

UNITED STATES GOVERNMENT  
MEMORANDUM

July 12, 2018

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

Subject: Public Information copy of plan

Control # - S-07900

Type - Supplemental Development Operations Coordinations Document

Lease(s) - OCS-G10942 Block - 823 Viosca Knoll Area  
OCS-G16549 Block - 822 Viosca Knoll Area

Operator - W & T Energy VI, LLC

Description - Well A015 and Platform A

Rig Type - Platform

Attached is a copy of the subject plan.

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

Chiquita Hill  
Plan Coordinator

Site Type/Name	Botm Lse/Area/Blk	Surface Location	Surf Lse/Area/Blk
FIXED/A		4695 FNL, 695 FWL	G10942/VK/823
WELL/A015	G16549/VK/822	4685 FNL, 729 FWL	G10942/VK/823



**W&T OFFSHORE**

**SUPPLEMENTAL  
DEVELOPMENT OPERATIONS  
COORDINATION DOCUMENT**

**LEASES OCS-G 10942 & 16549  
VIOSCA KNOLL BLOCKS 823 & 822**

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Date Submitted: 05/31/2018	No. of Copies Submitted:	
Plan Control No.:	Proprietary:	1 & CD
Plans Coordinator:	Public:	1 & CD
<b>PUBLIC COPY</b>		



**SUPPLEMENTAL  
 DEVELOPMENT OPERATIONS COORDINATON DOCUMENT  
 LEASES OCS-G 10942 & 16549  
 VIOSCA KNOLL BLOCKS 823 & 822**

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## APPENDIX A - PLAN CONTENTS

### A.1 Plan Information Form

W&T Energy VI, LLC (W&T) hereby submits this Supplemental DOCD for the drilling, completion and production of *non-unit participating* Well No. A-15 from the existing surface location, Viosca Knoll 823 A platform (VIRGO) to a bottom hole location in Viosca Knoll Block 822 (Lease OCS-G 16549). This plan supplements the Initial DOCD (Plan Control No. N-6515) for Viosca Knoll Block 822 (Lease OCS-G 16549) and the Initial DOCD (Plan Control No. N-4318) for Viosca Knoll Block 823 (Lease OCS-G 10942).

No new structures or pipelines are being proposed under this DOCD.

In May of 2010 W&T Energy VI, LLC (GOM Company No. 03148) became designated operator of both Leases OCS-G 10942 and 16549, Viosca Knoll Blocks 823 and 822, to include the A platform (VIRGO) and all wells associated with it.

To date, the plans filed by W&T are as follows:

<i>Plan No.</i>	<i>Plan Type</i>	<i>Date Approved</i>	<i>Activities covered</i>
R-6050	Revised DOCD	01/30/2015	Revised for Air Emissions inventory
N-9722	Initial DOCD	02/17/2017	Drill, complete and produce Well No. A-13
N-9972	Initial DOCD	10/17/2017	Drill, complete and produce Wells No. A-12, A-14 and A-1 ST
R-6688	Revised DOCD	Pending	Revised Plan No. N9972 to change BHL of A-14 well

See attached OCS Plan Information Form BOEM-137, included as *Attachment A-1*, for further well information. Additionally, please see Appendix M for more details regarding the existing infrastructure in this field.

The service fee in the amount of \$4,238.00 has been paid through Pay.Gov as evidenced in the receipt included as *Attachment A-2*.

### A.2 Location

Included as *Attachment A-3* is the Well Location Plat depicting the existing surface location of Platform A in Viosca Knoll Block 823 and the proposed bottom hole (Proprietary copy only) of the new Well No. A-15 in Viosca Knoll Block 822.

Since this new well will be drilled and completed by a platform rig, there will be no placement of anchors in this area as a result of the activities provided for under this DOCD.

### A.3 Safety and Pollution Prevention Features

W&T will be utilizing the existing Nabors MODS 201 platform rig currently installed on the VIRGO platform. 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 BOEM/BSEE Notices to Lessees, and current policy making invoked by the BOEM, BSEE, 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.

<i>Type of Storage Tank</i>	<i>Type of Facility</i>	<i>Tank Capacity (bbls)</i>	<i>Number of Tanks</i>	<i>Total Capacity (bbls)</i>	<i>Fluid Gravity (API)</i>
Fuel Oil (Marine Diesel)	PF Rig	60+60+160+160	4	440 bbls	NA
Production	Platform A	500	2	1000 bbls	50

#### **A.5 Pollution Prevention Measures**

Activities proposed under this DOCD do not affect the State of Florida; therefore, this information is not being submitted.

#### **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.

OCS PLAN INFORMATION FORM

**General Information**

Type of Plan:	Exploration Plan: <input type="checkbox"/>	Development Operations Coordination Document: <input checked="" type="checkbox"/>
Company Name: W&T Energy VI, LLC		BOEM Operator Number: 03148
Address: 9 E. Greenway Plaza, Suite 300		Contact Person: Valerie Land
Houston, Texas		Phone Number: 713-624-7272
Email Address: vland@wt offshore.com		
If a service fee is required under 30 CFR 550.125(a), provide the	Amount Paid: \$4,238	Receipt No. 75496870685

**Project and Worst Case Discharge (WCD) Information**

Leases: G10942/G16549	Area: VK	Blocks: 823/822	Project Name (If applicable): NA
Objective(s):	Oil: <input type="checkbox"/>	Gas: <input checked="" type="checkbox"/>	Sulphur: <input type="checkbox"/>
	Salt: <input type="checkbox"/>	Onshore Support Base: Venice, La.	
Platform/Well Name: A	Total Volume of WCD: <b>8,768 bbs/day*</b>		API Gravity: 53°
Distance to closest land (Miles): 50	Volume from uncontrolled blowout: <b>18,662 bbs/day*</b>		
Have you previously provided information to verify the calculations and assumptions for your WCD?			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
If so, please provide the Plan Control No. of the EP or DOCD with which this information was provided: N-9722			
Do you propose to use new or unusual technology to conduct your activities?			<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Do you propose to use a vessel with anchors to install or modify a structure?			<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Do you propose any facility that will serve as a host facility for deepwater subsea development?			<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

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

Proposed Activity	Start Date	End Date	No. of Days
Development drilling – Well No. A015	11/13/2018	01/17/2019	65
Well completion – Well No. A015	01/18/2019	03/04/2019	45
Commence production of Well No. A015	03/05/2019	06/04/2028	3,375

*\*WCD Volume from previous DOCD's did not exceed 8,768 bbs/day; however, the new A015 well has a WCD volume that exceeds this volume*

**Description of Drilling Rig**

**Description of Structure**

<input type="checkbox"/> Jackup	<input type="checkbox"/> Drillship	<input type="checkbox"/> Caisson	<input type="checkbox"/> Tension Leg Platform
<input type="checkbox"/> Gorilla Jackup	<input checked="" type="checkbox"/> Platform Rig	<input checked="" type="checkbox"/> Fixed Platform	<input type="checkbox"/> Compliant Tower
<input type="checkbox"/> Semisubmersible	<input type="checkbox"/> Submersible	<input type="checkbox"/> SPAR	<input type="checkbox"/> Guyed Tower
<input type="checkbox"/> DP Semisubmersible	<input type="checkbox"/> Other (Attach Description)	<input type="checkbox"/> Floating Production System	<input type="checkbox"/> Other (Attach Description)
Drilling Rig Name (if known): H&P 107			

**Description of Lease Term Pipelines**

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

**ATTACHMENT A-1**



**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): A015				Previously reviewed under an approved EP or DOCD? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Is this an existing well or structure? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		If this is an existing well/structure, then list the API No. or Complex ID No.:			
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
WCD Info	For wells, volume of uncontrolled blowout (bbls/day): 18,662		For structures, volume of all storage and pipelines (bbls):		API Gravity of Fluid: _____°
Surface Location		Bottom-Hole Location		Completions (for multiple completions, enter separate lines)	
Lease No.	OCS-G 10942				
Area Name	Viosca Knoll				
Block No.	823				
Blockline Call	N/S Departure: 4685.95' FNL E/W Departure: 729.40' FWL				
Lambert X	1,267,929.220				
Lambert Y	10,592,275.190				
Latitude	29° 10' 55.024" N				
Longitude	88° 10' 03.493" W				
Water Depth: 1130'					
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)**

**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): A				Previously reviewed under an approved EP or DOCD? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Is this an existing well or structure? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
WCD Info	For wells, volume of uncontrolled blowout (bbls/day):		For structures, volume of all storage and pipelines (bbls):		API Gravity of Fluid: _____ °
Surface Location		Bottom-Hole Location		Completions (for multiple completions, enter separate lines)	
Lease No.	OCS-G 10942				
Area Name	Viosca Knoll				
Block No.	823				
Blockline Call	N/S Departure: 4695' FNL E/W Departure: 695' FWL				
Lambert X	1,267,895'				
Lambert Y	10,592,265'				
Latitude	29° 10' 54.91" N				
Longitude	88° 10' 03.87" W				
Water Depth: 1130'					
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

## Valerie Land

---

**From:** notification@pay.gov  
**Sent:** Tuesday, May 29, 2018 10:29 AM  
**To:** Valerie Land  
**Subject:** <https://protect-us.mimecast.com/s/Kb31CQWNLITDqXLhvx5KN> Payment Confirmation:  
BOEM Development/DOCD Plan - BD

Your payment has been submitted to [https://protect-us.mimecast.com/s/\\_CTMCR6MBmtKlGXINvOWO](https://protect-us.mimecast.com/s/_CTMCR6MBmtKlGXINvOWO) and the details are below. If you have any questions regarding this payment, please contact Brenda Dickerson at (703) 787-1617 or [BseeFinanceAccountsReceivable@bsee.gov](mailto:BseeFinanceAccountsReceivable@bsee.gov).

Application Name: BOEM Development/DOCD Plan - BD  
[https://protect-us.mimecast.com/s/\\_CTMCR6MBmtKlGXINvOWO](https://protect-us.mimecast.com/s/_CTMCR6MBmtKlGXINvOWO) Tracking ID: 269VCDRB  
Agency Tracking ID: 75496870685  
Transaction Type: Sale  
Transaction Date: 05/29/2018 11:29:12 AM EDT

Account Holder Name: Steven Hamm

Transaction Amount: \$4,238.00  
Card Type: AmericanExpress  
Card Number: \*\*\*\*\*1613

Region: Gulf of Mexico  
Contact: Valerie Land 713-624-7272  
Company Name/No: W&T Energy VI, LLC, 03148  
Lease Number(s): 10942, 16549, , ,  
Area-Block: Viosca Knoll VK, 823: , 822: , : , : ,  
Type-Wells: Supplemental Plan, 1

THIS IS AN AUTOMATED MESSAGE. PLEASE DO NOT REPLY.

**ATTACHMENT A-2**

PROP A-14  
21,221'

# VK 822 OCS-G-16549

A-10  
13,390'

A-9  
3,579'

A-1  
13,312'

A-10ST  
16,770'

A-8  
12,826'

A-4  
16,580'

A-2  
16,440'

A-11  
14,562'

#A-15  
Surface Location  
X = 1,267,929.220  
Y = 10,592,275.190  
Lat = 29° 10' 55.024" N  
Long = 88° 10' 03.493" W  
4685.95' FNL & 729.40' FWL OF VK823



**W&T OFFSHORE**

**VIOSCA KNOLL BLOCKS 822/823**  
OFFSHORE LOUISIANA

**Proposed A15**  
**Location Plat**

Date: 5/5/18



ATTACHMENT A-3

## **APPENDIX B - GENERAL INFORMATION**

### **B.1 Applications and Permits**

The following additional permits and applications as detailed in the table below are required prior to the start-up of our proposed activities:

<b><i>Application/Permit</i></b>	<b><i>Agency</i></b>
Application for Permit to Drill (APD)	Bureau of Safety and Environmental Enforcement

### **B.2 Drilling Fluids**

This information is not required for the activities as proposed under this DOCD.

### **B.3 Production**

Proprietary Copy only.

### **B.4 Oil Characteristics**

This information is not required for the operations as proposed in this DOCD.

### **B.5 New or Unusual Technology**

W&T does not propose to use any new or unusual technology to carry out the proposed development activities.

### **B.6 Bonding Statement**

The bond requirements for the activities proposed in this DOCD are satisfied by a \$3,000,000.00 areawide development bond, furnished and maintained according to 30 CFR 256, Subpart I; and NTL No. 2000-G16, "Guidelines for General Lease Surety Bonds". Should additional financial assurance be required, W&T Energy VI, LLC (GOM No. 03148) will adhere to the guidelines in Notice to Lessees (NTL) 2016-N01.

### **B.7 Oil Spill Financial Responsibility (OSFR)**

W&T Energy VI, LLC, (GOM Company No. 03148) has demonstrated oil spill financial responsibility for the facilities proposed in this DOCD according to 30 CFR Part 253; and NTL No. 99-N01, "Guidelines for Oil Spill Financial Responsibility for Covered Facilities".

### **B.8 Deepwater Well Control Statement**

W&T Energy VI, LLC (GOM Company No. 03148) has the financial capability to drill a relief well and conduct other emergency well control operations.

### **B.9 Suspension of Production**

Leases OCS-G 10942 and 16549 are being held by ongoing production.

### **B-10 Blowout Scenario**

The worst case blowout scenario would be when the primary and secondary well control is lost while drilling the VK 823 A15 well. If BOP failure occurs, oil could potentially be flowing into the atmosphere at an estimated rate of 18,662 bbls of oil/day.

If a blowout scenario occurred, all workers on the drilling rig would follow pre-planned abandonment procedures and be in their respective deployed lifeboats. If uncontrolled flow occurred and did not ignite, then it is possible that hydrocarbons could enter the atmosphere at aforementioned rates. If the hydrocarbons ignited, then most of the hydrocarbons would burn off and the actual hydrocarbons entering the water would be extremely small.

The most likely blowout scenario would probably occur while tripping the drill string out of the hole and either no drill pipe is in the hole or only a small amount. Assuming drill pipe is in the hole, then both sets of pipe rams and shear/blind 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 to close. This scenario is used in the worst-case discharge calculations.

### **Bridging Tendency**

If a blowout scenario occurred, this well would have a high probability of bridging off. Typically, young formations in the Gulf of Mexico will produce sand and/or collapse if the differential pressure across the sand is very high.

### **Surface Intervention**

In the early stages of a well control scenario, closing the annular or rams BOPs and installing or closing a drill string check valve would be the first line of defense. Attempts would be made to circulate kill weight mud down the drill pipe and out the choke manifold per standard well control procedures. If circulation down the drill pipe is not possible or if an insufficient amount of drill pipe is in the hole, then the next step is to bullhead kill weight mud down the drill pipe and annulus. Depending on the circumstances and seriousness of the problem, there may be other options. It may be possible to rig up a snubbing unit and snub drill pipe into the hole to a sufficient depth to circulate kill weight mud around and kill the well. The ability to control and/or kill the well is very high.

### **Drilling a Relief Well**

The VK 823 A platform is located in 1,130 feet of water. Should a blowout occur and the platform is destroyed, along with the platform rig installed on top of it, we would need to contract a moored semi-submersible rig and position it near the platform site. A jack-up rig would not be feasible to drill the relief well.

There are 27 semi-submersible rigs operating in the Gulf of Mexico at this time. Of that number, probably 50% or 13 rigs could be made available within a week to drill a relief well. Mobilizing the rig to location is estimated at 10 days and the actual drilling would require  $\pm 65$  days. The estimated total time to contract a rig, MOB the rig to location, drill the relief well, and kill the blowout well is estimated at  $\pm 80$  days. Only a certain type of rig can be used to drill the relief well. Total volume of potential spill into the waters could be 1,492,960 bbls.

<i>Action Item</i>	<i>No. of Days</i>
1. Acquire rig	5
2. Time to move rig onsite	10
3. Drill relief well	65
<b>TOTAL TIME TO DRILL RELIEF WELL</b>	<b>80</b>

### **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.

- Analysis of offset wire line logs, evaluation of seismic, geologic interpretation, offset mud weights and offset kick information, BHP information.
  - Under pressured or depleted formations should be identified.
  - Analysis of the area and regional fracture gradient (FG) information which would include offset shoe tests and leak off data to verify FG model.
  - Optimize casing program which would include accepted industry safety factors when designing casing strings.
- Preparation of a detailed drilling program. Most programs include the following:
    - Mud Program
    - Cement Program
    - Hydraulic Program
    - BHA and Directional Program
    - Logging Program
    - Detail procedures outlining operational programs through each hole section.
- Onsite surveillance consisting of the following:
    - Mud logging with gas, lithology, “d” exponent or other ROP/ pressure computations.
    - Installation and monitoring of pit and flowline devices for the monitoring of fluid levels in the pits and changes in flow rates.
    - Real time resistivity/GR LWD and pore pressure analysis by LWD specialist.
    - Foremen experienced in Gulf of Mexico drilling.
- Office geological and engineering supervision.
    - Real time analysis of LWD information for geological correlations.
    - Real time or daily analysis of LWD for pressure.
- Onsite application of good drilling practices.
    - Keep hole full on trips.
    - Monitoring hole fill-ups via a trip tank.
    - Control drilling in selected cases to prevent overloading the hole with cuttings or formation gas.
    - Minimize swab pressures while tripping.
    - Minimize surge pressures while running casing or drill string.
    - Maintaining proper mud rheologies to help minimize estimated circulating density and surge pressures and will also aid in cleaning of the hole of cuttings.
    - Know the warning signs of an influx and stay alert to what the hole is “telling”.

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.
  - The equipment will be well maintained.
  - The equipment will be tested to BOEM specifications.
  - The equipment will be sized for anticipated pressures, hole sizes and accumulator fluid volumes for 100% closure of the BOP.
- Well designs where there is adequate kick tolerance.
- Proper training of crews and rig personnel.

## **APPENDIX C - GEOLOGICAL AND GEOPHYSICAL INFORMATION**

### **C.1 Geological Description**

Proprietary Copy only.

### **C.2 Structure Contour Maps**

Proprietary Copy only.

### **C.3 Interpreted 3-D Seismic Line**

Proprietary Copy only.

### **C.4 Geological Structure Cross-Section**

Proprietary Copy only.

### **C.5 Shallow Hazards Report**

The proposed new well is being drilled from an existing surface location; therefore, a Shallow Hazards Report is not required.

### **C.6 Shallow Hazards Assessment**

The proposed new well is being drilled from an existing surface location; therefore, a Shallow Hazards Assessment is not required.

### **C.7 High-Resolution Seismic Lines**

The proposed new well is being drilled from an existing surface location; therefore, High Resolution Seismic Lines are not required.

### **C.8 Stratigraphic Column**

A generalized biostratigraphic/lithostratigraphic column depicting each well from the seafloor to the total depth is not required for the operations provided for in this DOCD.

### **C.9 Time vs. Depth Table**

Sufficient well control data for the target areas proposed in this DOCD exists; therefore, seismic time versus depth tables for the proposed well locations are not required.



## **APPENDIX D -HYDROGEN SULFIDE INFORMATION**

### **D.1 Concentration**

W&T does not anticipate encountering any H<sub>2</sub>S during the proposed operations.

### **D.2 Classification**

In accordance with Title 30 CFR 250.490(c), W&T requests that the operations proposed in this DOCD be classified by the MMS as H<sub>2</sub>S absent.

## **APPENDIX E - MINERAL RESOURCE CONSERVATION INFORMATION**

### **E.1 Technology & Reservoir Engineering Practices and Procedures**

Proprietary Copy only.

### **E.2 Technology and Recovery Practices and Procedures**

Proprietary Copy only.

### **E.3 Reservoir Development**

Proprietary Copy only.

## **APPENDIX F - BIOLOGICAL, PHYSICAL AND SOCIOECONOMIC INFORMATION**

### **F.1 Deepwater Benthic Communities**

Although activities proposed in this DOCD include drilling a new well in a water depth greater than 984 feet, it will be drilled from a platform rig located on the existing Platform A in Viosca Knoll Block 823. There will be no seafloor disturbing activities as a result of these activities. Additionally, there are no known benthic communities within 500 feet of the existing surface location.

### **F.2 Topographic Features (Banks)**

Activities proposed in this DOCD do not fall within 305 meters (1,000 feet) of any designated “no activity zone”; therefore, no map is required.

### **F.3 Topographic Features Statement (Shunting)**

Since the activities proposed in this DOCD do not fall within 1,000 feet of any designated “no activity zone”, no shunting operations will be conducted during the drilling of the proposed Well No. A-15.

### **F.4 Live Bottoms (Pinnacle Trend) Map**

Viosca Knoll Block 823 is not located within 61 meters (200 feet) of any pinnacle trend feature; therefore a separate bathymetric map is not required.

### **F.5 Live Bottoms (Low Relief) Stipulation**

Viosca Knoll Block 823 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.

### **F.6 Potentially Sensitive Biological Features**

Viosca Knoll Block 823 is not located within 30 meters (100 feet) of potentially sensitive biological features; therefore, biologically sensitive area maps are not required.

### **F.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 proposed 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.

### **F.9 Archaeological Report**

The activities proposed in this DOCD are being conducted from an existing surface location in Viosca Knoll Block 823; therefore, an Archaeological Report is not being submitted.

### **F.10 Air and Water Quality Information**

The proposed activities in this DOCD do not affect the State of Florida; therefore, this section is not required.

**F.11 Socioeconomic Information**

The proposed activities in this DOCD do not affect the State of Florida; therefore, this section is not required.

## **APPENDIX G - WASTES AND DISCHARGES INFORMATION**

### **G.1 Projected Generated Wastes to be Discharged Overboard**

All discharges associated with operations proposed in this Development Plan will be in accordance with regulations implemented by Bureau of Ocean Energy Management (BOEM), U. S. Coast Guard (USCG) and the U.S. Environmental Protection Agency (EPA). These discharged materials are detailed in Table 1 included at the end of this section as *Attachment G-1*.

### **G.2 Projected Generated Wastes to be Transported to Shore for Disposal**

Any and all projected generated wastes that would be transported to shore for disposal are detailed in Table 2 included at the end of this section at *Attachment G-2*.

**TABLE 1. WASTES YOU WILL GENERATE, TREAT AND DOWNHOLE DISPOSE OR DISCHARGE TO THE GOM**

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

Projected generated waste			Projected ocean discharges		Projected Downhole Disposal
Type of Waste	Composition	Projected Amount	Discharge rate	Discharge Method	Answer yes or no
<b>Will drilling occur ? If yes, you should list muds and cuttings</b>					
Water-based drilling fluid	WBM, cuttings, & cement	2500 bbls	10 bbls/hr	discharge overboard	No
Cuttings wetted with water-based fluid	(see above)	(see above)	10 bbls/hr	discharge overboard	No
Cuttings wetted with synthetic-based fluid	NA	NA	NA	NA	NA
<b>Will humans be there? If yes, expect conventional waste</b>					
Domestic waste	Domestic waste from galley/living quarters	930 gals	30 gal/person	Remove floating solids and discharge overboard	No
Sanitary waste	Sanitary waste from living quarters	620 gals	20 gal/person	Chlorinate through Red Fox unit and discharge freshwater overboard	No
<b>Is there a deck? If yes, there will be Deck Drainage</b>					
Deck Drainage	Rainwater	0 - 4000 gals	0-97 gals/day	Remove oil/grease, test, and discharge overboard	No
<b>Will you conduct well treatment, completion, or workover? Yes, but not discharged overboard</b>					
Well treatment fluids	NA	NA	NA	NA	NA
Well completion fluids	Calcium Chloride	300 bbls	10 bbls/day	Discharge used fluids overboard and return excess for credit	No
Workover fluids	NA	NA	NA	NA	NA
<b>Miscellaneous discharges. If yes, only fill in those associated with your activity.</b>					
Desalinization unit discharge	NA	NA	NA	NA	NA
Blowout prevent fluid	NA	NA	NA	NA	NA
Ballast water	NA	NA	NA	NA	NA
Bilge water	NA	NA	NA	NA	NA
Excess cement at seafloor	NA	NA	NA	NA	NA
Fire water	NA	NA	NA	NA	NA
Cooling water	NA	NA	NA	NA	NA
<b>Will you produce hydrocarbons? If yes fill in for produced water.</b>					
Produced water	NA	NA	NA	NA	NA
<b>Please enter individual or general to indicate which type of NPDES permit you will be covered by?</b>			GMG 290382		
NOTE: If you will not have a type of waste for the activity being applied for, enter NA for all columns in the row.			NOTE: All discharged wastes should comply with the requirements of the NPDES permit.		

**TABLE 2. WASTES YOU WILL TRANSPORT AND /OR DISPOSE OF ONSHORE**

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

Projected generated waste		Solid and Liquid Wastes transportation		Waste Disposal		
Type of Waste	Composition	Transport Method	Name/Location of Facility	Amount	Disposal Method	
<b>Will drilling occur ? If yes, fill in the muds and cuttings.</b>						
Oil-based drilling fluid or mud	NA	NA	NA	NA	NA	NA
Synthetic-based drilling fluid or mud	NA	NA	NA	NA	NA	NA
Cuttings wetted with Water-based fluid	NA	NA	NA	NA	NA	NA
Cuttings wetted with Synthetic-based fluid	NA	NA	NA	NA	NA	NA
Cuttings wetted with oil-based fluids	NA	NA	NA	NA	NA	NA
<b>Will you produce hydrocarbons? If yes fill in for produced sand.</b>						
Produced sand	NA	NA	NA	NA	NA	NA
<b>Will you have additional wastes that are not permitted for discharge? If yes, fill in the appropriate rows.</b>						
Trash and debris	Paper and Plastic	Garbage bags on Supply or Crew Boat	Environment Operators, Venice, La.	2150 cu.ft./well	Landfill	
Used oil	Oil Drain Tank	550 tote Tank on Supply Boat	Aaron Oil, Venice, LA	1080 gals/well	Recycled	
Wash water	NA	NA	NA	NA	NA	
Chemical product wastes	Batteries, Paint, Solvents	Storage bins on Supply Boat	Omega Waste Management, Patterson, La.	65 lbs/yr	Hazardous Waste	
Completion Fluid	Calcium Chloride	Support Vessel	Newpark Services, Venice, La.	400 bbls/well	Recycled	

## APPENDIX H - AIR EMISSIONS INFORMATION

### H.1 Emissions Worksheets and Screening Questions

#### Screening Questions

Screen Procedures for DOCD's	Yes	No
Is any calculated Complex Total (CT) Emission amount (tons) associated with your proposed development activities more than 90% of the amounts calculated using the following formulas: $CT = 3400D^{2/3}$ for CO, and $CT = 33.3D$ for the other air pollutants (where D = distance to shore in miles)?		X
Do your emission calculations include any emission reduction measures or modified emission factors?		X
Does or will the facility complex associated with your proposed development and production activities process production from eight or more wells?	X	
Do you expect to encounter H <sub>2</sub> S 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 development and production activities located within 25 miles (40 kilometers) from shore?		X
Are your proposed development and production activities located within 124 miles (200 kilometers) of the Breton Wilderness Area?	X	

Summary information regarding the peak year emissions that will be generated by and associated with the Plan Emissions and Complex Total Emissions are provided in the table below. This information is compiled on the summary form of the **two** sets of worksheets, which are included as *Attachments H-1* and *H-2*.

Air Pollutant	Plan Emission Amounts (tons)	Calculated Exemption Amounts (tons)	Calculated Complex Total Emission Amounts (tons)
Carbon Monoxide (CO)	27.29	46452.22	148.90
Particular matter (PM)	3.64	1681.65	5.99
Sulphur dioxide (SO <sub>2</sub> )	16.69	1681.65	25.69
Nitrogen oxides (NO <sub>x</sub> )	125.08	1681.65	968.98
Volatile organic compounds (VOC)	3.75	1681.65	294.60

**NOTE:** *Although W&T will be utilizing the Nabors MODS 201 platform rig, the Air Quality spreadsheets use the worst case platform rig emissions volumes to prepare this report. This is done in case there is a change to the rig at some future date.*

This information was calculated by: Valerie Land,  
Regulatory Manager  
(713) 624-7272  
[vland@wt offshore.com](mailto:vland@wt offshore.com)



**DOCD AIR QUALITY SCREENING CHECKLIST**

OMB Control No. 1010-0151  
OMB Approval Expires: 12/31/14

<b>COMPANY</b>	W&T Energy VI, LLC
<b>AREA</b>	VK
<b>BLOCK</b>	823
<b>LEASE</b>	G10942
<b>PLATFORM</b>	A
<b>WELL</b>	A-15
<b>COMPANY CONTACT</b>	Valerie Land
<b>TELEPHONE NO.</b>	713-624-7272
<b>REMARKS</b>	Drill, complete & produce 1 well

**PLAN EMISSIONS**

<b>LEASE TERM PIPELINE CONSTRUCTION INFORMATION:</b>		
<b>YEAR</b>	<b>NUMBER OF PIPELINES</b>	<b>TOTAL NUMBER OF CONSTRUCTION DAYS</b>
1999	0	
2000		
2001		
2002		
2003		
2004		
2005		
2006		
2007		
2008		
2009		

**ATTACHMENT H-1**

**AIR EMISSIONS CALCULATIONS - FIRST YEAR**

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL	CONTACT	PHONE	REMARKS									
W&T Energy VI, LLC	VK	823	G10942	A	A-15	Valerie Land	713-624-7272	#REF!									
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	6635	320.4705	7691.29	24	49	4.68	21.45	160.76	4.82	35.07	2.75	12.62	94.53	2.84	20.62	
	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)	2064	99.6912	2392.59	6	14	1.45	6.67	50.01	1.50	10.91	0.06	0.28	2.10	0.06	0.46	
	VESSELS>600hp diesel(supply)	2064	99.6912	2392.59	10	14	1.45	6.67	50.01	1.50	10.91	0.10	0.47	3.50	0.11	0.76	
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		
PIPELINE INSTALLATION	PIPELINE LAY BARGE diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	SUPPORT VESSEL diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	PIPELINE BURY BARGE diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	SUPPORT VESSEL diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSELS>600hp diesel(crew)	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSELS>600hp diesel(supply)	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
FACILITY 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	
PRODUCTION	RECIP.<600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	RECIP.>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	SUPPORT VESSEL diesel	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	
	TURBINE nat gas	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	RECIP.2 cycle lean nat gas	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	RECIP.4 cycle lean nat gas	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	RECIP.4 cycle rich nat gas	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	BURNER nat gas	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	MISC.	BPD	SCF/HR	COUNT													
	TANK-	0			0	0				0.00	0.00				0.00	0.00	
	FLARE-		0		0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	
	PROCESS VENT-				0	0				0.00	0.00				0.00	0.00	
	FUGITIVES-			0.0		0				0.00	0.00				0.00	0.00	
GLYCOL STILL VENT-		0		0	0				0.00	0.00				0.00	0.00		
DRILLING	OIL BURN	0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
WELL TEST	GAS FLARE		0		0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	
<b>2018 YEAR TOTAL</b>							<b>7.59</b>	<b>34.80</b>	<b>260.78</b>	<b>7.82</b>	<b>56.90</b>	<b>2.91</b>	<b>13.36</b>	<b>100.13</b>	<b>3.00</b>	<b>21.85</b>	
<b>EXEMPTION CALCULATION</b>	<b>DISTANCE FROM LAND IN MILES</b>											<b>1681.65</b>	<b>1681.65</b>	<b>1681.65</b>	<b>1681.65</b>	<b>46452.22</b>	
	50.5																

**ATTACHMENT H-1 (cont'd)**

AIR EMISSIONS CALCULATIONS - SECOND YEAR

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL	CONTACT	PHONE	REMARKS								
W&T Energy VI, LLC	VK	823	G10942	A	A-15	Valerie Land	713-624-7272	#REF!								
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	6635	320.4705	7691.29	24	61	4.68	21.45	160.76	4.82	35.07	3.42	15.70	117.68	3.53	25.67
	PRIME MOVER>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	PRIME MOVER>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	PRIME MOVER>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	BURNER diesel	0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	AUXILIARY EQUIP<600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS>600hp diesel(crew)	2064	99.6912	2392.59	6	17	1.45	6.67	50.01	1.50	10.91	0.07	0.34	2.55	0.08	0.56
	VESSELS>600hp diesel(supply)	2064	99.6912	2392.59	10	17	1.45	6.67	50.01	1.50	10.91	0.12	0.57	4.25	0.13	0.93
Transport Vessel	VESSELS>600hp diesel(supply)	2064	99.6912	2392.59	8	3	1.45	6.67	50.01	1.50	10.91	0.02	0.08	0.60	0.02	0.13
PIPELINE INSTALLATION	PIPELINE LAY BARGE diesel	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SUPPORT VESSEL diesel	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	PIPELINE BURY BARGE diesel	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SUPPORT VESSEL diesel	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS>600hp diesel(crew)	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS>600hp diesel(supply)	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FACILITY INSTALLATION	DERRICK BARGE diesel	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MATERIAL TUG diesel	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS>600hp diesel(crew)	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS>600hp diesel(supply)	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PRODUCTION	RECIP.<600hp diesel	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	RECIP.>600hp diesel	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SUPPORT VESSEL diesel	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TURBINE nat gas	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	RECIP:2 cycle lean nat gas	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	RECIP:4 cycle lean nat gas	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	RECIP:4 cycle rich nat gas	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	BURNER nat gas	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MISC.	BPD	SCF/HR	COUNT												
	TANK-	0			0	0				0.00	0.00			0.00		0.00
	FLARE-		0		0	0		0.00	0.00	0.00	0.00		0.00	0.00		0.00
	PROCESS VENT-		0		0	0				0.00	0.00			0.00		0.00
	FUGITIVES-			0.0		0				0.00	0.00			0.00		0.00
	GLYCOL STILL VENT-		0		0	0				0.00	0.00			0.00		0.00
DRILLING	OIL BURN	0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WELL TEST	GAS FLARE		0		0	0		0.00	0.00	0.00	0.00		0.00	0.00		0.00
<b>2019 YEAR TOTAL</b>							<b>9.04</b>	<b>41.48</b>	<b>310.79</b>	<b>9.32</b>	<b>67.81</b>	<b>3.64</b>	<b>16.69</b>	<b>125.08</b>	<b>3.75</b>	<b>27.29</b>
<b>EXEMPTION CALCULATION</b>	<b>DISTANCE FROM LAND IN MILES</b>											<b>1681.65</b>	<b>1681.65</b>	<b>1681.65</b>	<b>1681.65</b>	<b>46452.22</b>
	50.5															

ATTACHMENT H-1 (cont'd)

### AIR EMISSIONS CALCULATIONS

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL
W&T Energy VI	VK	823	G10942	A	A-15
Year	Emitted Substance				
	PM	SOx	NOx	VOC	CO
2018	2.91	13.36	100.13	3.00	21.85
2019	3.64	16.69	125.08	3.75	27.29
Allowable	1681.65	1681.65	1681.65	1681.65	46452.22

ATTACHMENT H-1 (cont'd)

**DOCD AIR QUALITY SCREENING CHECKLIST**

OMB Control No. 1010-0151  
OMB Approval Expires: 12/31/14

<b>COMPANY</b>	W&T Energy VI, LLC
<b>AREA</b>	VK
<b>BLOCK</b>	823/822
<b>LEASE</b>	G10942/G16549
<b>PLATFORM</b>	A
<b>WELL</b>	A-15
<b>COMPANY CONTACT</b>	Valerie Land
<b>TELEPHONE NO.</b>	713-624-7272
<b>REMARKS</b>	Drill, complete & produce 1 well

**COMPLEX TOTAL EMISSIONS**

<b>LEASE TERM PIPELINE CONSTRUCTION INFORMATION:</b>		
<b>YEAR</b>	<b>NUMBER OF PIPELINES</b>	<b>TOTAL NUMBER OF CONSTRUCTION DAYS</b>
1999	0	
2000		
2001		
2002		
2003		
2004		
2005		
2006		
2007		
2008		
2009		

**ATTACHMENT H-2**

AIR EMISSIONS CALCULATIONS - FIRST YEAR

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL	CONTACT					PHONE	REMARKS					
W&T Energy VI, LLC	VK	823/822	G10942/G16545	A	A-15	Valerie Land					713-624-7272	#REF!					
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	6635	320.4705	7691.29	24	49	4.68	21.45	160.76	4.82	35.07	2.75	12.62	94.53	2.84	20.62	
	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)	2064	99.6912	2392.59	6	14	1.45	6.67	50.01	1.50	10.91	0.06	0.28	2.10	0.06	0.46	
	VESSELS>600hp diesel(supply)	2064	99.6912	2392.59	10	14	1.45	6.67	50.01	1.50	10.91	0.10	0.47	3.50	0.11	0.76	
	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	
PIPELINE INSTALLATION	PIPELINE LAY BARGE diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	SUPPORT VESSEL diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	PIPELINE BURY BARGE diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	SUPPORT VESSEL diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSELS>600hp diesel(crew)	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSELS>600hp diesel(supply)	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
FACILITY 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	
PRODUCTION	RECIP.<600hp diesel - Crane	250	12.075	289.80	3	365	0.55	0.81	7.71	0.62	1.67	0.30	0.44	4.22	0.34	0.91	
FW Pump #1	RECIP.<600hp diesel	500	24.15	579.60	1	52	1.10	1.62	15.42	1.23	3.34	0.03	0.04	0.40	0.03	0.09	
FW Pump #2	RECIP.<600hp diesel	500	24.15	579.60	1	52	1.10	1.62	15.42	1.23	3.34	0.03	0.04	0.40	0.03	0.09	
Escape Capsule	RECIP.<600hp diesel	40	1.932	46.37	1	52	0.09	0.13	1.23	0.10	0.27	0.00	0.00	0.03	0.00	0.01	
Escape Capsule	RECIP.<600hp diesel	30	1.449	34.78	1	52	0.07	0.10	0.93	0.07	0.20	0.00	0.00	0.02	0.00	0.01	
	SUPPORT VESSEL diesel	2064	99.6912	2392.59	24	104	1.45	6.67	50.01	1.50	10.91	1.82	8.33	62.41	1.87	13.62	
	TURBINE nat gas	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	RECIP.2 cycle lean nat gas	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
F.G. Compressor	RECIP.4 cycle lean nat gas	1380	9857.34	236576.16	24	365	0.01	35.87	2.19	4.86	0.02	157.10	9.59	21.30	0.00	0.00	
F.G. Compressor	RECIP.4 cycle lean nat gas	1380	9857.34	236576.16	24	365	0.01	35.87	2.19	4.86	0.02	157.10	9.59	21.30	0.00	0.00	
Gas Generator	RECIP.4 cycle lean nat gas	1469	10493.067	251833.61	24	365	0.01	38.18	2.33	5.18	0.03	167.23	10.20	22.68	0.00	0.00	
Gas Generator	RECIP.4 cycle lean nat gas	1469	10493.067	251833.61	24	365	0.01	38.18	2.33	5.18	0.03	167.23	10.20	22.68	0.00	0.00	
Gas Generator	RECIP.4 cycle lean nat gas	1102	7871.586	188918.06	24	365	0.00	28.64	1.75	3.88	0.02	125.45	7.65	17.01	0.00	0.00	
	RECIP.4 cycle rich nat gas	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Line Heater	BURNER nat gas	3.5	3333.33	80000.00	24	365	0.03	0.00	0.33	0.02	0.28	0.11	0.01	1.46	0.08	1.23	
Line Heater	BURNER nat gas	2	1904.76	45714.29	24	365	0.01	0.00	0.19	0.01	0.16	0.06	0.00	0.83	0.05	0.70	
	MISC.	BPD	SCF/HR	COUNT													
	TANK-	0			0	0				0.00						0.00	
	FLARE-		0		0	0			0.00	0.00	0.00				0.00	0.00	
	PROCESS VENT-		16000		24	365				54.40					238.27		
	FUGITIVES-			300.0		365				0.15					0.66		
	GLYCOL STILL VENT-		79000		24	365				0.52					2.28		
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	0.00	0.00	
<b>2018 YEAR TOTAL</b>							<b>11.99</b>	<b>45.77</b>	<b>528.76</b>	<b>78.46</b>	<b>101.02</b>	<b>5.27</b>	<b>22.36</b>	<b>944.03</b>	<b>293.86</b>	<b>143.46</b>	
<b>EXEMPTION CALCULATION</b>	<b>DISTANCE FROM LAND IN MILES</b>											<b>1681.65</b>	<b>1681.65</b>	<b>1681.65</b>	<b>1681.65</b>	<b>46452.22</b>	
	50.5																

ATTACHMENT H-2 (cont'd)

AIR EMISSIONS CALCULATIONS - SECOND YEAR

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL	CONTACT	PHONE	REMARKS								
W&T Energy VI, LLC	VK	823/822	G10942/G16549	A	A-15	Valerie Land	713-624-7272	#REF1								
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	6635	320.4705	7691.29	24	61	4.68	21.45	160.76	4.82	35.07	3.42	15.70	117.68	3.53	25.67
	PRIME MOVER>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	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)	2064	99.6912	2392.59	6	17	1.45	6.67	50.01	1.50	10.91	0.07	0.34	2.55	0.08	0.56
	VESSELS>600hp diesel(supply)	2064	99.6912	2392.59	10	17	1.45	6.67	50.01	1.50	10.91	0.12	0.57	4.25	0.13	0.93
<i>Transport Vessel</i>	VESSELS>600hp diesel(supply)	2064	99.6912	2392.59	8	3	1.45	6.67	50.01	1.50	10.91	0.02	0.08	0.60	0.02	0.13
PIPELINE INSTALLATION	PIPELINE LAY BARGE diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SUPPORT VESSEL diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	PIPELINE BURY BARGE diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SUPPORT VESSEL diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS>600hp diesel(crew)	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS>600hp diesel(supply)	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FACILITY 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
PRODUCTION	RECIP.<600hp diesel-Crane	250	12.075	289.80	3	365	0.55	0.81	7.71	0.62	1.67	0.30	0.44	4.22	0.34	0.91
	<i>FW Pump #1</i>	500	24.15	579.60	1	52	1.10	1.62	15.42	1.23	3.34	0.03	0.04	0.40	0.03	0.09
	<i>FW Pump #2</i>	500	24.15	579.60	1	52	1.10	1.62	15.42	1.23	3.34	0.03	0.04	0.40	0.03	0.09
	<i>Escape Capsule</i>	40	1.932	46.37	1	52	0.09	0.13	1.23	0.10	0.27	0.00	0.00	0.03	0.00	0.01
	<i>Escape Capsule</i>	30	1.449	34.78	1	52	0.07	0.10	0.93	0.07	0.20	0.00	0.00	0.02	0.00	0.01
	SUPPORT VESSEL diesel	2064	99.6912	2392.59	24	104	1.45	6.67	50.01	1.50	10.91	1.82	8.33	62.41	1.87	13.62
	TURBINE' nat gas	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	RECIP.2 cycle lean nat gas	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	RECIP.4 cycle lean nat gas	1380	9857.34	236576.16	24	365	0.01	35.87	2.19	4.86	0.02	0.02	157.10	9.59	21.30	
	<i>F. G. Compressor</i>	1380	9857.34	236576.16	24	365	0.01	35.87	2.19	4.86	0.02	0.02	157.10	9.59	21.30	
	<i>Gas Generator</i>	1469	10493.067	251833.61	24	365	0.01	38.18	2.33	5.18	0.03	0.03	167.23	10.20	22.68	
	<i>Gas Generator</i>	1469	10493.067	251833.61	24	365	0.01	38.18	2.33	5.18	0.03	0.03	167.23	10.20	22.68	
	<i>Gas Generator</i>	1102	7871.586	188918.06	24	365	0.00	28.64	1.75	3.88	0.02	0.02	125.45	7.65	17.01	
	RECIP.4 cycle rich nat gas	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	<i>Line Heater</i>	3.5	3333.33	80000.00	24	365	0.03	0.00	0.33	0.02	0.28	0.11	0.01	1.46	0.08	1.23
	<i>Line Heater</i>	2	1904.76	45714.29	24	365	0.01	0.00	0.19	0.01	0.16	0.06	0.00	0.83	0.05	0.70
	MISC.	BPD	SCF/HR	COUNT												
	TANK-	0			0	0				0.00	0.00				0.00	0.00
	FLARE-		0		0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
	PROCESS VENT-		16000		24	365				54.40					238.27	0.00
	FUGITIVES-			300.0						0.15					0.66	0.00
	GLYCOL STILL VENT-		79000		24	365				0.52					2.28	0.00
DRILLING WELL TEST	OIL BURN	0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	GAS FLARE		0		0	0				0.00	0.00				0.00	0.00
<b>2019 YEAR TOTAL</b>							<b>13.44</b>	<b>52.45</b>	<b>578.76</b>	<b>79.96</b>	<b>111.93</b>	<b>5.99</b>	<b>25.69</b>	<b>968.98</b>	<b>294.60</b>	<b>148.90</b>
<b>EXEMPTION CALCULATION</b>	<b>DISTANCE FROM LAND IN MILES</b>										<b>1681.65</b>	<b>1681.65</b>	<b>1681.65</b>	<b>1681.65</b>	<b>46452.22</b>	
	50.5															

AIR EMISSIONS CALCULATIONS - THIRD YEAR

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL		CONTACT		PHONE	REMARKS							
W&T Energy VI, LLC	VK	823/822	G10942/G1654	A	A-15		Valerie Land		713-624-7272	#REF1							
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	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)	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	
	VESSELS>600hp diesel(tugs)	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
PIPELINE INSTALLATION	PIPELINE LAY BARGE diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	SUPPORT VESSEL diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	PIPELINE BURY BARGE diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	SUPPORT VESSEL diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSELS>600hp diesel(crew)	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
VESSELS>600hp diesel(supply)	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
FACILITY 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	
PRODUCTION	RECIP.<600hp diesel - Crane	250	12.075	289.80	3	365	0.55	0.81	7.71	0.62	1.67	0.30	0.44	4.22	0.34	0.91	
	FW Pump #1	RECIP.<600hp diesel	500	24.15	579.60	1	52	1.10	1.62	15.42	1.23	3.34	0.03	0.04	0.40	0.03	0.09
	FW Pump #2	RECIP.<600hp diesel	500	24.15	579.60	1	52	1.10	1.62	15.42	1.23	3.34	0.03	0.04	0.40	0.03	0.09
	Escape Capsule	RECIP.<600hp diesel	40	1.932	46.37	1	52	0.09	0.13	1.23	0.10	0.27	0.00	0.00	0.03	0.00	0.01
	Escape Capsule	RECIP.<600hp diesel	30	1.449	34.78	1	52	0.07	0.10	0.93	0.07	0.20	0.00	0.00	0.02	0.00	0.01
		SUPPORT VESSEL diesel	2064	99.6912	2392.59	24	104	1.45	6.67	50.01	1.50	10.91	1.82	8.33	62.41	1.87	13.62
		TURBINE nat gas	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		RECIP. 2 cycle lean nat gas	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	F. G. Compressor	RECIP. 4 cycle lean nat gas	1380	9857.34	236576.16	24	365	0.01	35.87	2.19	4.86	0.02	157.10	9.59	21.30	9.59	21.30
	F. G. Compressor	RECIP. 4 cycle lean nat gas	1380	9857.34	236576.16	24	365	0.01	35.87	2.19	4.86	0.02	157.10	9.59	21.30	9.59	21.30
	Gas Generator	RECIP. 4 cycle lean nat gas	1469	10493.067	251833.61	24	365	0.01	38.18	2.33	5.18	0.03	167.23	10.20	22.68	10.20	22.68
	Gas Generator	RECIP. 4 cycle lean nat gas	1469	10493.067	251833.61	24	365	0.01	38.18	2.33	5.18	0.03	167.23	10.20	22.68	10.20	22.68
	Gas Generator	RECIP. 4 cycle lean nat gas	1102	7871.586	188918.06	24	365	0.00	28.64	1.75	3.88	0.02	125.45	7.65	17.01	7.65	17.01
		RECIP. 4 cycle rich nat gas	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Line Heater	BURNER nat gas	3.5	3333.33	80000.00	24	365	0.03	0.00	0.33	0.02	0.28	0.11	0.01	1.46	0.08	1.23
	Line Heater	BURNER nat gas	2	1904.76	45714.29	24	365	0.01	0.00	0.19	0.01	0.16	0.06	0.00	0.83	0.05	0.70
	MISC.	TANK-	0			0	0					0.00				0.00	
FLARE-		0			0	0				0.00	0.00			0.00	0.00	0.00	
PROCESS VENT-			16000		24	365				54.40				238.27			
FUGITIVES-				300.0		365				0.15				0.66			
GLYCOL STILL VENT-			79000		24	365				0.52				2.28			
DRILLING WELL TEST	OIL BURN	0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	GAS FLARE	0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>2020 YEAR TOTAL</b>							<b>4.40</b>	<b>10.97</b>	<b>267.98</b>	<b>70.64</b>	<b>44.13</b>	<b>2.35</b>	<b>9.00</b>	<b>843.91</b>	<b>290.85</b>	<b>121.61</b>	
EXEMPTION CALCULATION	DISTANCE FROM LAND IN MILES										<b>1681.65</b>	<b>1681.65</b>	<b>1681.65</b>	<b>1681.65</b>	<b>46452.22</b>		
	50.5																



### AIR EMISSIONS CALCULATIONS

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL
W&T Energy VI	VK	823/822	G10942/G16549	A	A-15
Year	Emitted Substance				
	PM	SOx	NOx	VOC	CO
2018	5.27	22.36	944.03	293.86	143.46
2019	5.99	25.69	968.98	294.60	148.90
2020	2.35	9.00	843.91	290.85	121.61
2021	2.35	9.00	843.91	290.85	121.61
2022	2.35	9.00	843.91	290.85	121.61
2023	2.35	9.00	843.91	290.85	121.61
2024	2.35	9.00	843.91	290.85	121.61
2025	2.35	9.00	843.91	290.85	121.61
2026	2.35	9.00	843.91	290.85	121.61
2027	2.35	9.00	843.91	290.85	121.61
2028	2.35	9.00	843.91	290.85	121.61
2029	2.35	9.00	843.91	290.85	121.61
<b>Allowable</b>	<b>1681.65</b>	<b>1681.65</b>	<b>1681.65</b>	<b>1681.65</b>	<b>46452.22</b>

ATTACHMENT H-1 (cont'd)

## APPENDIX I – OIL SPILLS INFORMATION

### I.1 Oil Spill Response Planning

W&T Energy VI, LLC (GOM Company No. 03148) is covered under W&T Offshore, Inc.'s (GOM Company No. 01248) Regional Oil Spill Response Plan (OSRP) was approved on January 16, 2018. This Regional OSRP in accordance with 30 CFR 254 will cover activities proposed in this DOCD.

### I.2 Spill Response Sites

<i>Primary Response Equipment Location</i>	<i>Preplanned Staging Location</i>
Houma, LA	Houma, LA
Harvey, LA	Harvey, LA
Venice, LA	Venice, LA

### I.3 OSRO Information

W&T's primary equipment provider is Clean Gulf Associates (CGA). The Marine Spill Response Corporation's (MSRC) STARS network will provide closest available personnel, as well as an MSRC supervisor to operate the equipment.

### I.4 Worst-Case Scenario Determination

<i>Category</i>	<i>Regional OSRP WCD</i>	<i>DOCD WCD</i>	<i>Regional OSRP WCD</i>	<i>DOCD WCD</i>
Type of Activity	Drilling Activity >10 miles from shore	Drilling Activity >10 miles from shore	Production Activity >10 miles from shore	Production Activity >10 miles from shore
Facility Location (Area/Block)	EW910	VK823	MC800	VK823
Facility Designation	A	A-15	SSW001	A
Distance to Nearest Shoreline (miles)	69	51	52	51
Volume				
Storage tanks (total)				1000 bbls
Uncontrolled blowout	171,412 bbls	18,662 bbls	11,300 bbls	2000 bbls
<b>Total Volume</b>	<b>171,412 bbls</b>	<b>18,662 bbls</b>	<b>11,300 bbls</b>	<b>3000 bbls</b>
Type of Oil(s) (crude, condensate, diesel)	Crude Oil	Condensate	Crude Oil	Condensate
API Gravity	25°	53°	30°	53°

W&T has determined that the worst-case scenario from the activities proposed in this DOCD does not supersede the worst-case scenario from our approved regional OSRP for far-shore activities.

Since W&T has the capability to respond to the worst-case spill scenario included in our regional OSRP approved on January 18, 2018, and since the worst-case scenario determined for our DOCD 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 DOCD.

## **I.5 Oil 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 18,662 barrels of condensate with an API gravity of 53°.

### **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 BSEE Oil Spill Risk Analysis Model (OSRAM) for the Central and Western Gulf of Mexico available on the BSEE website. The results are shown in **Figure 1**. The BSEE OSRAM identifies a 7% 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 Energy VI, LLC 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 (Attachment I-1)**.

Using the estimated chemical and physical characteristics of condensate, an ADIOS weathering model was run on a similar product from the ADIOS oil database. The results indicate 58% or approximately 10,824 barrels of condensate would be evaporated/dispersed within 24 hours, with approximately 7,838 barrels remaining.

<b>Spill Response VK823, A-15</b>	<b>Barrels of Oil</b>
WCD Volume	18,662
Less 58% natural evaporation/dispersion	10,824
Remaining volume	7,838

**Figure 2 (Attachment I-1)** outlines equipment, personnel, materials and support vessels as well as temporary storage equipment available to respond to a spill of 7,838 barrels. 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 (Attachment I-1)** also indicates how operations will be supported.

W&T's Oil Spill Response Plan includes alternative response technologies such as dispersants. Strategies will be decided by Unified Command based on 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. Slick containment boom, along with sorbent boom, would be immediately called out and on-scene as soon as possible. Offshore response strategies may include collection of condensate with sorbent boom (inside hard boom), attempting to skim utilizing the HOSS Barge and one Fast Response Unit (FRU), with a total derated skimming capacity of 51,502 barrels. Temporary storage associated with skimming

equipment equals 4,400 barrels. If additional storage is needed, a 49,400 barrel storage barge may be mobilized and centrally located to provide temporary storage allowing the skimmers to stay in the area of operations as much as possible. **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 would depend upon existing environmental conditions. Shoreline protection would include the use of CGA's near shore and shallow water skimmers with a total derated skimming capacity of 3,588 barrels. Temporary storage associated with skimming equipment equals 34 barrels. If additional storage is needed, a 20,000 barrel storage barge 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 AMPOL and OMI Environmental will ensure access to 132,000 feet of 18" shoreline protection boom. **Figure 2 (Attachment I-1)** 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. The State of Louisiana Initial Oil Spill Response Plan for Plaquemines Parish and Unified Command would be consulted to ensure that environmental and special economic resources would be correctly identified and prioritized to ensure optimal protection. Shoreline protection strategies depict the protection response modes applicable for oil spill clean-up operations. The State of Louisiana Initial Oil Spill Response Plan provides detailed shoreline protection strategies for this area, and it describes necessary action to keep the oil spill from entering Louisiana's coastal wetlands, based on the assumption that removal of the released oil will be much easier and less damaging to fragile coastal ecosystems if done in the open waters of the Gulf of Mexico. Supervisory personnel have the option to modify the deployment and operation of equipment allowing a more effective response to site-specific circumstances. W&T Energy VI, LLC's contract Spill Management Team holds a copy of the State of Louisiana Initial Oil Spill Response Plan.

Based on the anticipated worst case discharge scenario, W & T Energy VI, LLC 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 58 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 Energy VI, LLC 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, the spill management team (SMT) will monitor these activities along with 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

### **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.

### **Offshore Response Actions**

#### **Equipment Deployment**

##### *Surveillance*

- Surveillance Aircraft will be deployed within two hours of Qualified Individual (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 Airborne Support Inc. (ASI) on standby
- With the Federal On-Scene Coordinator (FOSC), conduct analysis to determine appropriateness of dispersant application
- 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 & sorbent 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

### *Dedicated off-shore skimming systems*

#### *General*

- Deployed to the highest concentration of oil
- Assets deployed at safe distance from aerial dispersant 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 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

#### *Storage Vessels*

- Establish availability of CGA contracted assets
- 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 Energy VI, LLC's contracted resources as applicable
- Industry vessels 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

#### *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. 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 a crew member.

### **Near Shore Response Actions**

#### *Timing*

- Place 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

#### *Equipment Deployment*

##### *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)

#### *Vessel Deployment*

##### *Dedicated Near Shore skimming systems*

- Fast Response Vessels (FRV)
- Egmpol and Marco Shallow Water Skimmers (SWS)
- Operate with aerial spotter directing systems to observe oil slicks

##### *VOO*

- Use W & T Energy VI, LLC'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*

- Environmental risk assessments (ERA) to determine priorities for area protection
- Time to acquire personnel and equipment and their availability
- Previous contingency planning contained in the appropriate Area Contingency Plan, and currently for Louisiana, The State of Louisiana Initial Oil Spill Response Plan, Deep Water Horizon, dated 2 May 2010

#### *Actions*

#### *Placement of boom*

- Position boom in accordance with the ERA based on the actual situation or the appropriate ACP
  - Assess timing of booming operations to ensure it is where it needs to be at time of impact.
- 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
- Shoreline Cleanup and Assessment Team 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
- 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 redeployment as necessary
- In-situ burn may be considered when marshes have been impacted
- Passive clean up of marshes should be considered and appropriate stocks of sorbent boom and/or sweep obtained
- Earthen berms and shoreline protection boom may be considered to protect sensitive inland areas

**Decanting Strategy**

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

**CGA Equipment Limitations**

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

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



Koseq Arms	8 foot seas
OSRV	4 foot seas

**Environmental Conditions in the GOM**

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.

In support of our Oil Spill Response Discussion and the Worst Case Discharge Volume Determination, please find included herein the following information:

- *Attachment I-1:* Figure 2 Oil Spill Response Equipment

**WCD Scenario– BASED ON WELL BLOWOUT DURING DRILLING OPERATIONS (51 miles from shore)**

3,683 bbls of condensate (Volume considering natural weathering);

API Gravity 53°

**FIGURE 2 – Equipment Response Time to VK 823 A-14**

*Dispersants/Surveillance*

Dispersant/Surveillance	Dispersant Capacity (gal)	Storage Capacity	Persons Req.	From	Hrs to Procure	Hrs to Loadout	Travel to site	Total Hrs
CGA								
Basler 67T	2000	NA	2	Houma	1	1	0.8	2.8
ASI								
DC 3	1200	NA	2	Houma	1	1	1.1	3.1
DC 3	1200	NA	2	Houma	1	1	1.1	3.1
Aero Commander	NA	NA	2	Houma	1	1	0.8	2.8

*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	43000	4000	3 Tugs	5	Harvey	7	0	5	19.4	1	32.4
Boom Barge (CGA-300) 42" Auto Boom	NA	NA	1 Tug 50 Crew	4 (Barge) 2 (Per Crew)	Leeville	4	0	6	17.9	1.5	29.4

Recovered Oil Storage No Staging	EDRC	Storage Capacity (bbl)	VOO	Persons Required	From	Hrs to Procure	Hrs to Loadout	Hrs to GOM	Travel to Spill Site	Hrs to Deploy	Total Hrs
Enterprise Marine Services LLC (available through contract with CGA)											
CTCo 2603	NA	25000	1 Tug	6	Amelia	4	12	4	36.88	1	57.88
CTCo 2604	NA	20000	1 Tug	6	Amelia	4	12	4	36.88	1	57.88

**Staging Area: Pascagoula**

Offshore Equipment With Staging	EDRC	Storage Capacity	VOO	Persons Req.	From	Hrs to Procure	Hrs to Load Out	Travel to Staging	Travel to Site	Hrs to Deploy	Total Hrs
CGA											
FRU (2) + 100 bbl Tank (4)	8502	400	2 Utility	12	Venice	1	2	4	6.7	1	14.7

*Nearshore Response*

Nearshore Equipment No Staging	EDRC	Storage Capacity (bbl)	VOO	Persons Required	From	Hrs to Procure	Hrs to Loadout	Hrs to GOM	Travel to Spill Site	Hrs to Deploy	Total Hrs
Enterprise Marine Services LLC (available through contract with CGA)											
CTCo 2605	NA	20000	1 Tug	6	Amelia	4	12	4	10.00	1	31.00

**Staging Area: Pascagoula**

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 Site	Hrs to Deploy	Total Hrs
CGA											
SWS Marco	3588	34	NA	3	Venice	1	2	4	2	0	9

*Shoreline Protection*

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
OMI Environmental (available through MSA)									
10,000' 18" Boom	4 Crew	10	New Iberia, LA	1	1	4	2	3	11
10,000' 18" Boom	4 Crew	10	Houston, TX	1	1	7.5	2	3	14.5
10,000' 18" Boom	4 Crew	10	Port Arthur, TX	1	1	6.25	2	3	13.25
20,000' 18" Boom	8 Crew	20	Belle Chasse, LA	1	1	1.75	2	6	11.75
10,000' 18" Boom	4 Crew	10	Port Allen, LA	1	1	3.5	2	3	10.5
10,000' 18" Boom	4 Crew	10	Houma, LA	1	1	3.5	2	3	10.5
15,000' 18" Boom	6 Crew	14	Gretna, LA (Warehouse)	2	2	2	2	4	12
AMPOL (available through MSA)									
42,000' 18" Boom	16	40	New Iberia, LA	2	2	4	2	12	22
<sup>Crew</sup> 20,000' 18" Boom	8 Crew	20	New Orleans, LA	2	2	2	2	6	14

**Staging Area: Pascagoula**

Beach Boom	EDRC	Storage Capacity	VOO	Persons Req.	From	Hrs to Procure	Hrs to Load Out	Travel to Staging	Travel to Deployment Site	Hrs to Deploy	Total Hrs
CGA											
Beach Boom (2000')	NA	NA	NA	6	Galveston	1	2	7.5	1	2	13.5
Beach Boom (1000')	NA	NA	NA	4	Ingleside	1	2	10.5	1	2	16.5
Beach Boom (2000')	NA	NA	NA	6	Pascagoula	1	2	0	1	2	6

Wildlife Response	EDRC	Storage Capacity	VOO	Persons Req.	From	Hrs to Procure	Hrs to Load Out	Travel to Staging	Travel to Deployment Site	Hrs to Deploy	Total Hrs
CGA											
Wildlife Support Trailer	NA	NA	NA	2	Houma	1	2	3	1	2	9
Bird Scare Guns (24)	NA	NA	NA	2	Belle Chasse	1	2	2	1	2	8
Bird Scare Guns (12)	NA	NA	NA	2	Galveston	1	2	7.5	1	2	13.5
Bird Scare Guns (24)	NA	NA	NA	2	Houma	1	2	3	1	2	9
Bird Scare Guns (12)	NA	NA	NA	2	Ingleside	1	2	10.5	1	2	16.5
Bird Scare Guns (24)	NA	NA	NA	2	Lake Charles	1	2	5	1	2	11
Bird Scare Guns (24)	NA	NA	NA	2	Pascagoula	1	2	0	1	2	6

Response Asset	Total
Offshore EDRC	51,502
Offshore Recovered Oil Storage	49,400
Nearshore / Shallow Water EDRC	3,588
Nearshore / Shallow Water Recovered Oil Storage	20,034

ATTACHMENT I-1 (cont'd)

## **APPENDIX J – ENVIRONMENTAL MONITORING INFORMATION**

### **J.1 Monitoring Systems**

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

### **J.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.

### **J.3 Flower Garden Banks National Marine Sanctuary**

Viosca Knoll Block 823 is not located in the Flower Garden Banks National Marine Sanctuary; therefore, the requested information is not required in this DOCD.

## **APPENDIX K – LEASE STIPULATIONS INFORMATION**

Development activities under this DOCD are subject to the following stipulations attached to Leases OCS-G 10942, Viosca Knoll Block 823 and Lease OCS-G 16549, Viosca Knoll Block 822.

### **K.1 Lease Stipulation No. 1 – Protection of Archaeological Resources**

Lease OCS-G 10942 was issued with the stipulation that requires the operator to prepare and submit a report to the BOEM Regional Director regarding the existence or non-existence of any archaeological resource within the proposed activities site.

This stipulation was incorporated into the Code of Federal Regulations under Title 30 CFR 550.194.

The proposed activities under this DOCD are being conducted from an existing surface location; therefore, no archaeological resources are anticipated to be encountered.

### **K.2 Lease Stipulation No. 4 - Military Warning Area (MWA) EWTA 1 and 3**

Lease OCS-G 10942 had the Military Warning Area stipulation attached to the oil and gas lease instrument, however the latest mapping of these areas show the surface location of the proposed wells in Viosca Knoll Block 823 is outside any Military Warning Area.

The nearest Military Warning Area to the existing Viosca Knoll Block 823 A platform is MWA W-155. Our service vessels and helicopters associated with these proposed activities will be based in Venice, Louisiana, and will not traverse through this or any of the known Military Warning Areas.

### **K.3 Lease Stipulation No. 8 – Protected Species**

Lease Stipulation No. 8 is meant to reduce the potential taking of marine protected species. W&T will operate in accordance with Notice to Lessees (NTL) 2016-G01, to minimize the risk of vessel strikes to protected species and report observations of injured or dead protected species, and the prevention of intentional and/or accidental introduction of debris into the marine environment.

## **APPENDIX L – ENVIRONMENTAL MITIGATION MEASURES INFORMATION**

### **L.1 Mitigation Measures Taken to Minimize Impact to Marine and Coastal Environment**

The activities in this DOCD do not affect the State of Florida; therefore, this information is not being submitted.

### **L.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 2016-G01, “Vessel Strike Avoidance and Injured/Dead Protected Species Reporting
- NTL 2015-G03, “Marine Trash and Debris Awareness and Elimination”
- NTL 2016-G02, “Implementation of Seismic Survey Mitigation Measures and Protected Species Observer Program”



## **APPENDIX M – RELATED FACILITIES AND OPERATIONS INFORMATION**

### **M.1 Related OCS Facilities and Operations**

The activities proposed in this DOCD are being conducted from the existing VIRGO Platform (Complex ID No. 113-1) located in Viosca Knoll Block 823. This is a manned, 12-pile (skirt), 14-slot fixed OCS structure located about 72 miles east of Venice, Louisiana. Thirteen (13) wells have been drilled from this platform to date.

*Please note: Although the new well is named the A-15 in this DOCD, it will actually be the A-14 when we file an Application for Permit to Drill. The reason for the naming being off is that under the previously approved DOCD (Plan Control No. N-9972), the A-13 well was actually drilled as the A-10 sidetrack. As such, the A-14 will be the A-13, and the A-15 will be the A-14. This is important to note because this is the last open slot on the VIRGO A platform that we can use to drill a new well.*

Included as **Attachment M-1** is the Platform Assessment Questionnaire applicable to the Viosca Knoll Block 823 A platform (VIRGO) for your review.

### **M.2 Transportation System**

Production from the new well will be commingled with other production from this field, separated, measured for sales and royalty through the existing gas sales meter and ACT Unit located on the VIRGO A platform. The measured gas departs the VIRGO platform via the existing DIGP 16" Gas Pipeline (Segment No. 12162) for ultimate delivery into Operations System D10. The measured liquid hydrocarbons depart the platform via BP Pipelines (North America) Inc.'s 8" Oil Pipeline (Segment No. 12255) for ultimate delivery into Operations System No. 51.1.

No other pipelines will be constructed as a result of the activities proposed in this DOCD.

### **M.3 Produced Liquid Hydrocarbons Transportation Vessels**

There will no transfer of liquid hydrocarbons by any other means other than pipeline.

**STRUCTURE ASSESSMENT QUESTIONS  
VIOSCA KNOLL BLOCK 823, PLATFORM A (VIRGO)**

<b>QUESTIONS</b>	<b>ANSWERS</b>
1. Do your proposed activities require a modification that would increase or alter loading on the structure's original design or previously approved configuration?	NO
2. Will the platform change from unmanned to manned?	NO
3. Is your platform located in areas of unstable bottom conditions?	NO
4. If your platform was designed to API RP 2A-WSD 19 <sup>th</sup> Edition or earlier, is your platform deck height adequate according to API RP 2A-WSD 21 <sup>st</sup> Edition, Section 17.2.4?	NA
5. If your platform was designed to API RP 2A-WSD 20 <sup>th</sup> Edition and 21 <sup>st</sup> Edition, is your platform deck height adequate according to API RP 2A-WSD 21 <sup>st</sup> Edition, Section 2.3.4?	YES
6. If your platform was designed to API Bulletin 2INT-MET, is your platform deck height adequate according to API Bulletin 2INT-DG, Section 3.2?	NA
7. If your platform is located between 90.5°W and 85.5°W, do your proposed activities cause your platform to trip high consequence criteria detailed in NTL No. 2007-G27?	NO
8. Has the structure undergone an annual topside inspection?	YES
9. Was any damage discovered by the topside inspection?	NO
10. Has the structure undergone an underwater inspection within the last 5 years?	YES
11. What year was the inspection performed and was any damage discovered by the inspection?	2013, NO

## APPENDIX N – SUPPORT VESSELS AND AIRCRAFT INFORMATION

### N.1 General

Provided in the table below is information regarding the vessels and aircraft that will be used to support our proposed activities:

<i>Type</i>	<i>Maximum Fuel Tank Capacity</i>	<i>Maximum Number in Area at Any Time</i>	<i>Trip Frequency or Duration</i>
Tug Boats	NA	NA	NA
Anchor Handling Boat	NA	NA	NA
Vessel – Transport PF Rig off of VK823A platform	100,000 gals	3	1 in 2019
Crew Boat	20,000 gals	1	2 x week
Supply Boat	75,000 gals	1	2 x week
Helicopter – Crew Transport	383 gals	1	As needed
Helicopter – Rig support	146.8 gals	1	As needed

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

### N.2 Diesel Oil Supply Vessels

In the table below is additional information regarding the vessels being used to supply diesel oil.

<i>Size of Fuel Supply Vessel</i>	<i>Capacity of Fuel Supply Vessel</i>	<i>Frequency of Fuel Transfers</i>	<i>Route Fuel Supply Vessel Will Take</i>
135' Crew Boat	20,000 gals	As needed (alternate to Supply Boat)	Venice, LA to Baptiste Collette to GOM VK823A
180' OSV Supply Boat	75,000 gals	Weekly	Venice, LA to Mississippi River to GOM VK823A

### N.3 Drilling Fluid Transportation

The activities proposed in this DOCD do not affect the State of Florida; therefore, this information is not required.

### N.4 Solid and Liquid Waste Transportation

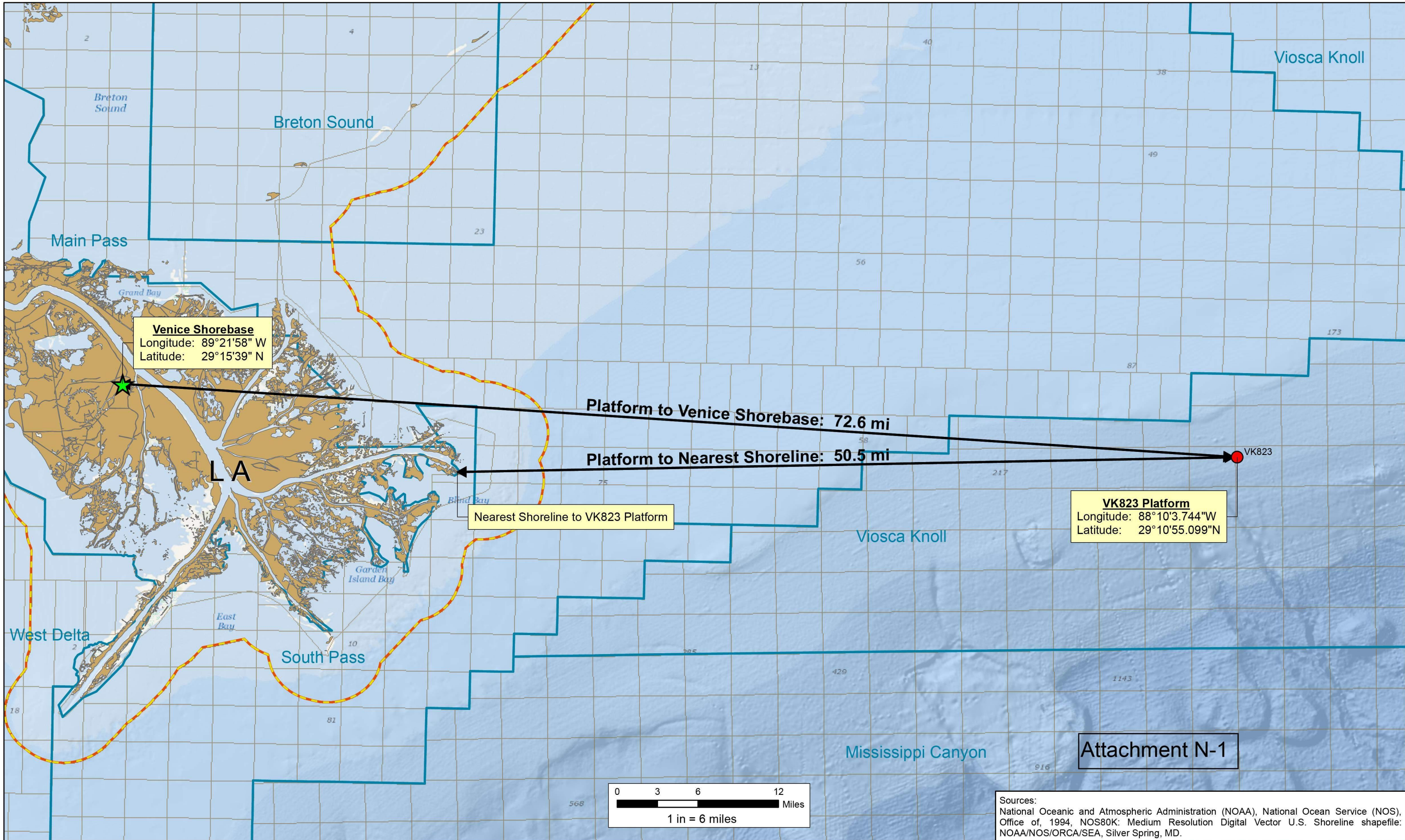
For information regarding the solid and liquid wastes generated as a result of the proposed activities herein that will be transported to shore for disposal please refer to Appendix G and the associated tables.

### N.5 Vicinity Map

Enclosed as *Attachment N-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.

# Viosca Knoll 823 Platform

Structure Name: A (Virgo) Platform ID: 113 Operator: W&T En VI



## **APPENDIX O – ONSHORE SUPPORT FACILITIES INFORMATION**

### **O.1 General**

Listed in the table below is information regarding the onshore base that will support the drilling, completion and production activities detailed in this DOCD.

<i>Name</i>	<i>Location</i>	<i>Existing/New/Modified</i>
Grand Isle Shipyard	Venice, LA	Existing

### **O.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 DOCD.

### **O.3 Support Base Construction or Expansion Timetable**

Not applicable.

### **O.4 Waste Disposal**

For information on the onshore facilities being used to store and dispose of any solid and liquid wastes generated by the proposed activities, please refer to Appendix G and its associated tables.

## **APPENDIX P – COASTAL ZONE MANAGEMENT (CZMA) INFORMATION**

### **P.1 Louisiana CZM Consistency Review**

Certifying consistency with the State of Louisiana is not required for the activities as proposed in this DOCD.

**P.2 Alabama Coastal Zone Management Consistency Certification**

The OCS related oil and gas exploratory 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 the plan:

<i>Topic</i>	<i>Cross Ref</i>	<i>Comments</i>
<b><i>Coastal Resource Use Policy</i></b>		
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. Additionally, there will be no employment effects as a result of these operations.
Mineral Resource Exploration and Extraction	Appendix M	Proposed development operations will take place 77.5 miles from Alabama’s coastline.
Commercial Fishing	Appendix Q	
Hazard Management	Appendix C	A Shallow Hazards Report was previously submitted to BOEM in order to identify and assess seafloor and shallow geologic conditions in the Viosca Knoll Blocks 823 area.
Shoreline Erosion	Appendix Q	Proposed development operations will take place 77.5 miles from Alabama’s coastline.
Recreation	Appendix Q	
Transportation	Appendix L	
<b><i>Natural Resource Protection Policies</i></b>		
Biological Productivity	Appendix Q	
Water Quality	Appendix Q	
Water Resources	Appendix Q	
Air Quality	Appendix H	
Wetlands and Submerged Grassbeds	Appendix Q	
Beach and Dune Protection	Appendix Q	
Wildlife Habitat	Appendix Q	
Endangered Species	Appendix Q Appendix L	
Cultural Resources Protection	Appendix C	This block does lie within a high probability zone for cultural resources; therefore it requires an Archeological Report. This report was previously submitted to the BOEM under an Initial Exploration Plan for VK823. There will be no bottom-disturbing activities with these operations.

**STATE OF ALABAMA  
COASTAL ZONE MANAGEMENT  
CONSISTENCY CERTIFICATION**

**SUPPLEMENTAL DEVELOPMENT  
OPERATIONS COORDINATION DOCUMENT**

**LEASES OCS-G 10942 & 16549  
VIOUCA KNOLL BLOCKS 823 & 822**

The proposed activities, as described in detail in this OCS Plan, comply with Alabama's approved Coastal Management Program; and will be conducted in manner consistent with such Program.

W&T Energy VI, LLC

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Lessee or Designated Operator

*Valerie Rand*

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Certifying Official

*5/31/2018*

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Date



**APPENDIX Q – 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
<b>Site Specific at Offshore Location</b>						
Designated Topographic Feature		(1)	(1)		(1)	
Pinnacle Trend Area; Live Bottoms		(2)	(2)		(2)	
Eastern Gulf live bottoms		(3)	(3)		(3)	
Chemosynthetic communities			(4)			
Water quality		X			X	
Fisheries		X			X	
Marine mammals	X(8)	X(8)			X(8)	X(8)
Sea turtles	X(8)	X(8)			X(8)	X(8)
Air quality	X(9)				X	
Shipwreck sites (known or potential)			(7)			
Prehistoric archaeological sites			(7)		X	
<b>Vicinity of Offshore Location</b>						
Essential fish habitat		X			X(6)	
Marine and pelagic birds	X				X	X
Public health and safety					(5)	
<b>Coastal and Onshore</b>						
Beaches					X(6)	X
Wetlands					X(6)	
Shorebirds and coastal nesting birds					X(6)	
Coastal wildlife refuges	X				X(1)	X
Wilderness areas					X	
<b>Other Resources</b>						

## 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 H<sub>2</sub>S 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 MMS 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.1 Site Specific at Offshore Location**

Site specific activities at Viosca Knoll Block 823 (VIRGO) analyzed for this submittal include drilling, completion, and producing one additional well from the existing Platform A in this same block. This well will be designated as the A-15 well.

No new structures, pipelines or additional production equipment will be installed as a result of these activities.

#### ***Designated Topographic Features***

The activities proposed in this DOCD are located greater than 10 miles from any topographic feature; therefore there will be no adverse impacts to topographic features from our activities.

#### ***Pinnacle Trend Area Live Bottoms***

The activities proposed in this DOCD are not within 200 feet of any identified pinnacle features, nor do we propose any seafloor disturbing activities; therefore, no impacts to these features are expected from our operations.

#### ***Eastern Gulf Live Bottoms***

Although Viosca Knoll Block 823 is located in an area characterized by the existence of live bottom features, this lease does not contain any of these communities; nor did the Oil and Gas Lease for Lease OCS-G 10942 contain the Live Bottom Stipulation. As such, our operations will have no impact on any live bottom features.

#### ***Chemosynthetic Communities***

Chemosynthetic communities are typically found in water depths greater than 1,312 feet (400 meters). Our operations under this DOCD will be conducted in a water depth of 1,130 feet; therefore, no impacts to any chemosynthetic communities are expected.

#### ***Water Quality***

IPFs from our operations under this DOCD that could result in water quality degradation in Viosca Knoll Block 823 include effluents and accidents.

- *Effluents:* The EPA NPDES permit regulates levels of contaminants in drilling muds and cuttings and produced water discharges, discharge-rate restrictions and monitoring and toxicity testing, thereby eliminating many significant biological or ecological effects. Operational discharges are not expected to cause significant adverse impacts to water quality.
- *Accidents:* Oil spills have the potential to alter offshore water quality; however, it is unlikely that an accidental surface or subsurface spill would occur from the proposed activities. 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 Operator 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 of this DOCD).

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

### ***Fisheries***

IPFs from our proposed operations that could cause impacts to fisheries in Viosca Knoll Block 823 include effluents and accidents.

- *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 ***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 the upper slope in areas outside of anticyclones. IPFs that could cause impacts to marine mammals as a result of the proposed operations in Viosca Knoll Block 823 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 BOEM must be notified within 24 hours of the strike by email to [protectedspecies@boemre.gov](mailto: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 *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 and wastes sent to shore for treatment or disposal) 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 al., 1983b; Lohofener 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 BOEM must be notified within 24 hours of the strike by email to [protectedspecies@boem.gov](mailto:protectedspecies@boem.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 *Water Quality*). Response activities to an oil spill 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 and wastes sent to shore for treatment or disposal) from the proposed activities, which could impact sea turtles.

### *Air Quality*

The only impact producing factors from our proposed operations in this DOCD that could affect air quality onshore and offshore would be the rig and platform emissions from drilling, completion, and production of the new well and accidents (oil spills).

- *Emissions:* The project air emissions identified in Appendix H of this document are not expected to affect the air quality onshore primarily due to the distance to the nearest land being 50 miles away.

The surface location in Viosca Knoll Block 823 is within the 100-kilometer zone of the Breton Sound National Wildlife Area. Air emissions calculated for the activities proposed in this DOCD 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 Viosca Knoll Block 823 from the coastline (51 miles).

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)*

Viosca Knoll Block 823 is not located in or adjacent to an OCS block designated by BOEM as having a high probability for occurrence of shipwrecks; therefore, no impacts to any historic cultural resources are expected. However, W&T Energy VI, LLC will report to BOEM the discovery of any evidence of a shipwreck and make every reasonable effort to preserve and protect that cultural resource.

### *Prehistoric Archaeological Sites*

IPFs that could cause impacts to prehistoric archaeological sites as a result of the proposed operations in Viosca Knoll Block 823 are accidents (oil spills). To date there has been no encounters with any prehistoric cultural resources in this area.

- *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 *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 Viosca Knoll Block 823 include effluents and accidents. EFH includes all estuarine and marine waters and substrates in the Gulf of Mexico.

- *Effluents:* 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 *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 physical disturbances to the seafloor, emissions, wastes sent to shore for treatment or disposal, or discarded trash and debris) 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 *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 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 (51 miles), prevailing long-shore 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***

The only IPF from our activities that could impact wetlands areas include accidents (oil spills) and discarded trash and debris.

- *Accidents:* Oil spills could cause impacts to wetlands, however, it is unlikely that an oil spill would occur from the proposed activities (refer to *Water Quality*). Although relatively close to shore (51 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, wastes sent to shore for treatment or disposal, or discarded trash and debris) from the proposed activities, which could impact wetlands.

### ***Shore Birds and Coastal Nesting Birds***

IPFs from our proposed activities in Viosca Knoll Block 823 that could impact shore birds and coastal nesting birds include 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 *Water Quality*). Although relatively close to shore (51 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**).
- *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 Energy VI, LLC 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***

IPFs from the proposed activities that could cause impacts to the Breton Sound National Wildlife Refuge include emissions, accidents, and discarded trash and debris.

- *Emissions:* The projected air emissions identified in **Appendix H** are not expected to affect the OCS air quality primarily due to distance to the shore (51 miles).

Viosca Knoll Block 823 A platform is located within the 100-kilometer buffer for the Breton Wilderness Area. Air emissions calculated for the activities proposed in this DOCD are well below the acceptable allowance; therefore, no special mitigation, monitoring, or reporting is currently required.

- *Accidents:* An accidental oil spill from the proposed activities could cause impacts to coastal wildlife refuges. However, it is unlikely that an oil spill would occur from the proposed activities (refer to **Water Quality**). Although relatively close to shore (51 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**).
- *Discarded Trash and Debris:* Discarded trash and debris from operations conducted offshore can be detrimental to the wetlands areas and its inhabitants. W&T Energy VI, LLC operates under a Waste Management Plan regarding the storing, handling, and disposal of trash and debris. There could be a limited amount of trash and debris into the Gulf waters as a result of these operations, so impacts to any wetlands should be minimal, if at all. 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 Energy VI, LLC 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 are 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) are indoctrinated on waste procedures, and view the OOC Marine Debris video (or Microsoft PowerPoint presentation), “Think About It”. Thereafter, all personnel view the marine trash and debris training 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 coastal wildlife refuges.

### ***Wilderness Areas***

IPFs from our proposed activities that could cause impacts to a wilderness area include emissions, accidents (oil spills), and discarded trash and debris.

- *Emissions:* The project air emissions identified in Appendix H of this document are not expected to affect the OCS air quality primarily due to distance to the shoreline (51 miles).

The Viosca Knoll Block 823 A platform is located within the 100-kilometer buffer zone for the Breton Sound National Wildlife Refuge. Air emissions calculated for our proposed activities are well below the acceptable allowance; therefore, no special mitigation, monitoring, or reporting is currently required.

- *Accidents:* An accidental oil spill from the proposed activities could cause impacts to coastal wildlife refuges. However, it is unlikely that an oil spill would occur from the proposed activities (refer to *Water Quality*). Although relatively close to shore (51 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**).
- *Discarded Trash and Debris:* Discarded trash and debris from operations conducted offshore can be detrimental to the wetlands areas and its inhabitants. W&T Energy VI, LLC operates under a Waste Management Plan regarding the storing, handling, and disposal of trash and debris. There could be a limited amount of trash and debris into the Gulf waters as a result of these operations, so impacts to any wetlands should be minimal, if at all. 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 Energy VI, LLC 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 are 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) are indoctrinated on waste procedures, and view the OOC Marine Debris video (or Microsoft PowerPoint presentation), "Think About It". Thereafter, all personnel view the marine trash and debris training annually.

There are no other IPFs from the proposed activities that would cause impacts to wilderness areas.

#### **Q.4 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, Viosca Knoll Block 823 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 Location wells and platform
- Secure jack-up rig
- Evacuate personnel

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

C. Alternatives

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

D. Mitigation Measures

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

E. 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.

F. Preparer/Contact:

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

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

## **APPENDIX R - ADMINISTRATIVE INFORMATION**

### **R.1 Exempted Information Description**

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

### **R.2 Bibliography**

Initial DOCD (Plan Control No. N-4318) filed by BP Exploration & Oil Inc.

Initial DOCD (Plan Control No. N-6515) filed by TOTAL E&P USA, INC.