UNITED STATES GOVERNMENT
MEMORANDUM

June 22, 2016

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

Subject: Public Information copy of plan

Control #	-	N-09949
Type	-	Initial Exploration Plan
Lease(s)	-	OCS-G34390 Block - 286 Main Pass Area
Operator	-	W & T Offshore, Inc.
Description	-	Well A
Rig Type	-	Jackup

Attached is a copy of the subject plan.

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

Ronald O'Connor
Plan Coordinator

Site Type/Name	Botm Lse/Area/Blk	Surface Location	Surf Lse/Area/Blk
WELL/A	G34390/MP/286	7266 FNL, 2629 FEL	G34390/MP/286

W&T OFFSHORE

INITIAL EXPLORATION PLAN

LEASE OCS-G 34390
MAIN PASS BLOCK 286
OFFSHORE ALABAMA

Contact Information:
Valerie Land
Regulatory Manager
Nine E. Greenway Plaza; Suite 300
Houston, Texas 77046
713-624-7272 (Direct)
713-626-8527 (Fax)
vland@wtoffshore.com

Date Submitted: 05/20/2016	No. of Copies Submitted:	
Plan Control No.:	Proprietary:	1 & CD
Plans Coordinator:	Public:	1 & CD
PUBLIC COPY		

W&T OFFSHORE

INITIAL EXPLORATION PLAN
LEASE OCS-G 34390
MAIN PASS BLOCK 286

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APPENDIX A: PLAN CONTENTS

A.1 Plan Information Form

Lease OCS-G 34390 was acquired through Lease Sale 222 in the Central Gulf of Mexico held June 20, 2012. W&T Offshore, Inc. was designated operator of Lease OCS-G 34390 on November 1, 2012.

This Initial Exploration Plan (EP) provides for the drilling and completion of one well site to be designated as Well Location A. This well is planned as a future subsea tie-back to the existing Platform A in Main Pass Block 283.

See attached OCS Plan Information Form – Form MMS-137, included as ***Attachment A-1,*** for further well information.

A.2 Location

Included as ***Attachments A-2*** is a Well Location Plat depicting the proposed surface location of the subject well.

Also enclosed is a Bathymetry Map labeled ***Attachment A-3*** that shows the waters depths across Main Pass Block 286.

A.3 Safety and Pollution Prevention Features

A typical Jack-up drilling unit will be utilized to drill and complete Well Location A. 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 be maintained on the facility at all times.

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

A.4 Storage Tanks and Production Vessels

All facility tanks with an oil storage capacity of 25 bbls or more as defined in Title 30 CFR 254.6, and are associated with these operations, are detailed in the table below.

Type of Storage Tank	*Type of Facility*	*Tank Capacity (bbls)*	*Number of Tanks*	*Total Capacity (bbls)*	*Fluid Gravity (API)*
Fuel Oil (Marine Diesel)	JU Rig – below deck	500	4	2000	Diesel Fuel

A.5 Pollution Prevention Measures

Activities conducted under this EP will not affect the State of Florida; therefore, this information is not being provided.

A.6 Additional Measures

W&T does not propose additional safety, pollution prevention, or early spill detection measures beyond those required by 30 CFR 250.

A.7 Payment Receipt

Included as ***Attachment A-4*** is a Pay.Gov receipt showing the processing fee amount of $3,673.00 paid for this Initial Exploration Plan.

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

OMB Control Number: 1010-0151
OMB Approval Expires: 12/31/14

OCS PLAN INFORMATION FORM

General Information			
Type of Plan:	Exploration Plan: ☑	Development Operations Coordination Document: ☐	
Company Name: W&T Offshore, Inc.		BOEM Operator Number: 01284	
Address:9 E. Greenway Plaza; Suite 300		Contact Person: Valerie Land	
Houston, Texas		Phone Number: 713.624.7272	
		Email Address: vland@wtoffshore.com	
If a service fee is required under 30 CFR 550.125(a), provide the		Amount Paid: $3,673.00	Receipt No. 75009140290

Project and Worst Case Discharge (WCD) Information						
Lease: G34390		Area: MP		Block: 286	Project Name (If applicable): NA	
Objective;	Oil: ☑	Gas: ☐	Sulphur: ☐	Salt: ☐	Onshore Support Base: Venice, La	
Well Name: A		Total Volume of WCD: 7,661,475			API Gravity: 41°	
Distance to closest land (Miles): 41.3		Volume from uncontrolled blowout:				
Have you previously provided information to verify the calculations and assumptions for your WCD?					☐ Yes ☑ No	
If so, please provide the Plan Control No. 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 ☑ No	
Do you propose to use a vessel with anchors to install or modify a structure?					☐ Yes ☑ No	
Do you propose any facility that will serve as a host facility for deepwater subsea development?					☐ Yes ☑ No	

Description of Proposed Activities and Tentative Schedule (Mark all that apply)

Proposed Activity	Start Date	End Date	No. of Days
Exploration drilling	11/01/2016	12/30/2016	60
Well completion	12/30/2016	01/14/2017	15

Description of Drilling Rig				Description of Structure			
XX	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 Location A		Previously reviewed under an approved EP or DOCD? ☐ Yes ☑ No
Is this an existing well or structure? ☐ Yes ☑ No	If this is an existing well/structure, then list the API No. or Complex ID No.:	Complex ID No.
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities? ☐ Yes ☑ No		
WCD Info: For wells, volume of uncontrolled blowout (bbls/day): 90,135	For structures, volume of all storage and pipelines (bbls): N/A	API Gravity of Fluid: 41°

	Surface Location	Bottom-Hole Location	Completions (for multiple completions, enter separate lines)
Lease No.	OCS-G 34390		
Area Name	MP		
Block No.	286		
Blockline Call	N/S Departure: 7266' FNL E/W Departure: 2629' FEL		
Lambert X	2,959,316		
Lambert Y	226,564		
Latitude	29° 15' 18.2115" N		
Longitude	88° 19' 29.3022" W		

Water Depth: 300'

Anchor Radius (if applicable) in feet: NA

Anchor Locations for Drilling Rig or Construction Barge (If anchor radius supplied above, not necessary)

Anchor Name/No.	Area	Block	X Coordinate	Y Coordinate	Length of Anchor Chain on Seafloor

Attachment A-1 (cont'd)

#1
Surface Location
X = 2,959,316
Y = 226,564
Lat = 29° 15' 18.2115" N
Long = 88° 19' 29.3022" W
Block Calls: 7,266' FNL, 2,629' FELP

Energy Dev.
1
4,500'

Walter
SS2
3,900'

W&T
PROP. #1
SHL

Shell
1
7,773'

MP 286
OCS-G-34390

N

Attachment A-2

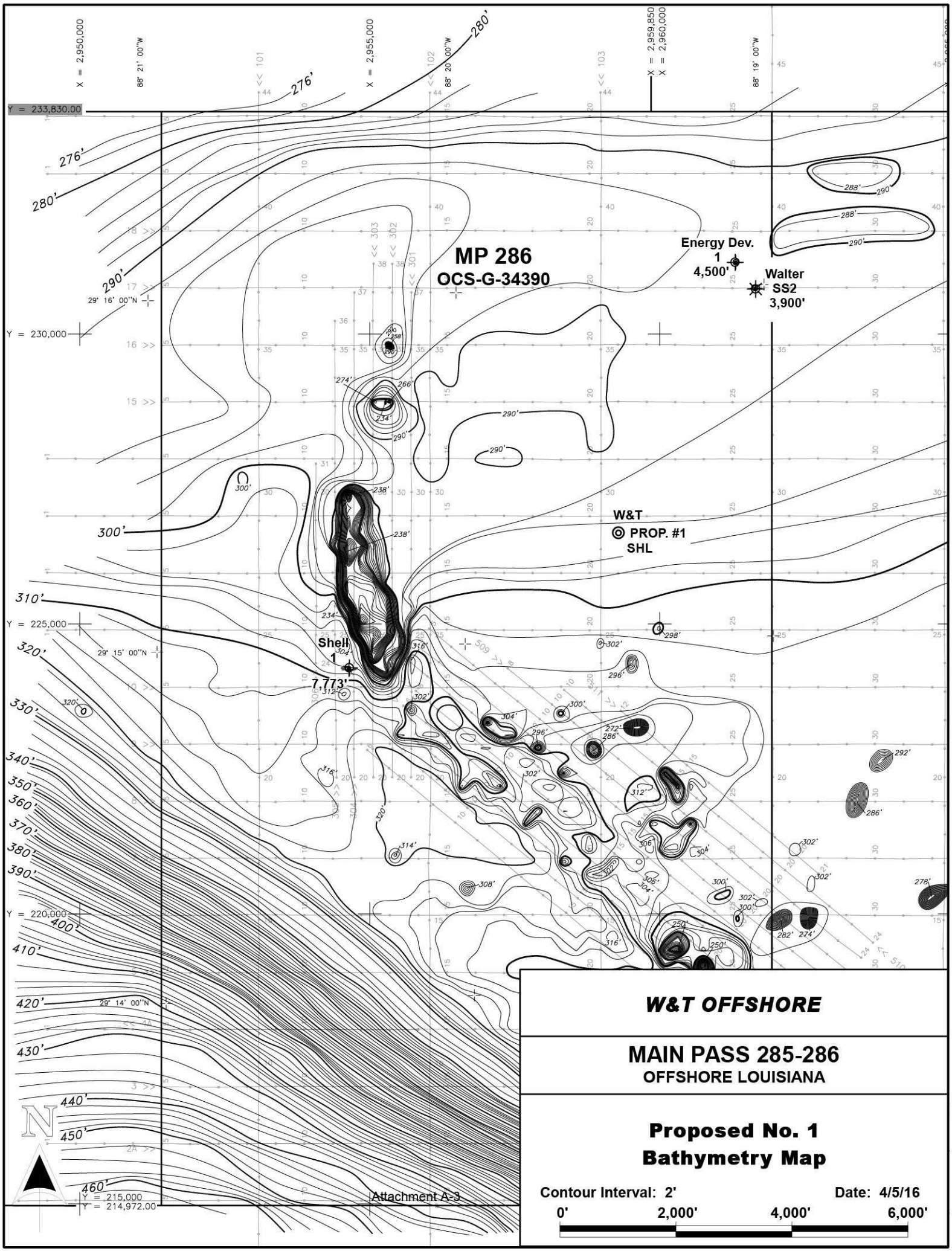
W&T OFFSHORE

MAIN PASS 285-286
OFFSHORE LOUISIANA

Proposed No. 1 Location Map

Date: 4/5/16

0' 2,000' 4,000' 6,000'



Attachment A-3

W&T OFFSHORE

MAIN PASS 285-286

OFFSHORE LOUISIANA

Proposed No. 1
Bathymetry Map

Contour Interval: 2'

Date: 4/5/16

0' 2,000' 4,000' 6,000'

Valerie Land

From: notification@pay.gov
Sent: Wednesday, May 04, 2016 8:50 AM
To: Valerie Land
Subject: Pay.gov Payment Confirmation: BOEM Exploration Plan - BF

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

Application Name: BOEM Exploration Plan - BF
Pay.gov Tracking ID: 25RE3TTL
Agency Tracking ID: 75009140290
Transaction Type: Sale
Transaction Date: 05/04/2016 09:49:38 AM EDT

Account Holder Name: Valerie Land

Transaction Amount: $3,673.00
Card Type: AmericanExpress
Card Number: **********1159

Region: Gulf of Mexico
Contact: Valerie Land 7136247272
Company Name/No: WT Offshore, Inc., 01284
Lease Number(s): 34390, , , ,
Area-Block: Main Pass MP, 286: , : , : , : ,
Surface Locations: 1

THIS IS AN AUTOMATED MESSAGE. PLEASE DO NOT REPLY.

APPENDIX B: GENERAL INFORMATION

B.1 Applications and Permits
No special applications or permits are required to conduct the activities proposed herein.

B.2 Drilling Fluids (Amended 05/27/2016)
Please reference Appendix F, Attachments F-1 and F-2, for the drilling fluids being used for the activities proposed under this Initial EP.

Since we are proposing the use of oil-based drilling mud, the major components of this drilling mud is detailed in the table below:

Product Name	*Amount to be Used*	*Reference Number*
Barite	7200 sacks (110 lbs/sk)	(See attached MSDS Sheet)
Primary Emulsifier	48 drums (450 lbs/drum)	(See attached MSDS Sheet)
Organophilic Clay	150 sacks (50 lbs/sk)	(See attached MSDS Sheet)

B.3 New or Unusual Technology
W&T does not propose to use any new or unusual technology to carry out the proposed exploration activities.

B.4 Bonding Statement
W&T Offshore, Inc. (GOM Company No. 01284) has in place a $3,000,000.00 area-wide general lease surety bond, furnished and maintained according to 30 CFR 256, subpart I; NTL No. 2000-G16, "Guidelines for General Lease Surety Bonds.

B.5 Oil Spill Financial Responsibility (OSFR)
W&T Offshore, Inc. (GOM Company No. 01284) will demonstrate oil spill financial responsibility for the facilities proposed in this EP according to 30 CFR Part 253; and NTL No. 2008-N05, "Guidelines for Oil Spill Financial Responsibility for Covered Facilities".

B.6 Deepwater Well Control Statement
Activities under this EP are being conducted in a water depth of approximately 294 feet; which is not considered deep water. However, W&T Offshore, Inc. (GOM Company No. 01284) has the financial capability to drill a relief well and conduct other emergency well control operations.

B.7 Suspension of Production
This oil and gas lease is being held by its primary term.

B.8 Blowout Scenario
The worst case blowout scenario would be when the primary and secondary well control fail. This would result in the well flowing uncontrolled from all permeable sands in the open-hole interval. If BOP failure occurs, hydrocarbons could potentially be flowing into the atmosphere at rates estimated to be 90,135 bbls per day Oil and 249 MMscf per day Gas. If this flow rate is sustained for the required time to drill a relief well (85 days), the total volume would be 7.66 MBO and 21.2 BCF gas.

Action Item	*No. of Days*
1. Acquire Rig	5 days
2. Time to move rig onsite	10 days
3. Drill relief well	70 days
TOTAL TIME TO DRILL RELIEF WELL	85 days

The most likely blowout scenario would probably occur while tripping the drill string and either no drill pipe is in the hole or only a small portion. Assuming drill pipe is in the hole, then both sets of pipe rams and blind shear rams would have to fail in order to have uncontrolled flow. In the worst case scenario, there would be no drill pipe in the hole and the blind shear rams would have to fail. This scenario is used in the worst case discharge calculations.

If a blowout scenario occurred, all workers on the drilling rig would follow abandonment procedures and hopefully be deployed in their respective lifeboats. The emergency shut down devices would shut down all engines as well as all sources of ignition. If uncontrolled flow occurred and did not ignite, then it is possible that hydrocarbons could enter the water at the above listed rate. If the hydrocarbons ignite, then most of the hydrocarbons would burn off and the actual hydrocarbons entering the water would be significantly less. The history of blowouts indicates that the probability of the hydrocarbons igniting is very high.

Potential for well to bridge over: If a blow-out scenario occurred, this well would have a high probability of bridging off. Typically, formations in the Gulf of Mexico at this depth and pressure will produce sand if the differential pressure across the sand face is high. In a blow-out scenario with uncontrolled flow, the differential pressure at the sand face would likely be reduced to an estimated 6.0 – 8.6 ppg gradient. Oil, gas, and water from all permeable sands in the open-hole interval would enter the well bore. The actual differential pressure across the entire open-hole interval would be affected by the gas, oil, and water percentages. Assuming a worst case scenario with no water influx, the hydrostatic gradient and the reservoir pressure, the differential pressure at the target sand would be very high. This very high differential pressure would most likely cause the sand to fail, resulting in sand/formation flowing up the wellbore. Bridging off of the well bore and/or collapse of the sand near the well bore would probably occur within a few minutes in an uncontrolled blow-out.

Likelihood for surface intervention to stop blowout: In the event of a blowout with hydrocarbons to surface, there is a high probability that the Rig would catch fire and be seriously damaged or destroyed. The likelihood of any surface intervention to stop the blowout is very low.

Availability of Rig to drill relief well: As of this date, there are 3 Jack-Up rigs in the GOM capable of drilling this well; Ensco 75, Hercules H-350, and the Rowan Gorilla IV. One Rig will be chosen to drill this well and the other two would be available to drill the Relief well if needed. Additionally, there are no constraints or issues on the Relief well surface location.

Feasibility of drilling relief well from area platform: There is no platform close enough to drill this relief well. It would have to be an open water location.

Methods of Minimizing Blowout Occurrence:

By maintaining primary well control the probability of having a blowout is very low. Primary well control is maintaining sufficient hydrostatic pressure to prevent unwanted flows into the well bore.

The keys to maintaining primary control are:

- Pre-planning, pore pressure analysis, and casing point selection.
    1. Analysis of offset wire line logs, evaluation of seismic, geologic interpretation, offset mud weights, offset kick information, BHP information, and offset drilling problems.
    2. Under pressured or depleted formations should be identified.
    3. Analysis of the offset fracture gradient (FG) data from offset shoe tests.
    4. Optimize casing program for anticipated mud weights and required kick tolerance.
- Preparation of a detailed drilling program. The drilling program will include the following:
    1. Casing Design (using industry standard safety factors)
    2. BOP program
    3. Mud Program (Mud Weight vs Depth Plot)
    4. Cement Program
    5. Hydraulics Program
    6. Directional Program
    7. Formation Evaluation Program (Mud Logging, LWD logs, Wireline Logs)
    8. Detail drilling procedure for each hole section.
    9. Drilling Hazard Analysis (Potential loss zones, faults, pressure transition intervals, wellbore stability issues).
- Onsite surveillance consisting of the following:
    1. Gas detectors at the shakers for the monitoring of background, connection, and trip gas trends.
    2. Mud logging for lithology evaluation, pressure analysis, and correlation.
    3. Installation and monitoring of pit and flowline devices for real time monitoring of pit volumes and changes in flow rates.
    4. Real time LWD GR-Resistivity log data to identify hydrocarbon bearing sands, pressure transition intervals, and correlation with offset wells.
    .
- Onsite application of good drilling practices.
    1. Keep hole full on trips.
    2. Monitoring hole fill-ups via a trip tank.
    3. Control drill when applicable to prevent overloading the hole with cuttings or formation gas.
    4. Check for flow after a drilling break.
    5. Minimize surge and swab pressures while tripping.
    6. Minimize surge pressures while running casing.
    7. Maintaining proper mud rheology's to help minimize estimated circulating density (ECD) and enhance hole cleaning.
    8. Monitor all drilling parameter trends (pump rate/pressure, torque/drag, ROP, ECD, background/conn/trip gas, hole ballooning, cuttings load over shakers, change of cuttings size/shape, mud losses to hole, casing wear)

In the case where the primary well control is lost, proper use of secondary control methods will return the well to primary control. Secondary control is the proper use of well control equipment and techniques to circulate out unwanted inflows. The keys to secondary control are as follows:

- Drilling and pressure control equipment that is properly sized and capable of performing under emergency circumstances.
    1. The equipment will be well maintained.
    2. The equipment will be tested to BOEM and Industry specifications.
    3. The equipment will be sized for anticipated pressures.
- Casing designs will be designed to handle the estimated pressures plus a safety factor. Well control pressures will be considered in the casing design.
- Proper training of crews and rig personnel in well control.
- Experienced company supervision.

Safety Data Sheet – Barite

Section 1: Product and Company Identification

Product Identifier: Barite
Product Names: Barite, Baryte, Bar

Product uses: various industrial uses

Manufacturer:
Industrial Mineral Company
7268 Frasinetti Road
Sacramento, California 95828

Emergency Telephone Number: 916-383-2811
Telephone Number for Information: 916-383-2811

Section 2: Hazards Identification

Carcinogen

Irritant (skin and eye)
Skin Sensitizer
Reparatory Track Irritant

OSHA/HCS status: This naturally occurring clay is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)
Classification of the substance of mixture: OSHA –Carcinogenicity (inhalation) - Category 1A and Specific organ toxicity (Repeated Exposure) (Respiratory tract through inhalation) – Category 1
Exposure limits for Crystalline Silica: The current American Conference of Government Industrial Hygienist Threshold limit value for crystalline silica is: 0.1 mg/m^3
Signal Word: Danger
Hazard Statement Cancer Hazard. Contains quartz (crystalline silica) which may cause cancer. Risk of cancer depends upon duration and level of exposure to the dust. Not an acute hazard. Prolonged inhalation of dust may cause lung injury. Inhalation of high concentrations of dust may cause mechanical irritation and discomfort of the respiratory tract. Repeated exposure may have chronic effects. Can cause skin, respiratory, and eye irritation.
Precautionary Statement: Wear protective gloves, eye, and respiratory protection. Avoid breathing dust.

Section 3: Composition Information

Natural Occurring mineral, exact chemical composition varies.

Chemical Name	Common Name	CAS Number	%
Quartz (Silica)	SiO_2	14808-60-7	10-12
Barite	$BaSO_4$	13462-86-7	80-84
Mica/Illite	$(K,Na,Ca)(Al,Mg,Fe)_2(Si,Al)_4O_{10}(OH,F)_2$	12001-26-2	<6
Calcite	$CaCO_3$	13397-26-7	<2

Section 4: First-Aid Measures

Eye Contact: If eye contact occurs, rinse immediately with plenty of water. If irritation persists, seek medical attention
Skin Contact: Wash thoroughly with water. If irritation persists, seek medical attention
Inhalation: Move victim to fresh air in well ventilated area. If coughing or irritation persists, seek medical attention
Ingestion: Consult physician and/or obtain competent medical assistance

Section 5 Fire Fighting Measures

General Fire Hazards: Not flammable
Extinguishing Media: Use appropriate extinguishing media for surrounding fire
Special Fire Fighting Procedure: None

Section 6: Accidental Release Measures

Clean-up Methods: When dust is generated it may over expose cleanup personnel to dust. Using respirators or wetting the material is recommended. When dry sweeping use NIOSH approved respirators when dust levels exceed exposure limits
Personal Precautions and Personal Protective Equipment: Wear appropriate protective equipment and clothing during clean-up. If dusty conditions exist use approved respirators.
Environmental Precautions: Material is a natural mineral product and will not cause adverse effects to the water system other than turbidity from suspended particles.

Section 7: Handling and Storage

Handling Procedures: Wear the appropriate eye protection and avoid dust contact with eyes. Minimize dust generation and accumulation. Wear the appropriate respiratory protection when in poorly ventilated areas. Use good industrial hygiene practices.

Section 8: Exposure Controls/Personal Protection

Airborne Exposure Limits:

Silica component limit
OSHA PEL: TWA 10 mg/m^3 (respirable)
OSHA PEL : TWA 30 mg/m^3 (total dust)
CAL OSHA PEL: TWA 0.1 mg/m^3 (respirable)
CAL OSHA PEL: TWA 0.3 mg/m^3 (total dust)

Engineering Measures: Use local exhaust ventilation to control exposure below applicable limits
Personal Protective Equipment (PPE):
Respiratory: Avoid actions that cause dust exposure to occur. Use local or general ventilation to control exposures below applicable exposure limits. NIOSH or MSHA approved particulate filter respirators should be used. Respirator and/or filter cartridge selection should be based on the ANSI Standard Z88.2.

Eyes: When working around activities where dust can contact the eyes, wear safety glasses or goggles to avoid eye irritation or injury. Wearing contacts without sealing goggles is not recommended.
Skin and Body: Protective Clothing is not essential

Section 9: Physical and Chemical Properties

Appearance: Tan to grey	**Odor:** none
Physical state: Powder	**Odor threshold:** No data Available
pH: 8	**Flashpoint:** NA
Melting/Freezing Point: no data available	**Boiling Point:** NA
Evaporation Rate: NA	**Flammability:** Not Flammable
Vapor Pressure (mm HG): 0 (approximately)	**Vapor Density**: NA
Relative density: NA	**Specific Gravity**: 4.1
Solubility in water at 100 C: 0 (approximately)	**Partition coefficient**: No data available
Decomposition temperature: no data available	**Auto-ignition temperature**: NA
Viscosity: NA	

Section 10: Stability and Reactivity

Reactivity: No dangerous reactions are known under normal conditions of use
Chemical Stability: Stable
Possibility of Hazardous Reactions and Conditions to Avoid: None known
Incompatibility: None Known

Section 11: Toxicological Information

Possible Health Effects:
Target Organs: Skin, Eyes, and Respiratory system
Exposure Routes: Inhalation, skin or eye contact
Symptoms:
Short Term: Shortness of breath and/or coughing associated with dust inhalation.
Long Term Exposure (Chronic): Steady and prolonged exposure to dust concentrations high than LTV without approved respirator could cause silicosis, a chronic disease of the lungs marked by acute fibrosis, may cause cancer based on animal data.
Effects of Silicosis
Bronchitis/chronic obstructive Pulmonary Disorder
Increased susceptibility to Tuberculosis
Scleroderma
Possible Renal
Symptoms of Silicosis
Shortness of breath, fever fatigue, loss of appetite, chest pain, dry non-productive cough, respiratory failure, death.

OSHA, IARC, and NTP Carcinogen Classifications				
Chemicals with recognized Carcinogen Potential	CAS#	OSHA	IARC	NTP

Quartz (Crystalline Silica)	14808-60-7	Yes	Yes – Group 1	Yes

Section 12: Ecological Information

Eco toxicity: None Known
Biochemical oxygen demand (BOD5): None known
Chemical oxygen demand (COD): None known
Products of Biodegradation: None known
Toxicity of the products of biodegradation: None known
Bioaccumulation Potential: None known
Potential to move from soil to groundwater: None Know
Other adverse effects: None known

Section 13: Disposal Considerations

Personal Protection: Refer to section 8 for proper PPE when disposing of waste material
Appropriate disposal containers: No special requirements
Appropriate disposal methods: Disposal of this product should comply with the requirements of environmental protection and waste disposal legislation and any regional or local authority requirements.
Physical and chemical properties that may affect disposal: Dust should be minimized in disposal by either transporting in seal containers or wetting dust before transport
Sewage disposal: do not dispose of into sewage systems, material will settle out of water and clog pipes.
Special precautions for landfills or incineration activities: None

Section 14: Transport Information

Regulatory Information	UN Number	UN Proper Shipping Name	Transport Hazard Class	Packing Group Number	Bulk Transport Guidance	Special Precautions
DOT Classification	Not Regulated	-	-	-	-	-
TDG Classification	Not Regulated	-	-	-	-	-
ADR/RID Class	Not Regulated	-	-	-	-	-
IMDG Class	Not Regulated	-	-	-	-	-
IATA-DGR Class	Not Regulated	-	-	-	-	-

Section 15 Regulatory Information

TSCA – Toxic Substances Control Act – EPA Quartz and other chemicals are listed in the TSCA Chemical Substance Inventory

California Prop. 65 WARNING: This product contains a chemical known to the State of California to cause cancer. (Prop. 65 – California Health and Safety Code Section 2549 Et Seq)
SARA/Title III (Emergency Planning & Community Right-to-Know Act This mixture contains no substances at or above the reporting threshold under section 313, based on available data.

Section 16: Other Information

Definitions
ASTM –American System of Testing and Materials
OSHA – Occupational Safety & Health Administration
IARC – International Agency for Research on Cancer
NTP – National Toxicogmail.com
HCS – Hazardous Communication Standard
CAS – Chemical Abstract Service
ACGIH – American Conference of Governmental Industrial Hygienists
CAL-OSHA – California Occupational Safety & Health Administration
OSHA PEL – OSHA Permissible Exposure Levels
OSHA STEL - spot exposure for a duration of 15 minutes, which cannot be repeated more than 4 times per day with at least 60 minutes between exposure periods.
TLV – Threshold Limit Value
TWA – Time Weighted Average
TLV-TWA –Time weighted average Threshold limit value
TLV-STEL – Shot-term exposure limit Threshold limit value
TLV-C – Ceiling Limit – absolute limit that should not be exceeded at any time

Revisions: Existing MSDS revised to new GHS format. Revision Date 08/31/2015

The information presented herein has been compiled from sources considered to be dependable and is accurate and reliable to the best of our knowledge and belief but is not guaranteed to be so, nothing here in is to be construed as recommending any practice or product in violation of any patent, law, or regulation. It is the user's responsibility to determine the suitability of any material for a specific purpose and to adopt such safety precautions as may be necessary. We make no warranty as to the results to be obtained in using any material and, since conditions of use are not under our control, we must necessarily disclaim all liability with respect to the use of any material we supply.

MATERIAL SAFETY DATA SHEET

MSDS NO. 10045 **Trade Name:** VG-69* **Revision Date:** 02/16/2007

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade Name: VG-69*
Chemical Family: Mixture
Product Use: Oil well drilling fluid additive.
Emergency Telephone (24 hr.): 281-561-1600

Supplied by: M-I L.L.C.
P.O. Box 42842
Houston, TX 77242
www.miswaco.com
Telephone Number: 281-561-1512
Contact Person: Joanne Galvan, Sr. Product Safety Specialist

Revision Number: 6

HMIS Rating
Health: 1* **Flammability:** 0 **Physical Hazard:** 0 **PPE:** E

HMIS Key: 4=Severe, 3=Serious, 2=Moderate, 1=Slight, 0=Minimal Hazard. *Chronic effects - See Section 11. See Section 8 for Personal Protective Equipment recommendations.

2. HAZARDS IDENTIFICATION

Emergency Overview: Caution! May cause eye, skin, and respiratory tract irritation. Long term inhalation of particulates may cause lung damage. Cancer hazard. Contains crystalline silica which may cause cancer.

Canadian Classification:
UN PIN No: Not regulated. **WHMIS Class:** D2A

Physical State: Powder. **Odor:** Fatty Acid **Color:** Off-white

Potential Health Effects:

Acute Effects

Eye Contact: May cause mechanical irritation
Skin Contact: May cause mechanical irritation. Long term contact can cause skin dryness.
Inhalation: May cause mechanical irritation.
Ingestion: May cause gastric distress, nausea and vomiting if ingested.

Carcinogenicity & Chronic Effects: See Section 11 - Toxicological Information.
Routes of Exposure: Eyes. Dermal (skin) contact. Inhalation.
Target Organs/Medical Conditions Aggravated by Overexposure: Eyes. Skin. Respiratory System.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS No.	Wt. %	Comments:
Organophilic clay		80 - 95	No comments.
Silica, crystalline, quartz	14808-60-7	2 - 15	No comments.
Inorganic salt		0 - 1	No comments.
Silica, crystalline, Tridymite	15468-32-3	0 - 1	No comments.

4. FIRST AID MEASURES

Eye Contact: Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

Skin Contact: Wash skin thoroughly with soap and water. Remove contaminated clothing and launder before reuse. Get medical attention if any discomfort continues.

Inhalation: Move person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion: Dilute with 2 - 3 glasses of water or milk, if conscious. Never give anything by mouth to an unconscious person. If signs of irritation or toxicity occur seek medical attention.

General notes: Persons seeking medical attention should carry a copy of this MSDS with them.

5. FIRE FIGHTING MEASURES

Flammable Properties

Flash Point: F (C): NA
Flammable Limits in Air - Lower (%): NA
Flammable Limits in Air - Upper (%): NA
Autoignition Temperature: F (C): NA
Flammability Class: NA
Other Flammable Properties: Static ignition hazard can result from handling and use. Dusts at sufficient concentrations can form explosive mixtures with air.
Extinguishing Media: Water fog, carbon dioxide, foam, dry chemical.

Protection Of Fire-Fighters:

Special Fire-Fighting Procedures: Do not enter fire area without proper personal protective equipment, including NIOSH/MSHA approved self-contained breathing apparatus. Evacuate area and fight fire from a safe distance. Water spray may be used to keep fire-exposed containers cool. Keep water run off out of sewers and waterways.

Hazardous Combustion Products: Oxides of carbon and nitrogen.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Use personal protective equipment identified in Section 8.

Spill Procedures: Evacuate surrounding area, if necessary. Wet product may create a slipping hazard. Contain spilled material. Avoid the generation of dust. Sweep, vacuum, or shovel and place into closable container for disposal.

Environmental Precautions: Do not allow to enter sewer or surface and subsurface waters. Waste must be disposed of in accordance with federal, state and local laws.

7. HANDLING AND STORAGE

Handling: Put on appropriate personal protective equipment. Avoid contact with skin and eyes. Avoid generating or breathing dust. Product is slippery if wet. Use only in a well ventilated area. Wash thoroughly after handling.

Storage: Store in dry, well-ventilated area. Keep container closed. Store away from incompatibles. Follow safe warehousing practices regarding palletizing, banding, shrink-wrapping and/or stacking.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits (TLV & PEL - 8H TWA):

Ingredient	CAS No.	Wt. %	ACGIH TLV	OSHA PEL	Other	Notes
Organophilic clay		80 - 95	NA	NA	NA	(1)
Silica, crystalline, quartz	14808-60-7	2 - 15	0.025 mg/m^3	see Table Z-3	NIOSH: 0.05 mg/m^3 TWA (10H day/40H wk)	(R)
Inorganic salt		0 - 1	10 mg/m^3	15 mg/m^3 (total); 5 mg/m^3 (respirable)	NA	None
Silica, crystalline, Tridymite	15468-32-3	0 - 1	0.05 mg/m^3	see Table Z-3	NA	(R)

Notes
(1) Control as an ACGIH particulate not otherwise specified (PNOS): 10 mg/m^3 (Inhalable); 3 mg/m^3 (Respirable) and an OSHA particulate not otherwise regulated (PNOR): 15 mg/m^3 (Total); 5 mg/m^3 (Respirable).
(R) Respirable fraction (ACGIH);
Table Z-3: PEL for Mineral Dusts containing crystalline silica are 10 mg/m^3 / (%SiO2+2) for quartz and 1/2 the calculated quartz value for cristobalite and tridymite.

Engineering Controls: Use appropriate engineering controls such as, exhaust ventilation and process enclosure, to ensure air contamination and keep workers exposure below the applicable limits.

Personal Protection Equipment

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazards present and the risk of exposure to those hazards. The PPE recommendations below are based on our assessment of the chemical hazards associated with this product. The risk of exposure and need for respiratory protection will vary from workplace to workplace and should be assessed by the user.

Eye/Face Protection: Dust resistant safety goggles.

Skin Protection: Wear appropriate clothing to prevent repeated or prolonged skin contact. Chemical resistant gloves recommended for prolonged or repeated contact. Use protective gloves made of: Nitrile. Neoprene.

Respiratory Protection: All respiratory protection equipment should be used within a comprehensive respiratory protection program that meets the requirements of 29 CFR 1910.134 (U.S. OSHA Respiratory Protection Standard) or local equivalent.

If exposed to airborne particles of this product use at least a NIOSH-approved N95 half-mask disposable or re-useable particulate respirator. In work environments containing oil mist/aerosol use at least a NIOSH-approved P95 half-mask disposable or re-useable particulate respirator.

General Hygiene Considerations: Work clothes should be washed separately at the end of each work day. Disposable clothing should be discarded, if contaminated with product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color: Off-white

Odor:	Fatty Acid
Physical State:	Powder.
pH:	ND
Specific Gravity (H2O = 1):	1.57
Solubility (Water):	Dispersible
Melting/Freezing Point:	ND
Boiling Point:	ND
Vapor Pressure:	NA
Vapor Density (Air=1):	NA
Evaporation Rate:	NA
Odor Threshold(s):	ND

10. STABILITY AND REACTIVITY

Chemical Stability:	Stable
Conditions to Avoid:	Keep away from heat, sparks and flame.
Materials to Avoid:	ND.
Hazardous Decomposition Products:	For thermal decomposition products, see Section 5.
Hazardous Polymerization:	Will not occur

11. TOXICOLOGICAL INFORMATION

Component Toxicological Data: Any adverse component toxicological effects are listed below. If no effects are listed, no such data were found.

Ingredient	Component Toxicological Summary
Silica, crystalline, quartz	Crystalline silica is the most widely occurring of all minerals. The most common form of silica is sand. The International Agency for Research on Cancer (IARC) has designated crystalline silica in the form of quartz or cristobalite a Group 1 (carcinogenic to humans). This designation was based on an increased risk of lung cancer among crystalline silica exposed workers. IARC did note that carcinogenicity of crystalline silica in humans was not detected in all industrial circumstances studied. Further, carcinogenicity of crystalline silica may be dependent on inherent characteristics of the crystalline silica or external factors affecting its biological activity or distribution of polymorphs. (IARC Vol. 68, 1997, p. 41). The National Toxicology Program (NTP) classifies crystalline silica as "reasonably anticipated to cause cancer in humans" (6th Annual Report on Carcinogens, 1991). Long term inhalation of crystalline silica can also result in the lung disease, silicosis. Symptoms of this disease include coughing and shortness of breath. (NJ HSFS, January 1996)

Product Toxicological Information:
Long term inhalation of particulate can cause irritation, inflammation and/or permanent injury to the lungs. Illnesses such as pneumoconiosis ("dusty lung"), pulmonary fibrosis, chronic bronchitis, emphysema and bronchial asthma may develop.

12. ECOLOGICAL INFORMATION

Product Ecotoxicity Data:	Contact M-I Environmental Affairs Department for available product ecotoxicity data.
Biodegration:	ND
Bioaccumulation:	ND
Octanol/Water Partition Coefficient:	ND

13. DISPOSAL CONSIDERATIONS

Waste Classification: ND

Waste Management: Under U.S. Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user to determine at the time of disposal, whether the product meets RCRA criteria for the hazardous waste. This is because product uses, transformations, mixtures, processes, etc., may render the resulting materials hazardous. Empty containers retain residues. All labeled precautions must be observed.

Disposal Method: Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that the containers are empty by the RCRA criteria prior to disposal in a permitted industrial landfill.

14. TRANSPORT INFORMATION

U.S. DOT Shipping Description: Not regulated for transportation by DOT, TDG, IMDG, ICAO/IATA.

Canada TDG Shipping Description: Not regulated.
UN PIN No: Not regulated.

IMDG Shipping Description: Not regulated.

ICAO/IATA Shipping Description: Not regulated.

15. REGULATORY INFORMATION

U.S. Federal and State Regulations

SARA 311/312 Hazard Catagories: Delayed (chronic) health hazard.

SARA 302/304, 313; CERCLA RQ, California Proposition 65: Note: If no components are listed below, this product is not subject to the referenced SARA and CERCLA regulations and is not known to contain a Proposition 65 listed chemical at a level that is expected to pose a significant risk under anticipated use conditions.

Ingredient	SARA 302 / TPQs	SARA 313	CERCLA RQ	CA 65 Cancer	CA 65 Dev. Tox.	CA 65 Repro. F	CA 65 Repro. M
Silica, crystalline, quartz	---	---	---	X	---	---	---
Silica, crystalline, Tridymite	---	---	---	X	---	---	---

International Chemical Inventories

Australia AICS - Components are listed or exempt from listing.
Canada DSL - Components are listed or exempt from listing.
China Inventory - Components are listed or exempt from listing.
European Union EINECS/ELINCS - Components are listed or exempt from listing.
Japan METI ENCS - Contains a component that is not listed.
Korea TCCL ECL - Components are listed or exempt from listing.
Philippine PICCS - Components are listed or exempt from listing.
U.S. TSCA - Components are listed or exempt from listing.
U.S. TSCA - No components are subject to TSCA 12(b) export notification requirements.

Canadian Classification:

Controlled Products Regulations Statement: This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS Class: D2A

16. OTHER INFORMATION

The following sections have been revised: 1, 2, 3, 8, 10, 16

NA - Not Applicable, ND - Not Determined.

*A mark of M-I L.L.C.

Disclaimer:

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We can not make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guartantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

BRI-CHEM SUPPLY LTD.

Material Safety Data Sheet

PRIMARY EMULSIFIER

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name PRIMARY EMULSIFIER

Product Identifier Fatty Acid Derivatives in Glycol Ethers

Product Family Oil Mud Emulsifier

Supplier Bri-Chem Supply Ltd., Bay 4, 5510 - 3rd Street SE, Calgary, Alberta, T2H 1J9, Bri-Chem Supply, 403-252-5904, www.brichemsupply.com

Emergency Contact Information ChemTrec, (800) 424-9300, 24/7

Use Drilling Fluid Additive

2. HAZARDS IDENTIFICATION

Emergency Overview Dark amber liquid. Slight odour. Causes severe eye irritation.

Potential Health Effects

Carcinogenicity Not Carcinogenic IARC\NTP\OSHA.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Concentration %	Other Identifiers
Fatty acids derivatives	Proprietary	90-100	
Glycol ethers	Proprietary	5-10	

4. FIRST AID MEASURES

First Aid Procedures

Inhalation Ventilate the premises. The patient should be removed from the contaminated premises and made to rest in a well-ventiated area. Should the patient feel unwell, get prompt medical attention.

Skin Contact Quickly take off contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Areas of the body that have come in contact with the product must be immediately rinsed with plenty of water and possibly with soap.

Eye Contact Immediately flush the contaminated eye(s) with lukewarm, gently flowing water while holding the eyelid(s) open for at least 10 minutes. Following this, protect the eyes with sterile gauze or a clean, dry handkerchief. Obtain immediate medical attention.

Ingestion DO NOT induce vomiting under any circumstances. Immediately call a Poison Centre or doctor.

5. FIRE FIGHTING MEASURES

Flammable Properties Non-flammable.

Suitable Extinguishing Media Water, carbon dioxide, foam, chemical powders, according to the materials involved in the fire.

Specific Hazards Arising from the Chemical Avoid inhaling the fumes.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Use the Personal Protective Equipment recommended in Section 8 of this MSDS.
Environmental Precautions	Limit leakages with earth or sand. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Methods for Containment and Clean-up	Rapidly recover the product. Wear a mask and protective clothing. Stop the product from entering the drainage system. Recover the product for re-use, if possible, or for elimination. The product might, where appropriate, be absorbed by inert material.

7. HANDLING AND STORAGE

Handling	Avoid contact and inhalation of the vapours/spray. Only use where there is adequate ventilation. Wear personal protective equipment to avoid direct contact with this chemical. Do not eat or drink while working.
Storage	Keep container tightly closed. Store in a well ventilated area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls Give adequate ventilation to the premises where the product is stored and/or handled.

Personal Protective Equipment (PPE)

Eye/Face Protection	Safety glasses with side shields. Do not wear contact lenses.
Skin Protection	Use clothing and gloves that provide comprehensive protection to the skin and hands.
Respiratory Protection	Use adequate protective respiratory equipment.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Dark amber liquid.
Particle Size	Not available
Odour	Slight
Odour Threshold	Not available
Molecular Formula	Not available
Molecular Weight	Not available
Boiling Point	> 150 °C
Decomposition Temperature	Not available
Melting Point	Not available
Freezing Point	Not available
Relative Density (water = 1)	0.94 - 1.04
Bulk Density	Not available
Solubility in Water	Insoluble
Solubility in Other Liquids	Not available
pH	Not available
Partition Coefficient, n-Octanol/Water	Not available
Viscosity-Kinematic	Not available
Surface Tension	Not available
Vapour Pressure	Not available
Vapour Pressure at 50 deg C	Not available
Saturated Vapour Concentration	Not available
Critical Temperature	Not available

Vapour Density (air = 1)	Not available
Evaporation Rate	Not available
Flash Point	> 93 °C (200 °F) (closed cup)
Lower Flammable/Explosive Limit	Not available
Upper Flammable/Explosive Limit	Not available
Auto-ignition Temperature	Not available

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under normal conditions.
Hazardous Decomposition Products	None known.

11. TOXICOLOGICAL INFORMATION

LD50 Acute Oral Rat: >2000 mg/kg **
** based on components

Skin Irritation/Corrosion

Repeated or prolonged contacts may cause slight irritation.

Eye Irritation/Corrosion

Causes severe eye irritation.

Effects of Short-Term (Acute) Exposure

Inhalation

Not an inhalation hazard under normal conditions of use at room temperature.

Carcinogenicity

Not Carcingenic IARC\NTP\OSHA

No information was located for: Effects of Long-Term (Chronic) Exposure, Respiratory and/or Skin Sensitization, Teratogenicity / Embryotoxicity, Reproductive Toxicity, Mutagenicity, Toxicologically Synergistic Materials

12. ECOLOGICAL INFORMATION

General Comments Adopt good working practices so that the product is not released into the environment.

13. DISPOSAL CONSIDERATIONS

Recover if possible. Dispose of according to Federal, Provincial or Municipal guidelines or laws, including the Canadian Environmental Protection Act.

14. TRANSPORT INFORMATION

Shipping Information

Not regulated under Canadian TDG Regulations.

Other Transport Information

Special Shipping Information	Not applicable

15. REGULATORY INFORMATION

Canada

WHMIS Classification

Class D2B

D2B - Toxic

16. OTHER INFORMATION

MSDS Prepared By Bri-Chem Supply Ltd

Date of Preparation October 25, 2013

Additional Information This Health and Safety information is correct to the best of our knowledge and belief at the date of its publication, but we cannot accept liability for any loss, injury or damage which may result from its use. We shall ensure, so far as is reasonably practicable, that any revision of this Data Sheet is sent to all customers to whom we have directly supplied this substance, but must point out that it is the responsibility of any intermediate supplier to ensure that such revision is passed to the ultimate user. The information given in the Data Sheet is designed only as guidance for safe handling, storage, and the use of the substance. It is not a specification nor does it guarantee any specific properties. All chemicals should be handled only by competent personnel, within a controlled environment. Should further information be required, this can be obtained through the sales office whose address is at the top of this data sheet.

APPENDIX C: GEOLOGICAL AND GEOPHYSICAL INFORMATION

C.1 Geological Description
Proprietary Copy only.

C.2 Structure Contour Map
Proprietary Copy only.

C.3 Interpreted 3-D Seismic Line
Proprietary Copy only.

C.4 Geological Structure Cross-Sections
Proprietary Copy only.

C.5 Shallow Hazards Report
W&T Offshore, Inc. contracted Tesla Offshore, LLC to conduct a shallow hazards survey across Main Pass Blocks 285 and 286. Three (3) copies of this report (two hard copies and one CD) are being submitted on this date under separate cover.

C.6 Shallow Hazards Assessment
A shallow hazards assessment has been prepared for the 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-1.***

C.7 High-Resolution Seismic Lines
Attached to one Proprietary Copy of this Plan are annotated high-resolution survey lines closest to each of the proposed well location.

C.8 Stratigraphic Column
Proprietary Copy only.

C.9 Time vs. Depth Tables
Sufficient well control data for the target areas proposed in this EP exists; therefore, seismic time versus depth tables for the proposed well locations are not required.

TESLA OFFSHORE, LLC

36499 Perkins Road
Prairieville, Louisiana 70769
Telephone: 225.673.2163
Fax: 225.744.3116
www.teslaoffshore.com

April 29, 2016 Job No. 16-055-31

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

RE: W&T Offshore, Inc.
Proposed Well No. 1 OCS-G 34390
Block 286, Main Pass Area, South and East Addition
Shallow Hazards and Archaeological Assessment

W&T Offshore, Inc. proposes to drill proposed Well No. 1 from the following surface location in Block 286, Main Pass Area, South and East Addition:

Datum: NAD 27	Spheroid: Clarke 1866	Projection: LAMBERT	Zone: LAS	Central Meridian: 91° 20' West
Latitude: 29° 15' 18.2115" N			Longitude: 88° 19' 29.3022" W	
X: 2,959,316.00			Y: 226,564.00	
FEL: 2,629'			FNL: 7,266'	

W&T Offshore, Inc. contracted Tesla Offshore, LLC to conduct a high-resolution geophysical survey over Blocks 285 and 286, Main Pass Area, South and East Addition, offshore Louisiana. The survey was performed between July 1st and 3rd, 2013, using 300 meter primary grid spacing and 900 meter tie lines. W&T selected Tesla 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 echosounder, magnetometer, side scan sonar, subbottom profiler, and processed seismic sections from the survey line nearest the proposed surface location as required by the BOEM in **NTL No. 2008-G04**.

- ***Water depth*** is approximately 294 feet surrounding the proposed drill site. Water depths increase to the southeast at an approximate rate of 24 feet per mile.

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

- ***Seafloor installations*** located within 1,000 feet of the proposed surface location are limited to the 16" Shell pipeline (Segment No. 11677) located approximately 580' to the south at its closest point.

- ***Magnetic anomalies*** are not located within 1,000 feet of the proposed surface location. The closest magnetic anomalies designated for avoidance are nos. 24 and 25, a discrete anomaly cluster located approximately 3,950 feet to the SW of the proposed well site. Anomaly no. 24 is a 250 nT negative monopole with a 50 foot duration and no. 25 is a 1,260 nT megative monopole with a 50 foot duration. Both

anomalies have been designated for avoidance of 100 feet each as both potential hazards and cultural resources pending further investigation.

- ***Side scan sonar*** verified that the seafloor immediately surrounding the proposed well site was clear of protruding obstructions. The nearest sonar target is no. 5, located approximately 2,760 feet to the north-northwest. Target no. 5 is a linear object measuring approximately 235 feet x 3 feet with 1.5 feet of measurable relief from the surrounding seafloor and has been designated for avoidance by 50 feet as a potential hazard only. Several pinnacle areas were observed within the survey area, none within 1,000 feet of the proposed well site. The closest pinnacle was observed approximately 1,610 feet to the south-southeast and exhibits approximately 5' of relief from the surrounding seafloor. None of the observed targets or pinnacle areas will be impacted by operations at the proposed site, but should be noted during subsequent ancillary activities such as anchoring.

- ***Subbottom data*** in the vicinity of the surface location resolved a highly reflective seafloor underlain by approximately 20 feet of primarily acoustically amorphous sediments with some faint clinoform stratification followed by acoustic attenuation. Near seafloor sediments appear to be primarlily coarse grained sands with no internal bedding. Subbottom penetration was extremely limited throughout the entire survey area. No evidence of channeling or faulting was observed from the subbottom profiler data. Geophysical data cannot quantify seafloor stability; geotechnical data would be necessary to determine seafloor stability.

- ***Processed seismic data*** (2.0 seconds) recorded approximately 1.85 seconds of usable subsurface data. The seismic data display a moderately reflecting, disrupted parallel to subparallel general reflection configuration. No fautling or other structural issues were evident in proximity to the proposed well. No amplitude anomalies were observed within 1,000 feet of the proposed surface location. The nearest anomaly is located approximately 1,050 feet to the ENE observed at of depth of 149 ms BSL. The proposed well site is not situated directly on a 2D survey line, so 3D data should be reviewed to ensure no issues are present directly beneath the proposed well.

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, magnetic anomalies, or other features on the geophysical data were recorded which were interpreted as possible shipwrecks, or possible high probability areas for prehistoric habitation within 1,000 feet of the proposed well location. Pursuant to 30CFR 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,

Erin Voisin

Erin Voisin, MA
Hazards Analyst/Archaeologist

APPENDIX D: HYDROGEN SULFIDE INFORMATION

D.1 Concentration

W&T does not anticipate encountering any H_2S during the proposed operations.

D.2 Classification

In accordance with Title 30 CFR 250.490(c), W&T requests that the area of our proposed activities be classified by the MMS as H_2S absent.

APPENDIX E: BIOLOGICAL, PHYSICAL AND SOCIOECONOMIC INFORMATION

E.1 High-Density Deepwater Benthic Communities

This EP does not propose activities that could disturb seafloor areas in water depths of 300 meters (984 feet) or greater; therefore, chemosynthetic information is not required.

E.2 Topographic Features (Banks)

Activities proposed in this EP do not fall within 305 meters (1000 feet) of any designated "no activity zones"; therefore, no map is required.

E.3 Topographic Features Statement (Shunting)

Drilling activities proposed in this EP are not located within a "3-Mile Zone" of any known topographic feature; therefore, shunting drill cuttings and fluids to the sea bottom will not be undertaken.

E.4 Live Bottoms (Pinnacle Trend) Map

The Live-Bottom (Pinnacle Trend) Stipulation attached to the oil and gas lease instrument for Lease OCS-G 34390 outlines the requirement for a live bottom survey report for these live bottom areas, which are defined as small, isolated, low to moderate relief carbonate reefal features or outcrops of unknown origin or hard substrates exposed by erosion that provide surface area for the growth of sessile invertebrates and attract large numbers of fish. The required Live Bottom Survey Report is included in the Tesla Shallow Hazard Report submitted under separate cover.

Activities in this EP will not disturb the sea bottom within 200 feet of any vertical relief known to exist in this lease block. In support of this statement, included herein as Attachment E-1 is a Seafloor Features Map showing the proposed surface location of the planned well in relation to the nearest biological outcropping. Included as ***Attachment E-1*** is a Seafloor Features Map depicting all pinnacle trends as surveyed by Tesla in relation to the proposed surface location of the planned well.

Since our proposed activities under this EP will be a significant distance away from any known pinnacle outcroppings, W&T will not be submitting an "as-place" map showing all bottom disturbing activities within 90 days of completed planned activities.

E.5 Live Bottoms (Low Relief) Stipulation

Main Pass Block 286 is not located within 100 feet of any pinnacle trend feature with vertical relief equal to or greater than 8 feet; therefore, live bottom (low relief) maps are not required.

E.6 Potentially Sensitive Biological Features

Main Pass Block 286 is not located within 30 meters (100 feet) of potentially sensitive biological features; therefore, biologically sensitive area maps are not required.

E.7 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.

E.8 Archaeological Report

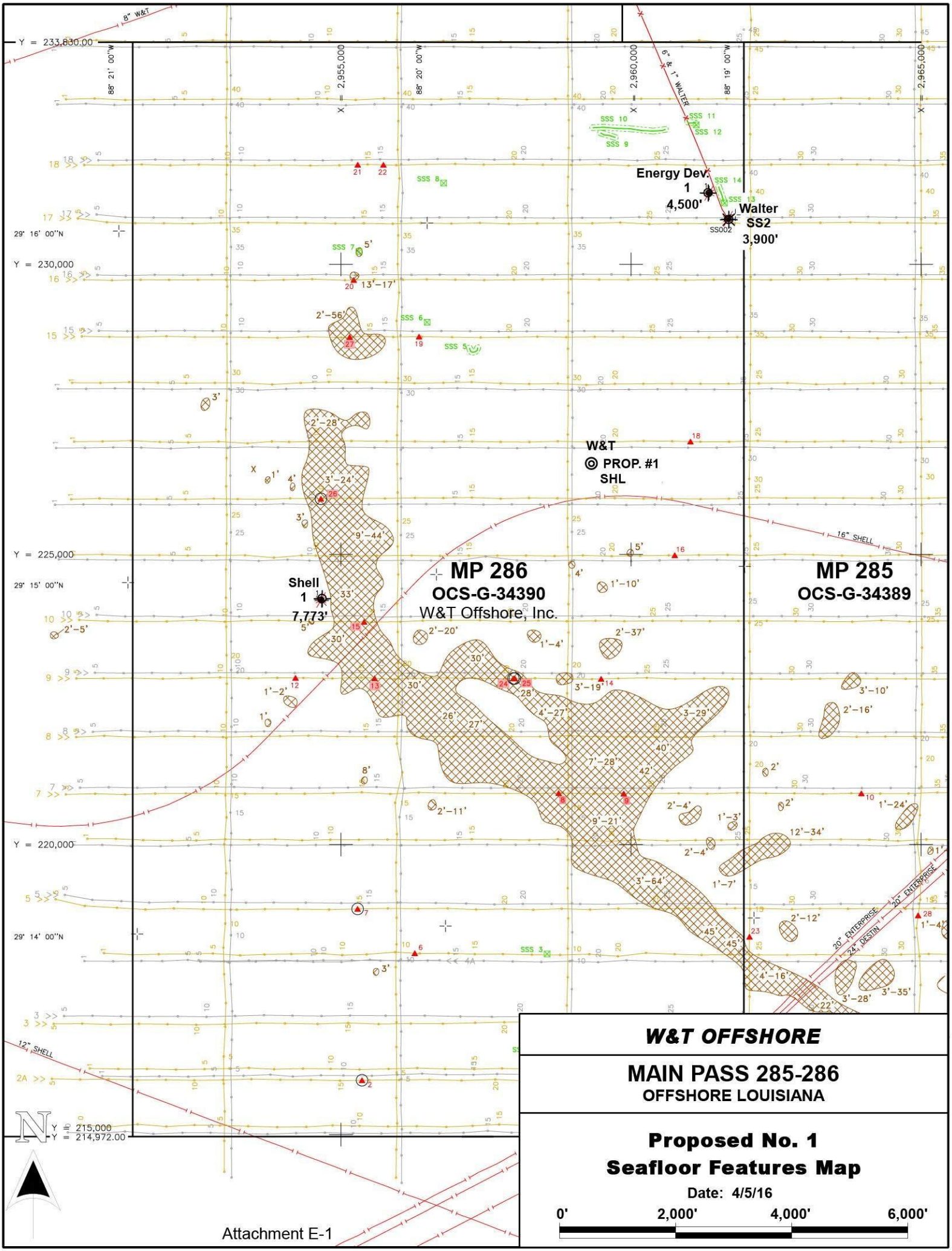
Main Pass Block 286 has been determined to have a high potential for containing prehistoric archaeological properties; therefore, an Archaeological Survey Report has been prepared in accordance with NTL 2005-G07 "Archaeological Surveys and Reports", and NTL 2008-G20 "Revisions to the List of OCS Lease Blocks Requiring Archaeological Resources Surveys and Reports", This report is included with the Shallow Hazard Report being submitted under separate cover.

E.9 Air and Water Quality Information

Activities under this EP do not affect the State of Florida; therefore, this information is not being provided.

E.10 Socioeconomic Information

Activities under this EP do not affect the State of Florida; therefore, this information is not being provided.



W&T OFFSHORE

MAIN PASS 285-286

OFFSHORE LOUISIANA

Proposed No. 1
Seafloor Features Map

Date: 4/5/16

0' 2,000' 4,000' 6,000'

Attachment E-1

APPENDIX F: WASTES AND DISCHARGES INFORMATION

F.1 Wastes to be Discharge Overboard

Projected generated wastes as a result of the activities proposed in this Initial EP that will be either discharged overboard in accordance with the EPA's general permit, or be disposed of downhole are detailed in ***Attachment F-1*** included in this document.

F.2 Wastes to be Transported to Onshore for Disposal

Projected generated wastes as a result of the activities proposed in this Initial EP that will be transported to an onshore facility for disposal are detailed in ***Attachment F-2*** included in this document.

TABLE 1: WASTES TO BE GENERATED, TREATED AND DOWNHOLE DISPOSED OF OR DISCHARGED TO THE GOM

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

Projected generated waste			Projected ocean discharges		Downhole Disposal
Type of Waste	**Composition**	**Projected Amount**	**Discharge Rate**	**Discharge Method**	**Answer *yes* or *no***
Will drilling occur? If yes, you should list muds and cuttings					
Example: Sanitary Waste water	*Cuttings generated*	*X bbl/well*	*X bbls/day/well*	*Discharge overboard*	*No*
Water-based drilling fluid	Water base mud	3500 bbls	3500 bbls Total	Discharge overboard	No
Cuttings wetted with water-based fluid	Cuttings while using WBM	3500 bbls	3500 bbls Total	Discharge overboard	No
Cuttings wetted with synthetic-based fluid	N/A	N/A	N/A	N/A	N/A
Will humans be there? If yes, expect conventional waste					
Example: Sanitary waste water	*Sanitary waste from living quarters*	*X bbl/well*	X bbl/hr (total)	*Chlorinate and discharge overboard*	*No*
Domestic waste	Gray water	2700 bbls Total	30gal/person/day	Treat and discharge overboard	No
Sanitary waste	Sewage waste	1800 bbls Total	20gal/person/day	Treat and discharge overboard	No
Is there a deck? If yes, there will be deck drainage					
Deck Drainage	Rain Water	0 – 2000 bbls	N/A	Discharge overboard	No
Will you conduct well treatment, completion, or workover?					
Well treatment fluids	N/A	N/A	N/A	N/A	No
Well completion fluids	N/A	N/A	N/A	N/A	No
Workover fluids	N/A	N/A	N/A	N/A	No
Miscellaneous discharges? If yes, only fill in those associated with your activity					
Desalinization unit discharge	N/A	N/A	N/A	N/A	No
Blowout preventer fluid	N/A	N/A	N/A	N/A	No
Ballast water	N/A	N/A	N/A	N/A	No
Bilge water	N/A	N/A	N/A	N/A	No
Excess cement	12 ppg cement circ. to surface	200 bbls	4 bpm when cmtg 20" and 16" casing	Discharge overboard	No
Fire water	N/A	N/A	N/A	N/A	No
Cooling water	N/A	N/A	N/A	N/A	No
Will you produece hydrocarbons? If yes, fill in for produced water					
Produced water	Subsea tieback - Production sent to W&T's MP 283 platform	N/A	N/A	N/A	No
Please enter individual or general to indicate which type of NPDES permit you will be covered by					
NOTE: If you will not have a type of waste for the activity being applied for, enter NA for all columns in the row.			NOTE: All discharged wastes should comply with requirements of the NPDES permit.		

TABLE 2. WASTES THAT WILL BE TRANSPORTED AND DISPOSED OF ONSHORE

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

Projected generated wastes		Solid and Liquid Wastes transportation	Waste Disposal		
Type of Waste	**Composition**	**Transportation Method**	**Name/location of facility**	**Amount**	**Disposal method**
Will drilling occur? If yes, fill in the muds and cuttings					
Example: Synthetic-based drilling fluid or mud	*Internal olefin, ester*	*Below deck storage tanks on offshore support vessels*	*EcoServ*	*X bbls/well*	*Recycled*
Oil-based drilling fluid or mud	Diesel OBM	Below deck storage tanks on supply vessel	Newpark Drilling Fluids, Venice or Fourchon	2000 bbls Total	Recycled
Synthetic-based drill fluid or mud	N/A	N/A	N/A	N/A	N/A
Cuttings wetted with Water-based fluid	N/A	N/A	N/A	N/A	N/A
Cuttings wetted with oil-based fluids	Diesel OBM drill cuttings	25 bbl cuttings tanks	EcoServe, Venice	900 bbls Total	Disposed
Completion fluids	CaBr2	Below deck storage tanks on supply vessel	Baker Hughes, Fourchon	1000 bbls Total	Recycled
Will you produce hydrocarbons? If yes, then fill in for produced sand.					
Produced sand	N/A	N/A	N/A	N/A	N/A
Will you have additional wastes that are not permitted for discharge? If yes, fill in the appropriate rows.					
Example: trash and debris (recyclables)	*Plastic, paper, aluminum*	*Barged in a storage bin*	*ARC, New Iberia, LA*	*X bbls Total*	*Recycled*
Trash and debris	Paper & Plastic	Garbage bags on supply vessels	EcoServe, Venice	22 Bags - Total	Landfill
Used oil Rags / filters	Oily rags / pads, used oil filters	DOT drums on supply vessels	EcoServe, Venice	3 Drums - Total	Incineration
Wash water	N/A	N/A	N/A	N/A	N/A
Chemical product wastes	N/A	N/A	N/A	NA	N/A
Used oil	Used engine oil	550 gal tote tanks on supply vessels	EcoServe, Venice	2 Tanks-Total	Recycled
Cooking oil	Used cooking oil	55 gal drums on supply vessels	EcoServe Venice	1 Drum-Total	Recycled

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

APPENDIX G: AIR EMISSIONS INFORMATION

G.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
Does or will the facility complex associated with your proposed development and production activities process production from eight or more wells?		X
Do you expect to encounter H_2S at concentrations greater than 20 parts per million (ppm)?		X
Do you propose to flare or vent natural gas in excess or criteria set for the under 250.1105(a)(2) and (3)?		X
Do you propose to burn produced hydrocarbon liquids?		X
Are your proposed exploration activities located within 25 miles (40 kilometers) from shore?		X
Are your proposed development and production activities located within 124 miles (200 kilometers) of the Breton Wilderness Area?	X	

Summary information regarding the peak year emissions that will be generated by and associated with the Plan Emissions are shown in the table below. This information is compiled on the summary form of the one set of worksheets included as ***Attachment G-1***.

There are no existing facilities or activities co-located with the current proposed activities, therefore the Complex Total Emissions are the same as the Plan Emissions and are provided in the table below.

Air Pollutant	*Plan Emission Amounts (tons)*	*Calculated Exemption Amounts (tons)*	*Calculated Complex Total Emission Amounts (tons)*
Carbon Monoxide (CO)	70.56	40623.65	70.56
Particular matter (PM)	9.41	1375.29	9.41
Sulphur dioxide (SO_2)	43.16	1375.29	43.16
Nitrogen oxides (NO_x)	323.38	1375.29	323.38
Volatile organic compounds (VOC)	9.70	1375.29	9.70

This information was calculated by: Valerie Land, Regulatory Manager
(713) 624-7272
vland@wtoffshore.com

OMB Control No. 1010-0151
OMB Approval Expires: 03/31/2018

EXPLORATION PLAN (EP)
AIR QUALITY SCREENING CHECKLIST

COMPANY	W & T Offshore, Inc.
AREA	Main Pass
BLOCK	286
LEASE	G34390
PLATFORM	N/A
WELL	A
COMPANY CONTACT	Valerie Land
TELEPHONE NO.	713.624.7272
REMARKS	Drill and complete Well Location A; mudline suspend well.

PLAN EMISSIONS

EMISSIONS FACTORS

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

Equipment/Emission Factors	units	PM	SOx	NOx	VOC	CO	REF.	DATE
NG Turbines	gms/hp-hr		0.00247	1.3	0.01	0.83	AP42 3.2-1& 3.1-1	10/96
NG 2-cycle lean	gms/hp-hr		0.00185	10.9	0.43	1.5	AP42 3.2-1	10/96
NG 4-cycle lean	gms/hp-hr		0.00185	11.8	0.72	1.6	AP42 3.2-1	10/96
NG 4-cycle rich	gms/hp-hr		0.00185	10	0.14	8.6	AP42 3.2-1	10/96
Diesel Recip. < 600 hp.	gms/hp-hr	1	1.468	14	1.12	3.03	AP42 3.3-1	10/96
Diesel Recip. > 600 hp.	gms/hp-hr	0.32	1.468	11	0.33	2.4	AP42 3.4-1	10/96
Diesel Boiler	lbs/bbl	0.084	2.42	0.84	0.008	0.21	AP42 1.3-12,14	9/98
NG Heaters/Boilers/Burners	lbs/mmscf	7.6	0.593	100	5.5	84	P42 1.4-1, 14-2, & 14	7/98
NG Flares	lbs/mmscf		0.593	71.4	60.3	388.5	AP42 11.5-1	9/91
Liquid Flaring	lbs/bbl	0.42	6.83	2	0.01	0.21	AP42 1.3-1 & 1.3-3	9/98
Tank Vapors	lbs/bbl				0.03		E&P Forum	1/93
Fugitives	lbs/hr/comp.				0.0005		API Study	12/93
Glycol Dehydrator Vent	lbs/mmscf				6.6		La. DEQ	1991
Gas Venting	lbs/scf				0.0034			

Sulphur Content Source	Value	Units
Fuel Gas	3.33	ppm
Diesel Fuel	0.4	% weight
Produced Gas(Flares)	3.33	ppm
Produced Oil (Liquid Flaring)	1	% weight

EMISSIONS CALCULATIONS 1ST YEAR

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL		CONTACT	PHONE	REMARKS
W & T Offshore, Inc.	Main Pass	286	G34390	N/A	A		Valerie Land	713.624.7272	

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	DAYS	PM	SOx	NOx	VOC	CO	PM	SOx	NOx	VOC	CO
DRILLING	PRIME MOVER>600hp diesel	16975	819.8925	19677.42	24	61	11.96	54.89	411.29	12.34	89.74	8.76	40.18	301.06	9.03	65.69
	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
	VESSELS>600hp diesel(crew)	1500	72.45	1738.80	12	61	1.06	4.85	36.34	1.09	7.93	0.39	1.78	13.30	0.40	2.90
	VESSELS>600hp diesel(supply)	2000	96.6	2318.40	6	26	1.41	6.47	48.46	1.45	10.57	0.11	0.50	3.78	0.11	0.82
	VESSELS>600hp diesel(tugs)	6000	289.8	6955.20	24	3	4.23	19.40	145.37	4.36	31.72	0.15	0.70	5.23	0.16	1.14
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	OIL BURN	0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WELL TEST	GAS FLARE		0		0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
2016 YEAR TOTAL							18.66	85.61	641.46	19.24	139.96	9.41	43.16	323.38	9.70	70.56
EXEMPTION CALCULATION	DISTANCE FROM LAND IN MILES											1375.29	1375.29	1375.29	1375.29	40623.65
	41.3															

Attachment G-1 (cont'd)

EMISSIONS CALCULATIONS 2ND YEAR

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL		CONTACT	PHONE	REMARKS
W & T Offshore, Inc.	Main Pass	286	G34390	N/A	A		Valerie Land	713.624.7272	

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	DAYS	PM	SOx	NOx	VOC	CO	PM	SOx	NOx	VOC	CO
DRILLING	PRIME MOVER>600hp diesel	16975	819.8925	19677.42	24	14	11.96	54.89	411.29	12.34	89.74	2.01	9.22	69.10	2.07	15.08
	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
	VESSELS>600hp diesel(crew)	1500	72.45	1738.80	12	14	1.06	4.85	36.34	1.09	7.93	0.09	0.41	3.05	0.09	0.67
	VESSELS>600hp diesel(supply)	2000	96.6	2318.40	6	6	1.41	6.47	48.46	1.45	10.57	0.03	0.12	0.87	0.03	0.19
	VESSELS>600hp diesel(tugs)	6000	289.8	6955.20	24	3	4.23	19.40	145.37	4.36	31.72	0.15	0.70	5.23	0.16	1.14
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	OIL BURN	0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WELL TEST	GAS FLARE		0		0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
	2017 YEAR TOTAL						**18.66**	**85.61**	**641.46**	**19.24**	**139.96**	**2.28**	**10.44**	**78.26**	**2.35**	**17.07**
EXEMPTION CALCULATION	DISTANCE FROM LAND IN MILES											**1375.29**	**1375.29**	**1375.29**	**1375.29**	**40623.65**
	41.3															

Attachment G-1 (cont'd)

SUMMARY

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL
W & T Offshore	Main Pass	286	G34390	N/A	A

Year	Emitted Substance				
	PM	SOx	NOx	VOC	CO
2016	9.41	43.16	323.38	9.70	70.56
2017	2.28	10.44	78.26	2.35	17.07
Allowable	1375.29	1375.29	1375.29	1375.29	40623.65

APPENDIX H: OIL SPILL INFORMATION

H.1 Oil Spill Response Planning

W&T Offshore, Inc.'s (MMS Operator Number 01284) Regional Oil Spill Response Plan (OSRP) was approved on August 19, 2014. Activities proposed in this EP will be covered by the Regional OSRP in accordance with 30 CFR 254.

- **Spill Response Sites**

Primary Response Equipment Location	*Preplanned Staging Location*
Houma, LA Harvey, LA Leeville, LA Venice, LA	Houma, LA Harvey, LA Fourchon, LA Venice, LA

- **OSRO Information**

W&T's primary equipment provider is Clean Gulf Associates (CGA). Clean Gulf Associates Services, LLC (CGAS) will provide closest available personnel, as well as a CGAS supervisor to operate the equipment.

H.2 Worst Case Discharge Determination

Category	*Regional OSRP WCD*	*EP WCD*
Type of Activity	Drilling >10 miles from shore	Drilling >10 miles from shore
Facility Location (Area/Block)	EW910	MP286
Facility Designation	A-8	A
Distance to Nearest Shoreline (miles)	69	41.3
Volume Storage tanks (total) Uncontrolled blowout Total Volume	 171,412 bbls **171,412 bbls**	 0 bbls 90,135 bbls **90,135 bbls**
Type of Oil(s) (crude, condensate, diesel)	Crude	Lt. Crude
API Gravity	25°	41°

W&T has determined that the worst-case scenario from the activities proposed in this EP does not supersede the worst-case scenario from our approved regional OSRP. The Regional OSRP WCD volume was approved under Plan Control Number R-6143.

Since W&T has the capability to respond to the worst-case spill scenario included in our regional OSRP approved on August 19, 2014, and since the worst-case scenario determined for our EP does not replace the worst-case scenario in our regional OSRP, I hereby certify that W&T 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 EP.

H.3 Oil Spill Response Discussion

Please see ***Attachment H-1*** for the Oil Spill Response Discussion.

H.4 Modeling Report

Activities proposed under this Initial EP are in water depths of 290 – 300 feet and do not affect the State of Florida; nor will we be installing a surface facility that will host a subsea development; therefore, this information is not being supplied.

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 90,135 barrels of light crude oil with an API gravity of 41°.

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 25% probability of impact to the shorelines of Plaquemines Parish, Louisiana within 10 days. Plaquemines Parish includes Barataria Bay, the Mississippi River Delta, Breton Sound and the affiliated islands and bays. This region is an extremely sensitive habitat and serves as a migratory, breeding, feeding and nursery habitat for numerous species of wildlife. Beaches in this area vary in grain particle size and can be classified as fine sand, shell or perched shell beaches. Sandy and muddy tidal flats are also abundant.

Response

W&T Offshore, Inc. 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 light crude oil, an ADIOS weathering model was run on a similar product from the ADIOS oil database. The results indicate 16% or approximately 14,422 barrels of light crude oil would be evaporated/dispersed within 24 hours, with approximately 75,713 barrels remaining.

Spill Response MP 286, Well Location A	**Barrels of Oil**
WCD Volume	90,135
Less 16% natural evaporation/dispersion	14,422
Remaining volume	75,713

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.

W&T Offshore, Inc.'s Oil Spill Response Plan includes alternative response technologies such as dispersants and in-situ burn. Strategies will be decided by Unified Command based on an operations safety analysis, the size of the spill, weather and potential impacts. 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. If the conditions are favorable for in-situ burning, the proper approvals have been obtained and the proper planning is in place, in-situ burning of oil may be attempted. Slick containment 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 160,314 barrels. Temporary storage associated with skimming equipment equals 6,198 barrels. If additional storage is needed, an 80,000+ barrel storage barge, a 25,000 barrel storage barge, two 23,000 barrel storage barges, and one 20,000 barrel storage barge 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 Plaquemines 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 71,708 barrels. Temporary storage associated with skimming equipment equals 1,191 barrels. If additional storage is needed, a 47,000 barrel storage barge, a 23,000 barrel storage barge, and two 20,000 barrel storage barges may be mobilized and centrally located to provide temporary storage allowing the skimmers to stay in the area of operations as much as possible. Onshore response may include the deployment of shoreline boom on beach areas, or protection and sorbent boom on vegetated areas. Master Service Agreements with OMI Environmental and AMPOL will ensure access to 148,700 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. W&T Offshore, Inc.'s contract Spill Management Team has access to the applicable ACP(s) and GRP(s).

Based on the anticipated worst case discharge scenario, W&T Offshore, Inc. can be onsite with contracted oil spill recovery equipment with adequate response capacity to contain and recover surface hydrocarbons, and prevent land impact, to the maximum extent practicable, within an estimated 60 hours (based on the equipment's Effective Daily Recovery Capacity (EDRC)).

Initial Response Considerations

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

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

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

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

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

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

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

Offshore Response Actions

Equipment Deployment

Surveillance

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

Dispersant application assets

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

Containment boom

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

Oceangoing Boom Barge

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

In-situ Burn assets

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

Dedicated off-shore skimming systems
General

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

CGA HOSS Barge

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

CGA 95' Fast Response Vessels (FRVs)

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

CGA FRUs

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

T&T Koseq Skimming Systems

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

Storage Vessels

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

Vessels of Opportunity (VOO)

- Use W&T Offshore, Inc.'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): W&T Offshore, Inc. will take all possible measures to maximize the oil-to-skimmer encounter rate of all skimming systems, to include VOOs, as discussed in this section. VOOs will normally be placed within an On-water recovery unit as shown in figures below.

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

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

Tactical Overview

Mechanical Recovery – The FRU is designed to provide fast response skimming capability in the offshore and nearshore environment in a stationary or advancing mode. It provides a rated daily recovery capacity of 4,100 barrels. An additional boom reel with 440' of offshore boom can be deployed along with the FRU, and a second support vessel for boom towing, to extend the swath width when attached to the end of the fixed boom. The range and sustainability offshore is dependent on the VOO that the unit is placed on, but generally these can stay offshore for extended periods. The FRU works well independently or assigned with other on-water recovery assets in a task force. In either case, it is most effective when a designated aircraft is assigned to provide tactical direction to ensure the best placement in recoverable oil.
Maximum Sea Conditions – Under most circumstances the FRU can maintain standard oil spill recovery operations in 2' to 4' seas. Ultimately, the Coast Guard licensed Captain in charge of the VOO (with input from the CGAS Supervisor assigned) will be responsible to determine when the sea conditions have surpassed the vessel's safe operating capabilities.

Possible Task Force Configuration (Multiple VOOs can be deployed in a task force)
1 – VOO (100' to 165' Utility or Supply Vessel)
1 – Boom reel w/support vessel for towing
1 – Tank barge (offshore) for temporary storage
1 – Utility/Crewboat (supply)
1 – Designated spotter aircraft

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

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

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

Tactical Overview

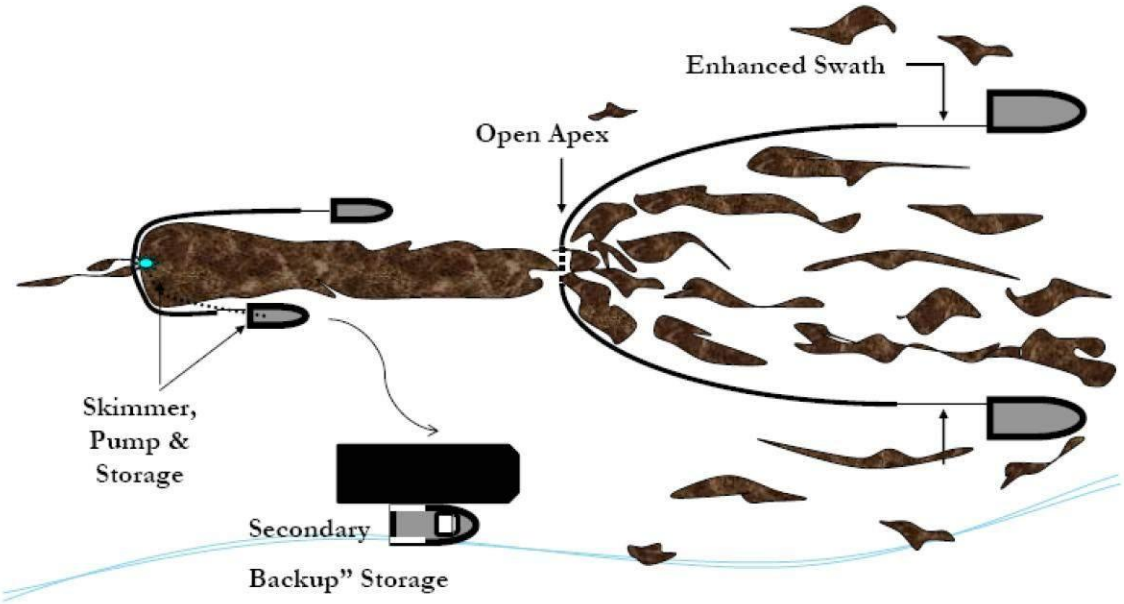
Mechanical Recovery – Deployed on large vessels of opportunity (VOO) the Koseq Rigid Sweeping Arms are high volume surge capacity deployed to increase recovery capacity at the source of a large oil spill in the offshore and outer nearshore environment of the Gulf of Mexico. They are highly mobile and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

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

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

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

1 – $\geq$ 200' Offshore Supply Vessels (OSV) with set of Koseq Arms
2 to 4 portable storage tanks (500 bbl)
1 – Modular Crane Pedestal System set (MCPS) or 30 cherry picker (crane) for deployment
1 – Tank barge (offshore) for temporary storage
1 – Utility/Crewboat (supply)
1 – Designated spotter aircraft
4 – Personnel (4 T&T OSRO)



Scattered oil is "caught" by two VOO and collected at the apex of the towed sea boom. The oil moves 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 W&T Offshore, Inc.'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 pf 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 W&T Offshore, Inc.'s WCD and information in the BOEM Oil Spill Risk Analysis Model (OSRAM) for the Central and Western Gulf of Mexico available on the BOEM website using 10 day impact. The results are tabulated below.

Area/Block	OCS-G	Launch Area	Land Segment and/or Resource	Conditional Probability (%) within 10 days
Drill, complete and mudline suspend Well Location A **MP 86, Well Location A** *41 miles from shore*	G34390	C53	Lafourche, LA **Plaquemines, LA** St. Bernard, LA Hancock & Harrison, MS Jackson, MS Mobile, AL Baldwin, AL Escambia, FL	1 **25** 9 1 2 2 2 1

WCD Scenario– <u>BASED ON WELL BLOWOUT DURING DRILLING OPERATIONS</u> (41 miles from shore)
75,713 bbls of light crude oil (Volume considering natural weathering)
API Gravity 41°

FIGURE 2 – Equipment Response Time to MP 286, Well Location A

Dispersants/Surveillance

Dispersant/Surveillance	Dispersant Capacity (gal)	Storage Capacity	Persons Req.	From	Hrs to Procure	Hrs to Loadout	Travel to site	Total Hrs
ASI								
Basler 67T	2000	NA	2	Houma	2	2	0.6	4.6
DC 3	1200	NA	2	Houma	2	2	0.8	4.8
DC 3	1200	NA	2	Houma	2	2	0.8	4.8
Aero Commander	NA	NA	2	Houma	2	2	0.6	4.6

Offshore Response

Offshore Equipment No Staging	EDRC	Storage Capacity	VOO	Persons Required	From	Hrs to Procure	Hrs to Loadout	Hrs to GOM	Travel to Spill Site	Hrs to Deploy	Total Hrs
CGA											
HOSS Barge	76285	4000	3 Tugs	5	Harvey	7	0	8	10	1	26
95' FRV	22885	249	NA	4	Leeville	2	0	2	6.5	0	10.5
95' FRV	22885	249	NA	4	Venice	2	0	2	4	0	8
Boom Barge (CGA-300) 42" Auto Boom (25000')	NA	NA	1 Tug 50 Crew	4 (Barge) 2 (Per Crew)	Leeville	4	0	6	18.5	1.5	30

Recovered Oil Storage No Staging	EDRC	Storage Capacity	VOO	Persons Required	From	Hrs to Procure	Hrs to Loadout	Hrs to GOM	Travel to Spill Site	Hrs to Deploy	Total Hrs
Kirby Offshore (available through contract with CGA)											
RO Barge	NA	80000+	1 Tug	6	Venice	48	0	2	10	0	60
Enterprise Marine Services LLC (available through contract with CGA)											
CTCo 2603	NA	25000	1 Tug	6	Amelia	32	0	2	26	0	60
CTCo 2604	NA	20000	1 Tug	6	Amelia	32	0	2	26	0	60
CTCo 2607	NA	23000	1 Tug	6	Amelia	32	0	2	26	0	60
CTCo 2608	NA	23000	1 Tug	6	Amelia	32	0	2	26	0	60

Offshore Equipment With Staging	EDRC	Storage Capacity	VOO	Persons Req.	From	Hrs to Procure	Hrs to Loadout	Travel to Staging	Travel to Site	Hrs to Deploy	Total Hrs
CGA											
FRU (1) + 100 bbl Tank (1)	4251	100	1 Utility	6	Galveston	2	2	12.7	6.7	1	24.4
FRU (1) + 100 bbl Tank (2)	4251	200	1 Utility	6	Harvey	2	2	2.1	6.7	1	13.8
FRU (1) + 100 bbl Tank (2)	4251	200	1 Utility	6	Aransas Pass	2	2	17.7	6.7	1	29.4
FRU (1) + 100 bbl Tank (2)	4251	200	1 Utility	6	Lake Charles	2	2	8	6.7	1	19.7
FRU (2) + 100 bbl Tank (2)	8502	400	2 Utility	12	Leeville	2	2	4.4	6.7	1	16.1
FRU (1) + 100 bbl Tank (2)	4251	200	1 Utility	6	Morgan City	2	2	4.9	6.7	1	16.6
FRU (2) + 100 bbl Tank (4)	8502	400	2 Utility	12	Venice	2	2	0	6.7	1	11.7
Hydro-Fire Boom	NA	NA	8 Utility	40	Harvey	2	4	2.1	6.7	6	20.8

Nearshore Response

Nearshore Equipment No Staging	EDRC	Storage Capacity	VOO	Persons Required	From	Hrs to Procure	Hrs to Loadout	Hrs to GOM	Travel to Spill Site	Hrs to Deploy	Total Hrs
CGA											
Trinity SWS	21500	249	NA	4	Vermilion	2	6	N/A	48	0	56
46' FRV	15257	65	NA	4	Venice	2	0	2	2.5	0	6.5
46' FRV	15257	65	NA	4	Morgan City	2	0	2	4.5	0	8.5
Enterprise Marine Services LLC (available through contract with CGA)											
CTCo 2605	NA	20000	1 Tug	6	Amelia	28	12	4	15	1	60
CTCo 2606	NA	20000	1 Tug	6	Amelia	28	12	4	15	1	60
CTCo 2609	NA	23000	1 Tug	6	Amelia	28	12	4	15	1	60
CTCo 5001	NA	47000	1 Tug	6	Amelia	28	12	4	15	1	60

Staging Area: Venice

Nearshore and Inland Skimmers 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	12.7	2	0	18.7
SWS Egmopol	1810	100	NA	3	Morgan City	2	2	4.9	2	0	10.9
SWS Marco	3588	20	NA	3	Lake Charles	2	2	8	2	0	14
SWS Marco	3588	20	NA	3	Leeville	2	2	4.4	2	0	10.4
SWS Marco	3588	20	NA	3	Venice	2	2	0	2	0	6
Rope Mop	77	2	0	3	Harvey	2	2	2.1	2	0	8.1
Foilex Skim Package (TDS 150)	1131	50	NA	3	Lake Charles	2	2	8	2	0	14
Foilex Skim Package (TDS 150)	1131	50	NA	3	Galveston	2	2	12.7	2	0	18.7
Foilex Skim Package (TDS 150)	1131	50	NA	3	Harvey	2	2	2.1	2	0	8.1
4 Drum Skimmer (Magnum 100)	680	100	1 Crew	3	Lake Charles	2	2	8	2	0	14
4 Drum Skimmer (Magnum 100)	680	100	1 Crew	3	Harvey	2	2	2.1	2	0	8.1
2 Drum Skimmer (TDS 118)	240	100	1 Crew	3	Lake Charles	2	2	8	2	0	14
2 Drum Skimmer (TDS 118)	240	100	1 Crew	3	Harvey	2	2	2.1	2	0	8.1

Staging Area: Venice

18" Shoreline Protection Boom	VOO	Persons Req.	Storage/Warehouse Location	Hrs to Procure	Hrs to Loadout	Travel to Staging	Travel to Deployment Site	Hrs to Deploy	Total Hrs
AMPOL (available though MSA)									
34,050' 18" Boom	13 Crew	26	New Iberia, LA	2	2	6	2	12	24
12,000' 18" Boom	7 Crew	14	Chalmette, LA	2	2	2.5	2	6	14.5
900' 18" Boom	1 Crew	2	Morgan City, LA	2	2	4.5	2	2	12.5
30,000' 18" Boom	13 Crew	26	Harvey, LA	2	2	2	2	12	20
1,700' 18" Boom	2 Crew	4	Venice, LA	2	2	0	2	2	8
16,000' 18" Boom	7 Crew	14	Port Arthur, TX	2	2	10	2	6	22
OMI Environmental (available through MSA)									
12,500' 18" Boom	6 Crew	12	New Iberia, LA	1	1	6	2	3	13
3,500' 18" Boom	2 Crew	4	Port Arthur, TX	1	1	10	2	3	17
4,850' 18" Boom	2 Crew	4	Belle Chasse, LA	1	1	2	2	3	9
8,000' 18" Boom	3 Crew	6	Port Allen, LA	1	1	5	2	3	12
2,000' 18" Boom	1 Crew	2	Houma, LA	1	1	4	2	3	11
2,500' 18" Boom	1 Crew	2	Morgan City, LA	1	1	5	2	3	12
1,600' 18" Boom	1 Crew	2	Gonzalez, LA	1	1	4	2	3	11
5,800' 18" Boom	5 Crew	10	Venice, LA	1	1	0	2	3	7
13,300' 18" Boom	5 Crew	10	Harvey, LA	1	1	2	2	3	9

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	2.1	1	2	9.1
Bird Scare Guns (24)	NA	NA	NA	2	Harvey	2	2	2.1	1	2	9.1
Bird Scare Guns (12)	NA	NA	NA	2	Galveston	2	2	12.7	1	2	19.7
Bird Scare Guns (12)	NA	NA	NA	2	Aransas Pass	2	2	17.7	1	2	24.7
Bird Scare Guns (48)	NA	NA	NA	2	Lake Charles	2	2	8	1	2	15
Bird Scare Guns (24)	NA	NA	NA	2	Leeville	2	2	4.4	1	2	11.4

Response Asset	Total
Offshore EDRC	160,314
Offshore Recovered Oil Storage	177,198
Nearshore / Shallow Water EDRC	71,708
Nearshore / Shallow Water Recovered Oil Storage	111,191

APPENDIX I: ENVIRONMENTAL MONITORING INFORMATION

I.1 Monitoring Systems

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

I.2 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.

I.3 Flower Garden Banks National Marine Sanctuary

Main Pass Block 286 is not located in the Flower Garden Banks National Marine Sanctuary; therefore, the requested information is not required in this EP.

APPENDIX J: LEASE STIPULATIONS INFORMATION

Development activities are subject to the following stipulations attached to Lease OCS-G 34390, Main Pass Block 286.

Pinnacle Trend Features

Lease Stipulation No. 2 defines the live bottom survey report requirement for these live bottom areas, which are defined as seagrass communities; those areas that contain biological assemblages consisting of sessile invertebrates living upon and attached to naturally occurring hard or rocky formations with rough, broken, or smooth topography; and areas where the lithotope favors the accumulation of turtles, fishes, or other fauna. The required Live Bottom Survey Report is enclosed with the Shallow Hazards Report.

Protected Species

Lease Stipulation No. 8 is meant to reduce the potential taking of marine protected species. W&T will operate in accordance with NTL 2007-G04, 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

APPENDIX K: ENVIRONMENTAL MITIGATION MEASURES INFORMATION

K.1 Mitigation Measures Taken to Minimize Impact to Marine and Coastal Environment

Activities proposed under this Initial EP will not affect the State of Florida; therefore this information is not included.

K.2 Incidental Takes

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

- NTL 2012-JOINT-G01, "Vessel Strike Avoidance and Injured/Dead Protected Species Reporting
- NTL 2015-G03, "Marine Trash and Debris Awareness and Elimination"
- NTL 2012-JOINT-G02, "Implementation of Seismic Survey Mitigation Measures and Protected Species Observer Program"

APPENDIX L: SUPPORT VESSELS AND AIRCRAFT INFORMATION

L.1 General

Provide information regarding the vessels (e.g., tug boats, anchor handling vessels, construction barges, lay barges, supply boats, crew boats) and aircraft to be used to support the proposed activities. If specific vessels have not yet been determined, use the maximum capacities, numbers and trip frequencies for the types of vessels you will use.

Type	*Maximum Fuel Tank Capacity*	*Maximum Number in Area at Any Time*	*Trip Frequency or Duration*
Tug Boats	1400 bbls	3	MOB and demobe
Crew Boat	600 bbls	1	1 trip per day
Supply Boat	2500 bbls	1	1-3 trips per week
Helicopter	383 gal	1	1 per day

The most practical, direct route from the shorebase as permitted by weather and traffic conditions will be utilized.

L.2 Diesel Oil Supply Vessels

Using the table below, provide additional information on the vessels you will use to supply diesel oil. If the specific fuel supply vessel(s) has not yet been determined, use the maximum size, fuel capacity, and trip frequency for the type of vessel you will use.

Size of Fuel Supply Vessel	*Capacity of Fuel Supply Vessel*	*Frequency of Transfers*	*Route Fuel Supply Vessel Will Take*
180' Supply Vessel	2500 bbls	1 per week	Direct route from Venice to Rig

L.3 Drilling Fluid Transportation

The activities proposed in this Initial EP do not affect the State of Florida; therefore, this information is not being provided.

L.4 Solid and Liquid Waste Transportation

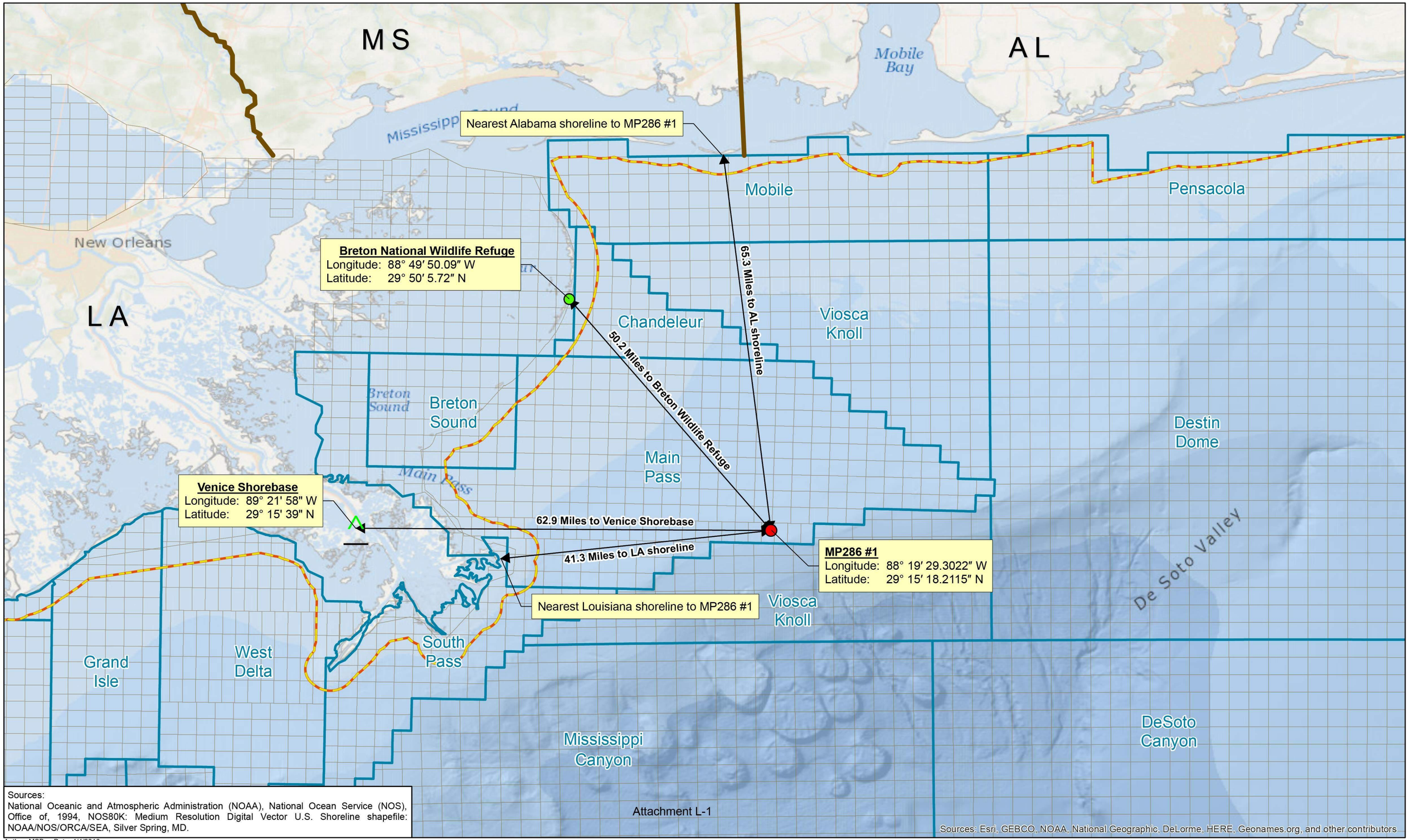
Information regarding the solid and liquid wastes generated as a result of these exploration activities are covered in Appendix F.

L.5 Vicinity Map

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

Main Pass 286 #1

Vicinity Map



Sources:
National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), Office of, 1994, NOS80K: Medium Resolution Digital Vector U.S. Shoreline shapefile: NOAA/NOS/ORCA/SEA, Silver Spring, MD.

Author: MSB Date: 4/4/2016

APPENDIX M: ONSHORE SUPPORT FACILITIES INFORMATION

M.1 General (Amended 05/27/16)

Provided in the table below is information regarding the onshore facilities that will be used to provide supply and service support for the proposed activities:

Name	*Location*	*Existing/New/Modified*
Grand Isle Shipyard (GIS) Dock	Venice, La.	Existing
RLC, LLC (Rotorcraft Leasing)	*Venice, La.*	*Existing*

M.2 Support Base Construction or Expansion

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

M.3 Waste Disposal

Information regarding the disposal of all wastes generated as a result of the activities proposed within this Initial EP are covered under Appendix F of this document.

APPENDIX N: COASTAL ZONE MANAGEMENT (CZMA) INFORMATION

State of Alabama

The OCS related oil and gas exploration activities having potential impact on the Alabama Coastal Zone are based on the location of the proposed facilities, access to those sites, best practical techniques for drilling locations, drilling equipment, guidelines for the prevention of adverse environmental effects, effective environmental protection, emergency plans and contingency plans. Alabama policies have been addressed below or are cross referenced to the appropriate sections of this EP plan:

Topic	*Cross Ref*	*Comments*
Coastal Resource Use Policy		
Coastal Development	Appendix M	Dock and port facilities in Louisiana will be used. There will be no new construction, dredging, or filling in Alabama state waters. There will be no new commercial development or capital improvements in Alabama's coastal zone, nor any employment affects as a result of the operations proposed under this plan.
Mineral Resource Exploration and Extraction	Appendix L	Proposed exploration activities will take place 65.3 miles from Alabama's coastline
Commercial Fishing		
Hazard Management	Appendix C	A Shallow Hazard Report has been submitted to BOEM in order to identify and assess seafloor and shallow geologic conditions in Main Pass Block 286.
Shoreline Erosion	Appendix L & O	Proposed exploration activities will take place 65.3 miles from Alabama's coastline
Recreation	Appendix O	
Transportation	Appendix M	
Natural Resource Protection Policies		
Biological Productivity	Appendix O	
Water Quality	Appendix O	
Water Resources	Appendix O	
Air Quality	Appendix O	
Wetlands and Submerged Grassbeds	Appendix O	
Beach and Dune Protection	Appendix O	
Wildlife Habitat	Appendix O	
Endangered Species	Appendix O	
Cultural Resources Protection	Appendix C	Main Pass Block 286 lies within a high probability zone for cultural resources; therefore, it requires an Archaeological Report be submitted for review. This report was submitted to BOEM.

A certificate of Coastal Zone Management Consistency for the State of Alabama is enclosed as ***Attachment N-1.***

STATE OF ALABAMA
COASTAL ZONE MANAGEMENT
CONSISTENCY CERTIFICATION
INITIAL EXPLORATION PLAN
LEASE OCS-G 34390, MAIN PASS BLOCK 286

The proposed activities described in detail in this OCS Plan comply with the State of Alabama's approved Coastal Management Program and will be conducted in a manner consistent with such Program.

W&T Offshore, Inc
Lessee or Operator

Valerie Land
Certifying Official

May 20, 2016
Date

State of Louisiana

Relevant enforceable policies were considered in certifying consistency for Louisiana. A certificate of Coastal Zone Management Consistency for the state of Louisiana is enclosed as ***Attachment N-2.***

STATE OF LOUISIANA
COASTAL ZONE MANAGEMENT
CONSISTENCY CERTIFICATION
INITIAL EXPLORATION PLAN
LEASE OCS-G 34390, MAIN PASS BLOCK 286

The proposed activities described in detail in this OCS Plan comply with the State of Louisiana's approved Coastal Management Program and will be conducted in a manner consistent with such Program.

W&T Offshore, Inc
Lessee or Operator

Laurie Land
Certifying Official

May 20, 2016
Date

APPENDIX O: ENVIRONMENTAL IMPACT ANALYSIS (EIA)

Environmental Resources	Impact Producing Factors (IPFs)					
	Emissions (air, noise, light, etc.)	Effluents (muds, cuttings, other discharges to the water column or seafloor	Physical Disturbances To the seafloor (rig or anchor placement, etc.)	Wastes Sent to Shore for Treatment Or disposal	Accidents (e.g. oil spills, Chemical spills, I-12S releases)	Discarded Trash & Debris
Site Specific at Offshore Location						
Designated Topographic Feature		(1)	(1)		(1)	
Pinnacle Trend Area; Live Bottoms		X(2)	X(2)		X(2)	
Eastern Gulf live bottoms		(3)	(3)		(3)	
Chemosynthetic 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)			X(7)			
Prehistoric archaeological sites			X (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)	
Wetlands					X(6)	
Shorebirds and coastal nesting birds					X(6)	
Coastal wildlife refuges					X	
Wilderness areas					X	
Other Resources						

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:
    a. 4-mile zone of the Flower Garden Banks, or the 3-mile zone of Stetson Bank;
    b. 1000-m, 1 mile, or 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;
    c. Essential Fish Habitat (EFH) criteria of 500 ft. from any no-activity zone; or
    d. 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 400 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.

Q.2 ANALYSIS

Site Specific Activities

Site-Specific activities in Main Pass Block 286 analyzed for this submittal include the drilling and completion of one well site, Well Location A. If successful, this well is planned as a subsea tie-back to an existing facility in another oil and gas lease block.

Designated Topographic Features

The activities planned in Main Pass Block 286 are not located near a designated topographic feature.

Pinnacle Trend Area Live Bottoms

Main Pass Block 286 has known pinnacle trend live bottoms to the east of the proposed activities. Potential IPFs on pinnacle trend live bottom areas include physical disturbances to the seafloor, effluents, and accidents.

- *Physical disturbances to the seafloor:* The proposed activities in Main Pass Block 286 will be conducted over 1,000 feet from the nearest pinnacle trend area; therefore, the placement of the drilling unit legs will not impact these areas.

- *Effluents:* Discharge effluents as a result of the activities proposed in Main Pass Block 286 will not be located within 200 feet of any known pinnacle trend areas.

- *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 W&T Offshore, Inc.'s Regional OSRP (refer to information submitted in **Appendix I).**

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.

Eastern Gulf Live Bottoms

Main Pass Block 286 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.

Chemosynthetic Communities

The activities proposed in this EP are located in approximately 294 feet water depths of ±300 feet. High-density chemosynthetic communities are found only in water depths greater than

1,312 feet (400 meters); therefore, W&T Offshore, Inc.'s proposed operations in Main Pass Block 286 would not cause impacts to chemosynthetic communities.

Water Quality

IPFs that could result in water quality degradation from the proposed operations in Main Pass Block 286 include disturbances to the seafloor, effluents and accidents.

- *Physical disturbances to the seafloor:* Bottom area disturbances resulting from the emplacement of drilling 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 to protect the environment. With the exception of produced water discharges, all other discharges are monitored prior to discharge by the static sheen test, visual sheen and solid observations, laboratory oil and grease analysis and toxicity testing. Following receipt of compliant sample results, the discharges proceed. Produced water discharges are observed daily and sampled monthly for oil and grease, to be analyzed by a third party laboratory. All data is reported to EPA and is accessed by BSEE during offshore NPDES inspections. Operational discharges are not expected to cause 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. W&T supports HWCG which maintains capping stacks and containment capabilities. W&T also participates in the annual source control drills with HWCG to be prepared in the event of a subsurface release of hydrocarbons. The Offshore Operators Committee formed a Joint Industry Project, which W&T participated in, to analyze the metals associated with water-based mud discharges. The results indicated metal concentrations in very low amounts that would not cause significant impacts to the environment. Between 2011 and 2014 the oil spill incidence rate for all OCS operations averaged 0.76 barrels spilled per million barrels produced. Additionally, W&T's average oil spill incidence rate is 0.193 for the same period, almost four times less than the OCS average for all operators. Historical performance shows that if a spill were to occur, the volume would be very low, in the hundredth of a gallon range. The activities proposed in this plan will be covered by W&T Offshore, Inc.'s Regional Oil Spill Response Plan (refer to information submitted in **Appendix I**).

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

Fisheries

IPFs that could cause impacts to fisheries as a result of the proposed operations in Main Pass Block 286 include physical disturbances to the seafloor, effluents and accidents.

- *Physical disturbances to the seafloor:* The emplacement of a structure or drilling rig is minimal loss of bottom trawling area to commercial fishermen. Pipelines can 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 3000 m of the discharge point, and are expected to have negligible on 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 W&T Offshore, Inc.'s Regional OSRP (refer to information submitted in **Appendix I**).

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

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 th upper slope in areas outside of anticyclones. IPFs that could cause impacts to marine mammals as a result of the proposed operations in Main Pass Block 286 include emissions, effluents, discarded trash and debris, and accidents.

- *Emissions:* Noise from drilling activities, support vessels and helicopters may elicit a startled reaction from marine mammals. This reaction may lead to disruption of a marine mammal's 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:* 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).

W&T Offshore, Inc. 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 OOC Marine Debris video (or Microsoft PowerPoint presentation), "Think About It". Thereafter, all personnel will view the marine trash and debris training video annually.

- *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 crews should use a reference guide to help identify the twenty-eight species of whales and dolphins, and the single species of manatee that may be encountered in the Gulf of Mexico OCS. Vessel crews 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 Marine Mammal and Sea Turtle Stranding Hotline at (800) 799-6637, or the Marine Mammal Stranding Network at (305) 862-2850. In addition, if the injury or death was caused by a collision with a contract vessel, the BOEMRE must be notified within 24 hours of the strike by email to protectedspecies@boemre.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 W&T Offshore, Inc.'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 the OSRP (refer to information submitted in **Appendix I**).

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

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 mostly 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 west of the river (Fritts et at, 1983b; Lohoefener et al., 1990). Deep waters are 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:* Entanglement in, and ingestion of, debris have caused the death and 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 regulation imposed by various agencies including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA). W&T Offshore, Inc. 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 OOC Marine Debris video (or Microsoft PowerPoint presentation), "Think About It.". Thereafter, all personnel will view the marine trash and debris training video annually.

- *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 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 Marine Mammal and Sea Turtle Stranding Hotline at (800) 799-6637, or the Marine Mammal Stranding Network at (305) 862-2850. In addition, if the injury or death was caused by a collision with a contract vessel, the BOEMRE must be notified within 24 hours of the strike by email to protectedspecies@boemre.gov. If the vessel is the responsible party, it is required to remain available to assist the respective salvage and

stranding network as needed.

As 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 W&T Offshore, Inc.'s Regional Oil Spill Response Plan (refer to information submitted in **Appendix I).**

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

Air Quality

The projected air emissions identified in **Appendix G** are not expected to affect the OCS air quality primarily due to distance to the shore or to any Prevention of Significant Deterioration Class I air quality area such as the Breton Wilderness Area. Main Pass Block 286 is within the 200-kilometer (124 mile) buffer for the Breton Wilderness Area and is 41 miles from the nearest shoreline in Louisiana. Air Emissions calculated for the activities proposed in this EP for Main Pass Block 286 are well below the acceptable allowance; therefore, no special mitigation, monitoring, or reporting is currently required.

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 condition, emission height, emission rates, and the distance of Main Pass Block 286 from the coastline. There are no other IPFs (including effluents, physical disturbances to the seafloor, wastes sent to shore for treatment or disposal) from the proposed activities, which could impact air quality.

Shipwreck Sites (known or potential)

IPFs that could impact known or unknown shipwreck sites as a result of the proposed operations in Main Pass Block 286 include disturbances to the seafloor. Main Pass Block 286 is not located in or adjacent to an OCS block designated by BOEM as having a high probability for occurrence of shipwrecks. W&T Offshore, Inc. 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.

Prehistoric Archaeological Sites

IPFs that could cause impacts to prehistoric archaeological sites as a result of the proposed operations in Main Pass Block 286 are physical disturbances to the seafloor and accidents (oil spills).

- *Physical disturbances to the seafloor:* Main Pass Block 286 is located within an area determined to have a high probability of Archaeological Prehistoric Cultural Resources.

Should W&T Offshore, Inc. encounter any resource that is prehistoric (or historic) in nature during our activities, we will report to BOEMRE and make every reasonable effort to preserve and protect that culture 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 W&T Offshore, Inc.'s Regional Oil Spill Response Plan (refer to information submitted in **Appendix I).**

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.

Q.2 Vicinity of Offshore Location

Essential Fish Habitat (EMI)

IPFs that could cause impacts to EFH as a result of the proposed operations in Main Pass Block 286 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 mud 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 W&T Offshore, Inc.'s Regional OSRP (refer to information submitted in **Appendix I**).

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

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 W&T Offshore, Inc.'s Regional OSRP (refer to information submitted in **Appendix I**).

- *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).

  W&T Offshore, Inc. 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 OOC Marine Debris video (or Microsoft PowerPoint presentation), "Think About It". Thereafter, all personnel will view the marine trash and debris training video annually. 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.

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 Title 30 CFR 250.490(c), sufficient information is included in **Appendix D** to justify our request that our proposed activities be classified by BOEM as H2S absent.

Q.3 Coastal and Onshore

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. Although relatively close to shore (41 miles), prevailing longshore currents would allow for sufficient time to implement an effective response; therefore, no significant adverse impact are expected. The activities proposed in this plan will be covered by W&T Offshore, Inc.'s Regional OSRP (refer to information submitted in **Appendix I).**

- *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). W&T Offshore, Inc. 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 OOC Marine Debris video (or Microsoft PowerPoint presentation), "Think About It". Thereafter, all personnel will view the marine trash and debris training annually.

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.

Wetlands

IPF's that could affect known wetlands would accidents resulting in an oil spill.

- *Accidents:* Oil spills could cause impacts to wetlands, however, it is unlikely that an oil spill would occur from the proposed activities (refer to **Item 5,** Water Quality). Although relatively close to shore (15 miles), prevailing long shore currents would allow for sufficient time to implement an effective response; therefore, no impacts are expected. The activities proposed in this plan will be covered by W&T Offshore, Inc.'s Regional OSRP (refer to information submitted in **Appendix I).**

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

Shore Birds and Coastal Nesting Birds

IPFs that could affect shore birds or coastal nesting birds would be accidents and discarded trash and debris.

- *Accidents:* Oil spills could cause impacts to shore birds and coastal nesting birds. However, it is unlikely that an oil spill would occur from the proposed activities (refer to **Item 5,** Water Quality). Although relatively close to shore (41 miles), prevailing longshore currents would allow for sufficient time to implement an effective response; therefore, no impacts are expected. The activities proposed in this plan will be covered by W&T Offshore, Inc.'s Regional OSRP (refer to information submitted in **Appendix I).**

- *Discarded trash and debris:* Coastal and marine birds are highly susceptible to entanglement in floating, submerged, and beached marine debris: specifically plastic. 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). W&T Offshore, Inc. 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 OOC Marine Debris video (or Microsoft PowerPoint presentation), "Think About It". Thereafter, all personnel will view the marine trash and debris training video annually.

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

Coastal Wildlife Refuges

The activities proposed in this Initial EP will be conducted 50 miles from the Breton Sound National Wildlife Refuge. IPFs that could affect this refuge would be accidents resulting in an oil spill.

- *Accidents:* An accidental oil spill from the proposed activities could cause impacts to coastal wildlife refuges such as the Breton Sound refuge. However, it is unlikely that an oil spill would occur from the proposed activities (refer to **Item 5,** Water Quality). Although relatively close to shore (41 miles), prevailing longshore currents would allow for sufficient time to implement an effective response; therefore, no impacts arc expected. The activities proposed in this plan will be covered by W&T Offshore, Inc.'s Regional OSRP (refer to information submitted in **Appendix I**).

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

Wilderness Areas

An accidental oil spill from the proposed activities could cause impacts to wilderness areas. However, it is unlikely than a spill would occur from the proposed activities (refer to **Item 5**, Water Quality). Although relatively close to shore (15 miles), prevailing long shore currents would allow for sufficient time to implement an effective response; therefore, no significant adverse impacts are expected. The activities proposed in this plan will be covered by W&T Offshore, Inc.'s Regional OSRP (refer to information submitted in **Appendix I**).

Other Environmental Resources Identified

(A) Impacts on your 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.

(B) Environmental Hazards: During the hurricane season, June through November, the Gulf of Mexico is impacted by an average of ten storms (39-73 mph winds), of which six become hurricanes (>74 mph winds). Due to its location in the gulf, Main Pass Block 108 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:

Drilling:

- Secure Well
- Secure jack-up rig
- Evacuate personnel

Drilling activities will be conducted in accordance with Title 30 CFR 250, Subparts C and D.

(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/Contact:
If you have any questions regarding this document, please contact:

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(I) References

American Petroleum Institute (API). 1989. Effects of offshore petroleum operations on cold water marine mammals: a literature review. Washington, DC: American Petroleum Institute. 385 pp.

Balazs, G.H. 1985. Impact of ocean debris on marine turtles: entanglement and ingestion. In: Shomura, R.S. and H.O. Yoshida, eds. Proceedings, Workshop on the Fate and Impact of Marine Debris, 26-29 November 1984, Honolulu, HI. U.S. Dept. of Commerce. NOAA Tech. Memo. NOAA-TM-NMFS-SWFC-54. pp 387-429.

Burke, C.J. and J.A. Veil 1995. Potential benefits from regulatory consideration of synthetic drilling muds. Environmental Assessment Division, Argonne National Laboratory, ANL/EAD/TM-43.

Daly, J.M. 1997. controlling the discharge of synthetic-based drilling fluid contaminated cuttings in waters of the United States. U.S. Environmental Protection Agency, Office of Water, Work Plan, June 24, 1997

Hansen, D.J. 1981_ The relative sensitivity of seabird populations in Alaska to oil production. U.S. Dept. of the interior, Bureau of Land Management, Alaska OCS Region, Anchorage. BLM-YID-ES-81-006-1792.

Laist, D.W. 1997. Impacts of marine debris. Entanglement of marine life in marine debris including a comprehensive list of species with entanglement and ingestion records. In: Coe, J.M. and D.B. Rogers, eds. Marine debris: sources, impacts, and solutions. New York, NY: Springer-Verla. Pp 99-139.

Majors, A.P. and A.C. Myrick, Jr, 1990. Effects of noise on animals: implications for dolphins exposed to seal bombs in the eastern tropical Pacific purse-seine fishery-an annotated bibliography. NOAA Administrative Report 1J-90-06.

Marine Mammal Commission. 1999. Annual report to Congress — 1998.

Platt, J.F., C.J. Lensink, W. Butler, M. Kendziorek, and D.R. Nysewander. 1990. Immediate impact of the Exxon Valdez oil spill on marine birds. The Auk. 107 (2): 387-397

Vauk, G.E. Hartwig, B. Reineking, and E. Vauk-Hentzelt. 1989. Losses of seabirds by oil pollution at the German North Sea coast. Topics in Marine Biology. Ros, J.D. ed. Scient. Mar. 53 (2-3): 749-754

Vermeer, K. and R. Vermeer, 1975 Oil Threat to Birds on the Canadian West Coast. The Canadian Field-Naturalist. 89: 278-298.

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

APPENDIX P: ADMINISTRATIVE INFORMATION

P.1 Exempted Information Description

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

P.2 Bibliography

Not applicable.