	Harvey	6	0	12	11	2	31
95' FRV	22885	249	NA	6	Leeville	2	0	2	2.5	1	7.5
95' FRV	22885	249	NA	6	Vermilion	2	0	3	2	1	8
Boom Barge (CGA-300) 42" Auto Boom (25000')	NA	NA	1 Tug 50 Crew	4 (Barge) 2 (Per Crew)	Leeville	8	0	4	7	2	21
Enterprise Marine Services LLC (Available through contract with CGA)											
CTCo 2603	NA	25000	1 Tug	6	Amelia	36	0	6	5	1	48
CTCo 2608	NA	23000	1 Tug	6	Amelia	36	0	6	5	1	48
CTCo 2609	NA	23000	1 Tug	6	Amelia	36	0	6	5	1	48
CTCo 5001	NA	47000	1 Tug	6	Amelia	36	0	6	5	1	48

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
CGA											
Trinity SWS	21500	249	NA	4	Lake Charles	2	0	N/A	48	1	51
46' FRV	15257	65	NA	4	Lake Charles	2	0	2	2.5	1	7.5
Enterprise Marine Services LLC (Available through contract with CGA)											
CTCo 2604	NA	20000	1 Tug	6	Amelia	26	0	6	15	1	48
CTCo 2605	NA	20000	1 Tug	6	Amelia	26	0	6	15	1	48
CTCo 2606	NA	20000	1 Tug	6	Amelia	26	0	6	15	1	48

Staging Area: Cameron

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	5	2	1	12
SWS Egmopol	1810	100	NA	3	Leeville	2	2	7	2	1	14
SWS Marco	3588	20	NA	3	Lake Charles	2	2	2	2	1	9
SWS Marco	3588	34	NA	3	Leeville	2	2	7	2	1	14
SWS Marco	3588	34	NA	3	Venice	2	2	9.5	2	1	16.5
Foilex Skim Package (TDS 150)	1131	50	1 Utility	3	Lake Charles	4	12	2	2	2	22
Foilex Skim Package (TDS 150)	1131	50	1 Utility	3	Galveston	4	12	5	2	2	25
Foilex Skim Package (TDS 150)	1131	50	1 Utility	3	Harvey	4	12	7	2	2	27
4 Drum Skimmer (Magnum 100)	680	100	1 Crew	3	Lake Charles	2	2	2	2	1	9
4 Drum Skimmer (Magnum 100)	680	100	1 Crew	3	Harvey	2	2	7	2	1	14
2 Drum Skimmer (TDS 118)	240	100	1 Crew	3	Lake Charles	2	2	2	2	1	9
2 Drum Skimmer (TDS 118)	240	100	1 Crew	3	Harvey	2	2	7	2	1	14

Staging Area: Cameron

Shoreline Protection Boom	VOO	Persons Req.	Storage/Warehouse Location	Hrs to Procure	Hrs to Loadout	Travel to Staging	Travel to Deployment	Hrs to Deploy	Total Hrs
AMPOL (available through MSA)									
12,850' 18" Boom	7 Crew	14	Chalmette, LA	2	2	7.5	2	6	19.5
900' 18" Boom	1 Crew	2	Morgan City, LA	2	2	5	2	2	13
1,700' 18" Boom	2 Crew	4	Venice, LA	2	2	9	2	2	17
14,750' 18" Boom	7 Crew	14	Port Arthur, TX	2	2	1.5	2	6	13.5

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	7	1	2	14
Bird Scare Guns (24)	NA	NA	NA	2	Harvey	2	2	7	1	2	14
Bird Scare Guns (12)	NA	NA	NA	2	Galveston	2	2	5	1	2	12
Bird Scare Guns (12)	NA	NA	NA	2	Aransas Pass	2	2	9.5	1	2	16.5
Bird Scare Guns (48)	NA	NA	NA	2	Lake Charles	2	2	2	1	2	9
Bird Scare Guns (24)	NA	NA	NA	2	Leeville	2	2	7	1	2	14

Response Asset	Total
Offshore EDRC	122,055
Offshore Recovered Oil Capacity	122,498
Nearshore / Shallow Water EDRC	56,374
Nearshore / Shallow Water Recovered Oil Capacity	61,152

Attachment H-2

SECTION I
ENVIRONMENTAL MONITORING INFORMATION

(a) Monitoring Systems
There are no environmental monitoring systems currently in place or planned for the proposed activities.

(b) Incidental Takes
There is no reason to believe that any of the endangered species or marine mammals as listed in the ESA will be "taken" as a result of the operations proposed under this plan.

To date, 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.

(c) Flower Garden Banks National Marine Sanctuary
Ship Shoal Block 136 is not located in the Flower Garden Banks National Marine Sanctuary; therefore, the requested information is not required in this Plan/EP.

SECTION J
LEASE STIPULATIONS INFORMATION

(a) Lease Stipulations

The proposed activities provided for in this Plan/EP are subject to the following stipulations attached to Lease OCS-G 36513, Ship Shoal Block 136:

Military Warning Area (MWA)

Ship Shoal Block 136 are located within designated MWA-W-59 BC. The Naval Air Station will be contacted to coordinate and control the electromagnetic emissions during the proposed operations.

Marine Protected Species

Lease Stipulation No. 4 is meant to reduce the potential taking of marine protected species. Castex will operate in accordance with JOINT NTL 2012-G01, to minimize the risk of vessel strikes to protected species and report observations of injured or dead protected species, and the prevention of intentional and/or accidental introduction of debris into the marine environment.

(b) Special Conditions

Lease OCS-G 36513, Ship Shoal Block 136 is subject to the following special conditions:

Breton Sound

Ship Shoal Block 136 is located within 200 km zone of the Breton National Wildlife Refuge and will consider the use of the best available control technology as required as Notice to Lessees 98-10 if the projected air emissions are determined to significantly affect the air quality of an onshore area.

SECTION K
ENVIRONMENTAL MITIGATION MEASURES INFORMATION

(a) Measures Taken to Avoid, Minimize, and Mitigate Impacts

The State of Florida is not an affected State for the activities proposed in this plan; therefore, pursuant to NTL 2008-G04, this information is not required.

(b) Incidental Takes

There are no operations proposed in this plan that will be using explosives or seismic instruments, therefore there is no reason to believe that a protected species may be incidentally taken by the proposed activities, however, 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:

- BSEE NTL 2015-G03, "Marine Trash and Debris Awareness and Elimination"
- BSEE NTL 2016-G01, "Vessel Strike Avoidance and Injured/Dead Protected Species Reporting
- BOEM NTL 2016-G02, "Implementation of Seismic Survey Mitigation Measures and Protected Species Observer Program"

APPENDIX L
SUPPORT VESSELS AND AIRCRAFT INFORMATION

(a) General
The following list provides information regarding the vessels and aircraft Castex will use to support our proposed drilling/completion activities:

Type	Maximum Fuel Tank Capacity	Maximum Number in Area at Any Time	Trip Frequency or Duration
Tug Boats	2400 bbls (each)	2	2 days
Supply Boats	1635 bbls	1	3 per week
Crew Boats	920 bbls	1	3 per week
Aircraft	110 gal	1	As needed

(b) Diesel Oil Supply Vessels

Size of Fuel Supply Vessel	*Capacity of Fuel Supply Vessel*	*Frequency of Fuel Transfers*	*Route Fuel Supply Vessel Will Take*
180 feet	1500 bbls	Weekly	From shorebase to EI 224 then back to shorebase.

(c) Drilling Fluid Transportation
The State of Florida is not an affected State for the activities proposed for in this plan; therefore, pursuant to NTL No. 2008-G04, this information is not required.

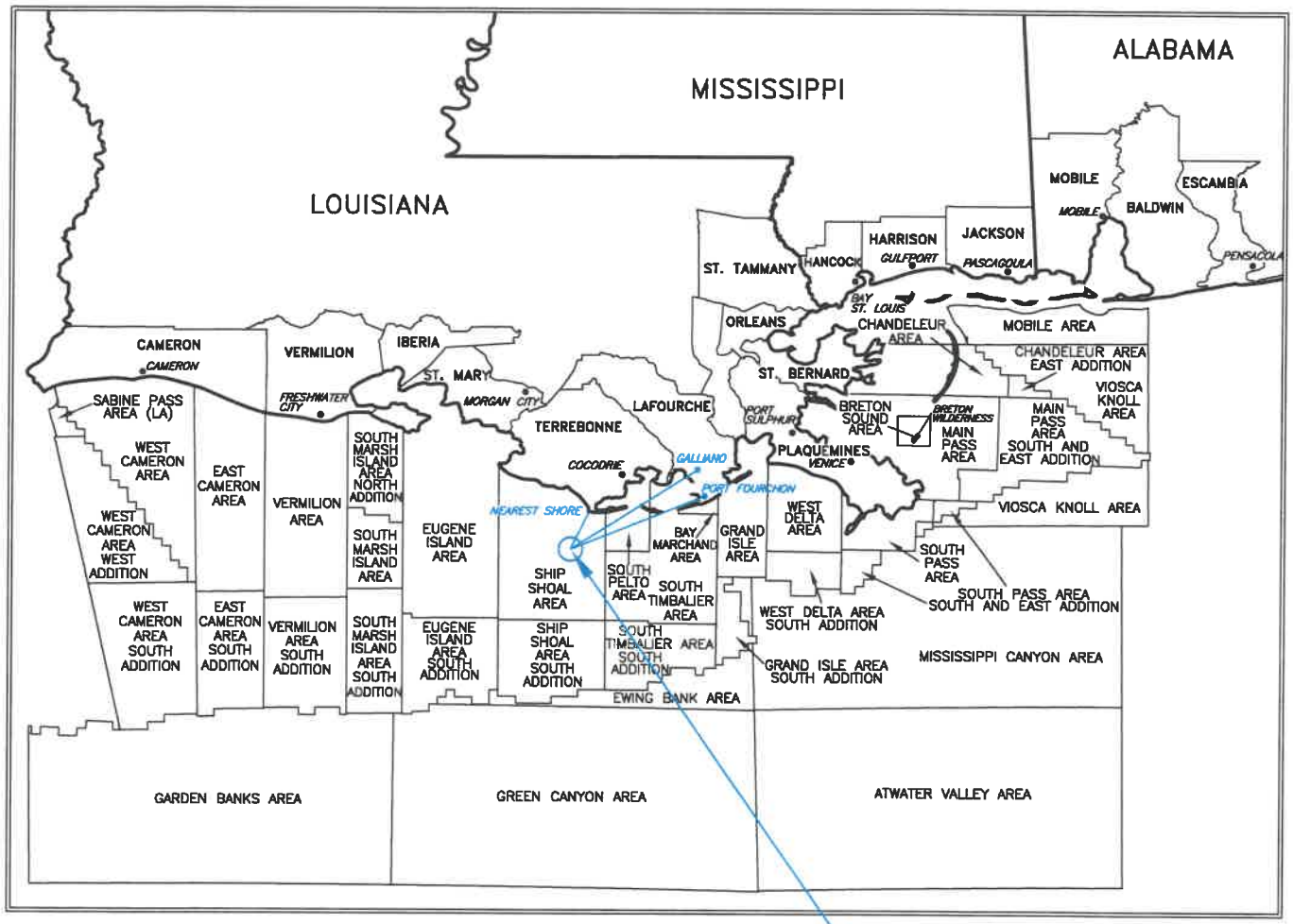
(d) Solid and Liquid Waste Transportation
The following table lists types of wastes and the amounts that will be generated by the activities proposed in this plan and provides information on transportation methods used to transport the wastes to storage or disposal facilities:

Type of Waste Approx. Composition	*Total Amount*	*Name/Location*	*Rate*	*Transportation Method*
Trash & Debris	500 cu/ft.	EPS /Fourchon, LA	Weekly	Trash from well site is stored in bins at dock then barged to disposal facility

(e) 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 route of the support vessels and aircraft that will be used when traveling between the onshore support facilities and the drilling unit is included as ***Attachment L-1***.

Attachment L-1

LOUISIANA GULF COAST INDEX
BOEM O.C.S. LEASING AREAS



VICINITY MAP

WELLS 'A' & 'B'
~19.7 STATUTE (17.1 NAUTICAL) MILES TO TERREBONNE PARISH (NEAREST SHORE)
~50 STATUTE (44 NAUTICAL) MILES TO PORT FOURCHON, LA
~59 STATUTE (51 NAUTICAL) MILES TO BRISTOW HELIPORT, GALLIANO, LA

COORDINATE TO NEAREST POINT ON SHORELINE X = 2,132,845 Y = 137,994

THE DISTANCES SHOWN HEREON ARE FROM THE PROPOSED WELL TO THE NEAREST COASTLINE POINT AS OBTAINED FROM NOAA, ENTITLED NOAA MEDIUM RESOLUTION SHORELINE. <HTTP://SHORELINE.NOAA.GOV/DATA/DATASHEETS/MEDRES.HTML>.

SHEET 1 OF 1

DATUM: NAD 27	CASTEX OFFSHORE, INC.
SPHEROID: CLARKE 1866	EXPLORATION PLAT
PROJECTION: LAMBERT	PROPOSED WELLS 'A' & 'B'
ZONE: LOUISIANA SOUTH	OCS-G 36513 BLOCK 136
	SHIP SHOAL AREA
	GULF OF MEXICO

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

DRAWN BY:	DATE:	CHECKED BY:	DRAWING No.:
RJN	08/12/2019	MEK	19-036-EXP
REV. DATE:	REV. No.:	SCALE:	JOB No.:
		N.T.S.	19-036-12

SECTION M
ONSHORE SUPPORT FACILITIES INFORMATION

(a) General
Castex proposes to utilize the following existing onshore base for support:

Name	*Location*	*Existing/New/Modified*
Fourchon Service Base	Port Fourchon, Louisiana	Existing

(b) Support Base Construction or Expansion
There will be no new construction of an onshore support base, nor will we expand the existing shorebase because of the operations proposed in this Plan/EP.

(c) Support Base Construction or Expansion Timetable
According to NTL No. 2008-G04, this section of the Plan is not applicable to the proposed operations.

(d) Waste Disposal
The table below provides information on the shorebase facilities that will be used to store and dispose of any solid and liquid wastes generated by the proposed activities:

Name/Location of Facility	*Type of waste*	*Amount*	*Rate*	*Disposal Method*
EPS, Fourchon, LA	Non-hazardous Liquid: Workover fluid	100 lbs	2 lbs/day	Transport by boat in cutting bins to shorebase; then barge to disposal facility to be injected

All waste shipments received by EPS from Castex are placed into barges and shipped to one of EPS's facilities. None of the waste is shipped to brokers, third party companies, recycled or disposed at landfills. Newpark retains waste manifest records documenting all the above.

SECTION N
COASTAL ZONE MANAGEMENT (CZMA) INFORMATION

The States of Texas, Louisiana, Mississippi, Alabama and Florida have federally approved coastal zone management programs (CZMP). Applications for an OCS plan submitted to the BOEM must provide a certification with necessary data and information for the affected State to determine that the proposed activity(s) complies with the enforceable policies for each States' approved program, and that such activity will be conducted in a manner consistent with the program.

(a) Consistency Certification

A certificate of Coastal Zone Management for the States of Louisiana and Mississippi are enclosed as ***Attachment N-1***.

(b) Other Information

Castex has considered all of Louisiana's enforceable policies and certifies the consistency for the proposed operations.

Relevant enforceable policies were considered in certifying consistency for Louisiana. A certificate of Coastal Zone Management Consistency for the state of Louisiana is enclosed.

Attachment N-1

COASTAL ZONE MANAGEMENT
CONSISTENCY CERTIFICATION

STATE OF LOUISIANA

INITIAL EXPLORATION PLAN

SHIP SHOAL BLOCK 136

OCS-G 36513

The proposed activities described in detail in this OCS Plan will comply with all enforceable policies as Louisiana's approved Coastal Management Program and will be conducted in a manner consistent with such program

Castex Offshore, Inc.
Lessee or Operator

Natalie Shumaker
Certifying Official

8/20/2019

SECTION O
ENVIRONMENTAL IMPACT ANALYSIS (EIA)

In accordance with the requirements of 30 CFR 250.227 and 250.261 an Environmental Impact Analysis (EIA) is included as ***Attachment O-1***.

Attachment O-1

Castex Offshore, Inc. (Castex)

Initial Exploration Plan
Ship Shoal Block 136
OCS-G 36513

(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_2S 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		X	
Fisheries		X	X		X	
Marine Mammals	X(8)	X			X(8)	X
Sea Turtles	X(8)	X			X(8)	X
Air quality	X(9)					
Shipwreck sites (known or potential)			(7)			
Prehistoric archaeological sites			(7)			
Vicinity of Offshore Location						
Essential fish habitat		X	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	

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 Ship Shoal Block 136

Proposed operations consist of the drilling, completion and testing of two locations (Well Locations A and B) from a common surface location and the installation of temporary well protector structure.

Operations will be conducted with a Non-Gorilla Jack-up Rig.

1. Designated Topographic Features

Potential IPFs on topographic features include physical disturbances to the seafloor, effluents, and accidents.

Physical disturbances to the seafloor: Ship Shoal Block 136 is 42 miles from the closest designated Topographic Features Stipulation Block (Ewing Bank); therefore, no adverse impacts are expected.

Effluents: Ship Shoal Block 136 is 42 miles from the closest designated Topographic Features Stipulation Block (Ewing Bank); 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 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 not applicable due to the distance of these blocks from a topographic area. The activities proposed in this plan will be covered by Castex's Regional OSRP (refer to information submitted in **Appendix H**).

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

2. Pinnacle Trend Area Live Bottoms

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

Physical disturbances to the seafloor: Ship Shoal Block 136 is 146 miles from the closest live bottom (pinnacle trend) area; therefore, no adverse impacts are expected.

Effluents: Ship Shoal Block 136 is 146 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 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 **Appendix H**).

There are no other IPFs (including emissions 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, effluents, and accidents.

Physical disturbances to the seafloor: Ship Shoal Block 136 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.

Effluents: Ship Shoal Block 136 is not located in an area characterized by the existence of live bottoms; 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 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 **Appendix H**).

There are no other IPFs (including emissions 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 55 feet. High-density benthic communities are found only in water depths greater than 984 feet (300 meters); therefore, Castex's proposed operations in Ship Shoal Block 136 would not cause impacts to benthic communities.

5. Water Quality

IPFs that could result in water quality degradation from the proposed operations in Ship Shoal Block 136 include disturbances to the seafloor, effluents 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.

Effluents: Levels of contaminants in drilling muds and cuttings and produced water discharges, discharge-rate restrictions and monitoring and toxicity testing are regulated by the EPA NPDES permit, thereby eliminating many significant biological or ecological effects. Operational discharges are not expected to cause significant adverse impacts to water quality.

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 **Appendix H**).

There are no other IPFs (including emissions, physical disturbances to the seafloor, 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 Ship Shoal Block 136 include physical disturbances to the seafloor, effluents 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.

Effluents: Effluents such as drilling fluids and cuttings discharges contain components and properties which are detrimental to fishery resources. Moderate petroleum and metal contamination of sediments and the water column can occur out to several hundred meters down-current from the discharge point. Offshore discharges are expected to disperse and dilute to very near background levels in the water column or on the seafloor within 3,000 m of the discharge point, and are expected to have negligible effect on fisheries.

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 **Appendix H**).

There are no IPFs from emissions, 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 Ship Shoal Block 136 include emissions, effluents, 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.

Effluents: Drilling fluids and cuttings discharges contain components which may be detrimental to marine mammals. Most operational discharges are diluted and dispersed upon release. Any potential impact from drilling fluids would be indirect, either as a result of impacts on prey items or possibly through ingestion in the food chain (API, 1989).

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 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.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.

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 **Appendix H**).

There are no other IPFs (including physical disturbances to the seafloor) 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, effluents, 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; Lohoefener et al., 1990). Deep waters may be used by all species as a transitory habitat.

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

Effluents: Drilling fluids and cuttings discharges are not known to be lethal to sea turtles. Most operational discharges are diluted and dispersed upon release. Any potential impact from drilling fluids would be indirect, either as a result of impacts on prey items or possibly through ingestion in the food chain (API, 1989).

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 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 **Appendix H**).

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

9. Air Quality

Ship Shoal Block 136 is located 108 miles from the Breton Wilderness Area and 19.7 miles from shore. Applicable emissions data is included in **Appendix G** of the Plan.

There would be a limited degree of air quality degradation in the immediate vicinity of the proposed activities. Plan Emissions for the proposed activities do not exceed the annual exemption levels as set forth by BOEM. 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 Ship Shoal Block 136 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 would 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 Ship Shoal Block 136 include disturbances to the seafloor and accidents (oil spill). Ship Shoal Block 136 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 **Appendix H**).

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 Ship Shoal Block 136 are physical disturbances to the seafloor and accidents (oil spills).

Physical Disturbances to the seafloor: Ship Shoal Block 136 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 **Appendix H**).

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

1. Essential Fish Habitat (EFH)

IPFs that could cause impacts to EFH as a result of the proposed operations in Ship Shoal Block 136 include physical disturbances to the seafloor, effluents 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).

Effluents: 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 operational waste discharges. Levels of contaminants in drilling muds and cuttings and produced-water discharges, discharge-rate restrictions, and monitoring and toxicity testing are regulated by the EPA NPDES permit, thereby eliminating many significant biological or ecological effects. Operational discharges are not expected to cause significant adverse impacts to EFH.

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 **Appendix H**).

There are no other IPFs (including emissions, 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 these 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 **Appendix H**).

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 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 releases) 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 **Appendix D** to justify our request that our proposed activities be classified by BSEE as H_2S 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 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 **Appendix H**).

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 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

Salt marshes and seagrass beds fringe the coastal areas of the Gulf of Mexico. Due to the distance from shore (19.7 miles), accidents (oil spills) and discarded trash and debris represent IPFs which could impact these resources.

Accidents: Level of impact from an oil spill will depend on oil concentrations contacting vegetation, kind of oil spilled, types of vegetation affected, season of the year, pre-existing stress level of the vegetation, soil types, and numerous other factors. Light-oiling impacts will cause plant die-back with recovery within two growing seasons without artificial replanting. However, it is unlikely that an oil spill would occur from the proposed activities (refer to **Item 5**, Water quality). If a spill were to occur, response capabilities as outlined in Castex's Regional OSRP (refer to information submitted in **Appendix H**) would be implemented.

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.

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 that could cause impacts to wetlands.

3. Shore Birds and Coastal Nesting Birds

Isles Dernieres WMA (16 miles from Ship Shoal Block 136) is a highly productive habitat for wildlife. Thousands of shore birds use the refuge as a wintering area. Also, wading birds nest on the refuge. The WMA provides habitat for colonies of nesting wading birds and seabirds as well as wintering shorebirds and waterfowl. The most abundant nesters are brown pelicans, laughing gulls, and royal, Caspian, and sandwich terns. IPFs from the proposed activities that could cause impacts to shore birds and coastal nesting birds are accidents (oil spills) and discarded trash and debris.

Accidents: Oil spills could cause impacts to shore birds and coastal nesting birds. The birds most vulnerable to direct effects of oiling include those species that spend most of their time swimming on and under the sea surface, and often aggregate in dense flocks (Piatt et al., 1990; Vauk et al., 1989). Coastal birds, including shorebirds, waders, marsh birds, and certain water fowl, may be the hardest hit indirectly through destruction of their feeding habitat and/or food source (Hansen, 198l; Vermeer and Vermeer, 1975). Direct oiling of coastal birds and certain seabirds is usually minor; many of these birds are merely stained as a result of their foraging behaviors. Birds can ingest oil when feeding on contaminated food items or drinking contaminated water.

Oil-spill cleanup operations will result in additional disturbance of coastal birds after a spill. 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 (19.7 miles), Castex would immediately implement the response capabilities outlined in their Regional OSRP (refer to information submitted in **Appendix H**).

Discarded trash and debris: Shore birds and coastal nesting 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.

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

Ship Shoal Block 136 is approximately 16 miles from the Isles Dernieres WMA. Management goals of the WMA are waterfowl habitat management, marsh restoration, providing sanctuary for nesting and wintering seabirds, and providing sandy beach habitat for a variety of wildlife species. IPFs from the proposed activities that could cause impacts to this coastal wildlife refuge are accidents (oil spills) and discarded trash and debris.

Impacts to shore birds and coastal nesting birds and to the beach, was covered in previous sections. Other wildlife species found on the refuges include nutria, rabbits, raccoons, alligators, and loggerhead turtles. Impacts to loggerhead turtles were also covered under a previous section.

Accidents: It is unlikely that an oil spill would occur from the proposed activities (refer to **Item 5**, Water quality). Response capabilities 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 **Appendix H**).

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.

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 (108 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 **Appendix H).**

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, Ship Shoal Block 136 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.

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

1. Drilling & completion
    a. Secure well
    b. Secure rig / platform
    c. Evacuate personnel

Drilling activities will be conducted in accordance with NTL No.'s 2008-G09, 2009-G10, and 2010-N10 .

2. Structure Installation
   Operator will not conduct structure 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.

(H) PREPARER(S)

Stephen Depew
J. Connor Consulting, Inc.
19219 Katy Freeway, Suite 200

Houston, Texas 77094
(281) 578-3388
stephen.depew@jccteam.com

(I) REFERENCES

Authors:

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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. MMS 2000-001
  - GOM Central and Western Planning Areas Sales 166 and 168 Final Environmental Impact Statement. MMS 96-0058.

SECTION P
ADMINISTRATIVE INFORMATION

(a) Exempted Information Description

The proposed bottom-hole locations of the planned well has been removed from the public information copy of the Plan/EP as well as any discussions of the target objectives, geologic or geophysical data, and any interpreted geology.

(b) Bibliography

- Archaeological and Shallow Hazards Report covering the southwest quarter of Ship Shoal Block 136, Lease OCS-G 36513, prepared by Echo Offshore, LLC during June 2019
- Castex Offshore, Inc.'s Regional Oil Spill Response Plan