

UNITED STATES GOVERNMENT
MEMORANDUM

October 13, 2023

To: Public Information
From: Plan Coordinator, Plans Section

Subject: Public Information copy of plan

Control # - S-08127
Type - Supplemental Development Operations Coordinations Document
Lease(s) - OCS-G21685 Block - 308 South Timbalier Area
OCS-G34878 Block - 1009 Ewing Bank Area
OCS-G34879 Block - 1010 Ewing Bank Area
RUE(s) - OCS-G30402 Block - 39 Green Canyon Area
Operator - QuarterNorth Energy LLC
Description - Subsea wells A and B
Rig Type - Drillship

Attached is a copy of the subject plan.

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

Laura Christensen
Plan Coordinator

Site Type/Name	Botm Lse/Area/Blk	Surface Location	Surf Lse/Area/Blk
FIXED/A		6452 FNL, 7075 FWL	G21685/ST/308
WELL/A	G34879/EW/1010	3775 FNL, 7831 FWL	/GC/39
WELL/B	G34878/EW/1009	3775 FNL, 7831 FWL	/GC/39

INITIAL JOINT DEVELOPMENT OPERATIONS COORDINATION DOCUMENT

**LEASE OCS-G 34878, EWING BANK 1009
LEASE OCS-G 34879, EWING BANK 1010
RUE OCS-G 30402, GREEN CANYON BLOCK 39**

Substantive changes to the Initial Joint Development Operations Coordination Document are noted in the table below.

Record of Change:

Date	Summary of Change
10/03/23	<ul style="list-style-type: none">• Updated OSRP Information in Section H
09/19/23	<ul style="list-style-type: none">• Confirmed proposed rig will be a drillship• Updated BOEM-0137 public & prop forms to correct surface & bottom Y coordinates

**INITIAL JOINT
DEVELOPMENT OPERATIONS
COORDINATION DOCUMENT**

**LEASE OCS-G 34878, EWING BANK 1009
LEASE OCS-G 34879, EWING BANK 1010
RUE OCS-G 30402, GREEN CANYON BLOCK 39**

PUBLIC INFORMATION COPY

Submitted by:

QUARTER^oNORTH
ENERGY

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SECTION A PLAN CONTENTS

(a) Description, objectives, and schedule

QuarterNorth Energy LLC (QNE) submits this Initial Joint Development Operations Coordination Document (DOCD) for the following proposed operations:

- Drilling, evaluation, completion and subsea wellhead installation of **Ewing Bank 1010, Well Location A.**
- Drilling, evaluation, completion and subsea wellhead installation of **Ewing Bank 1009, Well Location B.**
- Construction, maintenance and operation of the associated 80' foot long, 8.625" inch well jumper to be installed from the proposed well location to the Katmai ILS all in RUE OCS-G 03042, Green Canyon Block 39.

Well	Surface Location	Bottom Hole Location
Location A	RUE OCS-G 30402, Green Canyon 39	Lease OCS-G 34879, Ewing Bank 1010
Location B	RUE OCS-G 30402, Green Canyon 39	Lease OCS-G 34878, Ewing Bank 1009

Production from Well Location A or Well Location B will tieback to QNE's existing South Timbalier Block 308 A (Tarantula) Platform, CID No. 1500-1.

The Bureau of Ocean Energy Management (BOEM) granted Right-of-Use and Easement (RUE) approval for Green Canyon Block 39, RUE OCS-G 30402 on July 22, 2022.

Lease OCS-G 34878, Ewing Bank Block 1009 and Lease OCS-G 34879, Ewing Block 1010 are part of the Green Canyon (GC) 40 Unit Agreement, No. 754318002.

The unit was approved effective April 1, 2018, and consists of GC Block 41, portions of GC Blocks 39 and 40, and Ewing Bank (EW) Blocks 1009, 1010, and 1011, OCS-G 34537, 34966, 34536, 34878, 34879, and 34880, respectively.

See attached OCS Plan Information Form, Form BOEM-137, included under this section showing the proposed activity schedule as **Attachment A-1.**

(b) Location

A Well Location Map showing the proposed surface location of each well is included in this plan as **Attachment A-2** and pipeline location plat as **Attachment A-3.** Dynamically positioned vessels will be used to install the proposed well jumper. No anchors will be used.

(c) Drilling unit description

QuarterNorth will use a dynamically positioned drillship or vessel with subsea BOPs and will comply with all of the regulations of the ABS, IMO and USCG. All drilling operations will be conducted under the provisions of 30 CFR, Part 250, Subpart D, and other applicable regulations and notice to lessees, including those regarding the avoidance of potential drilling hazards and safety and pollution prevention control. Such measures as inflow detection and well control, monitoring for loss of circulation and seepage loss, and casing design will be our primary safety measures.

Pollution prevention measures include installation of curbs, gutters, drip pans, and drains on drilling deck areas to collect all contaminants and debris. All discharges will be in accordance with applicable EPA NPDES permits.

(d) Storage Tanks and/or Production Vessels:

Type of Storage Tank	Type of Facility	Avg Tank Capacity (BBLs)	Number of Tanks	Total Capacity (BBLs)	Fluid Gravity
Water Ballast Tanks	Drillship	17,366	27	468,876	1.02 (SG)
Fresh Water Tanks	Drillship	2,241	4	8,964	1.00 (SG)
Diesel Oil Tanks	Drillship	6,380	6	38,282	26 (API)
Lubricating Oil Tanks	Drillship	170	6	1,023	26 (API)
Misc Tanks (Drain/Bilge)	Drillship	1,569	9	14,121	0.7-2.1 (SG)
Drilling Tanks	Drillship	7,581	2	15,162	0.7-2.1 (SG)
Other Tanks (Mud/Brine Storage)	Drillship	1,974	12	23,693	0.7-2.1 (SG)
Topside Mud Tanks	Drillship	301	22	6,622	0.7-2.1 (SG)

All facility tanks of 25 barrels or more.

(e) Pollution Prevention Measures and (f) Additional Measures

Per NTL 2008-G04, pollution prevention measures and additional measures information is not required.

(f) Service fee

A Pay.gov receipt is being included in this plan as **Attachment A-4** in the amount of \$10,034.00 to cover the cost and processing fee for the proposed operations being conducted under this plan.

ATTACHMENTS:

- 1) Attachment A-1 - Form BOEM-137
- 2) Attachment A-2 – Location Plat (Well Location A & B)
- 3) Attachment A-3 – Well Jumper Location Plat
- 4) Attachment A-4 – Pay.gov Receipt

OCS PLAN INFORMATION FORM

General Information									
Type of OCS Plan:	Exploration Plan (EP)		Development Operations Coordination Document (DOCD)					X	
Company Name: QuarterNorth Energy LLC			BOEM Operator Number: 03672						
Address:			Contact Person: Melissa Guidry						
3737 Buffalo Speedway, Suite 800			Phone Number: 713-969-1310						
Houston, Texas 77098			E-Mail Address: melissa.guidry@qnenergy.com						
If a service fee is required under 30 CFR 550.125(a), provide the				Amount paid	10,034.00	Receipt No.			
Project and Worst Case Discharge (WCD) Information									
Lease(s): RUE G-30402, G34878, G34879		Area: GC, EW		Block(s): <small>39, 1009, 1010</small>		Project Name (If Applicable): Katmai West #2			
Objective(s)		<input checked="" type="checkbox"/> Oil	<input checked="" type="checkbox"/> Gas	<input type="checkbox"/> Sulphur	<input type="checkbox"/> Salt	Onshore Support Base(s): Fourchon, LA			
Platform/Well Name: Well Loc A			Total Volume of WCD: 421,050			API Gravity: 37.9°			
Distance to Closest Land (Miles): 78			Volume from uncontrolled blowout: 421,050						
Have you previously provided information to verify the calculations and assumptions for your WCD?							Yes	<input checked="" type="checkbox"/>	No
If so, provide the Control Number of the EP or DOCD with which this information was provided									
Do you propose to use new or unusual technology to conduct your activities?							<input checked="" type="checkbox"/>	Yes	No
Do you propose to use a vessel with anchors to install or modify a structure?							Yes	<input checked="" type="checkbox"/>	No
Do you propose any facility that will serve as a host facility for deepwater subsea development?							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		
Drill, Complete, TA & Installation of Subsea Wellhead			04/01/2024		10/08/2024		190		
Installation of lease term well jumper			10/09/2024		10/30/2024		21		
Commence Production			10/31/2024						
Description of Drilling Rig					Description of Structure				
Jackup		<input checked="" type="checkbox"/>	Drillship		Caisson		Tension leg platform		
Gorilla Jackup		<input type="checkbox"/>	Platform rig		Fixed platform		Compliant tower		
Semisubmersible		<input type="checkbox"/>	Submersible		Spar		Guyed tower		
DP Semisubmersible		<input type="checkbox"/>	Other (Attach Description)		Floating production system		Other (Attach Description)		
Drilling Rig Name (If Known):									
Description of Lease Term Pipelines									
From (Facility/Area/Block)		To (Facility/Area/Block)		Diameter (Inches)		Length (Feet)			
GC39		GC39 ILS		8.625"		80'			

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

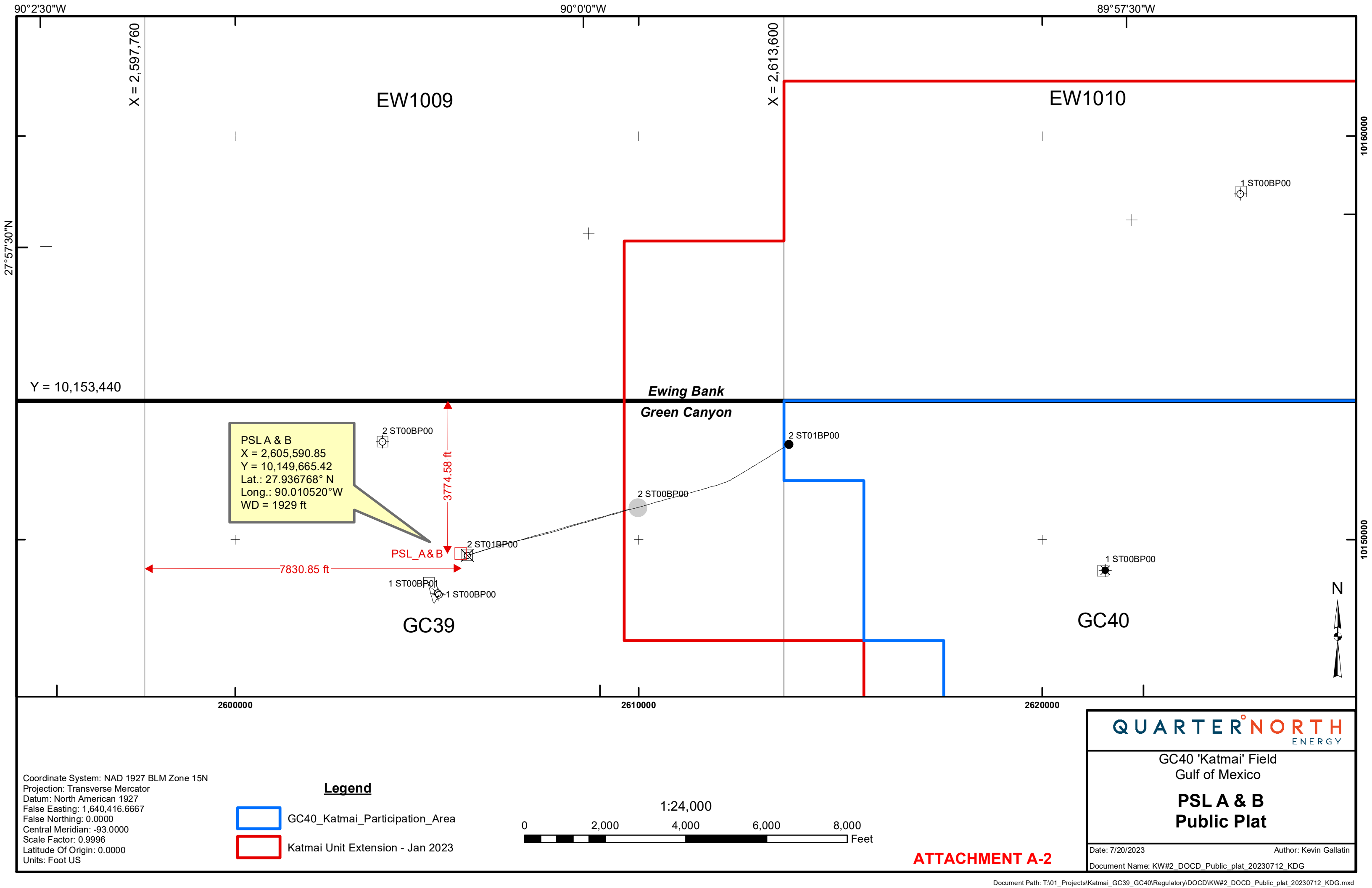
Proposed Well/Structure Location									
Well or Structure Name/Number (If renaming well or structure, reference previous name): A-Tarantula				Previously reviewed under an approved EP or DOCD?		<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
Is this an existing well or structure?		<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No	If this is an existing well or structure, list the Complex ID or API No.		1500-1	
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 (For Wells)			Completion (For multiple completions, enter separate lines)		
Lease No.	OCS G-21685			OCS			OCS OCS		
Area Name	South Timbalier								
Block No.	308								
Blockline Departures (in feet)	N/S Departure: F _N ___ L			N/S Departure: F ___ L			N/S Departure: F ___ L		
	6,452' FNL						N/S Departure: F ___ L		
	E/W Departure: F _W ___ L			E/W Departure: F ___ L			E/W Departure: F ___ L		
	7,075' FWL						E/W Departure: F ___ L		
Lambert X-Y coordinates	X: 2,356,445.22'			X:			X:		
	Y: -182,040.84'			Y:			Y:		
Latitude/ Longitude	Latitude 28° 9' 41.0904"			Latitude			Latitude		
	Longitude -90° 13' 39.45"			Longitude			Longitude		
Water Depth (Feet): 484'				MD (Feet):		TVD (Feet):		MD (Feet): TVD (Feet):	
Anchor Radius (if applicable) in feet:					N/A				
Anchor Locations for Drilling Rig or Construction Barge (If anchor radius supplied above, not necessary)									
Anchor Name or No.	Area	Block	X Coordinate		Y Coordinate		Length of Anchor Chain on Seafloor		
			X =		Y =				
			X =		Y =				
			X =		Y =				
			X =		Y =				
			X =		Y =				
			X =		Y =				
			X =		Y =				

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

Proposed Well/Structure Location										
Well or Structure Name/Number (If renaming well or structure, reference previous name): Well Location A				Previously reviewed under an approved EP or DOCD?			Yes	No		X
Is this an existing well or structure?		Yes	No	If this is an existing well or structure, list the Complex ID or API No.			N/A			
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?							X	Yes	No	
WCD info	For wells, volume of uncontrolled blowout (Bbls/day): 421,050			For structures, volume of all storage and pipelines (Bbls): 0			API Gravity of fluid		37.9°	
Surface Location				Bottom-Hole Location (For Wells)			Completion (For multiple completions, enter separate lines)			
Lease No.	OCS RUE OCS-G 30402			OCS			OCS OCS			
Area Name	Green Canyon									
Block No.	39									
Blockline Departures (in feet)	N/S Departure: F _N L			N/S Departure: F L			N/S Departure: F L			
	3775' FNL						N/S Departure: F L			
	E/W Departure: F _W L			E/W Departure: F L			E/W Departure: F L			
	7831' FWL						E/W Departure: F L			
Lambert X-Y coordinates	X: 2,605,590.85'			X:			X:			
	Y: 10,149,665.42'			Y:			Y:			
Latitude/ Longitude	Latitude 27° 56' 12.3648"			Latitude			Latitude			
	Longitude -90° 0' 37.8714"			Longitude			Longitude			
Water Depth (Feet): 1929'				MD (Feet):		TVD (Feet):		MD (Feet):		TVD (Feet):
Anchor Radius (if applicable) in feet:					N/A			MD (Feet):		TVD (Feet):
Anchor Locations for Drilling Rig or Construction Barge (If anchor radius supplied above, not necessary)										
Anchor Name or No.	Area	Block	X Coordinate	Y Coordinate	Length of Anchor Chain on Seafloor					
			X =	Y =						
			X =	Y =						
			X =	Y =						
			X =	Y =						
			X =	Y =						
			X =	Y =						
			X =	Y =						

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

Proposed Well/Structure Location										
Well or Structure Name/Number (If renaming well or structure, reference previous name): Well Location B				Previously reviewed under an approved EP or DOCD?			Yes	No		X
Is this an existing well or structure?		Yes	No	If this is an existing well or structure, list the Complex ID or API No.			N/A			
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?							X	Yes	No	
WCD info	For wells, volume of uncontrolled blowout (Bbls/day): 421,050			For structures, volume of all storage and pipelines (Bbls): 0			API Gravity of fluid		37.9°	
Surface Location				Bottom-Hole Location (For Wells)			Completion (For multiple completions, enter separate lines)			
Lease No.	OCS RUE OCS-G 30402			OCS			OCS OCS			
Area Name	Green Canyon									
Block No.	39									
Blockline Departures (in feet)	N/S Departure: F _N L			N/S Departure: F L			N/S Departure: F L			
	3775' FNL						N/S Departure: F L			
	E/W Departure: F _W L			E/W Departure: F L			E/W Departure: F L			
	7831' FWL						E/W Departure: F L			
Lambert X-Y coordinates	X: 2,605,590.85'			X:			X:			
	Y: 10,149,665.42'			Y:			Y:			
Latitude/ Longitude	Latitude 27° 56' 12.3648"			Latitude			Latitude			
	Longitude -90° 0' 37.8714"			Longitude			Longitude			
Water Depth (Feet): 1929'				MD (Feet):		TVD (Feet):		MD (Feet):		TVD (Feet):
Anchor Radius (if applicable) in feet:					N/A			MD (Feet):		TVD (Feet):
Anchor Locations for Drilling Rig or Construction Barge (If anchor radius supplied above, not necessary)										
Anchor Name or No.	Area	Block	X Coordinate	Y Coordinate	Length of Anchor Chain on Seafloor					
			X =	Y =						
			X =	Y =						
			X =	Y =						
			X =	Y =						
			X =	Y =						
			X =	Y =						
			X =	Y =						



PSL A & B
 X = 2,605,590.85
 Y = 10,149,665.42
 Lat.: 27.936768° N
 Long.: 90.010520° W
 WD = 1929 ft

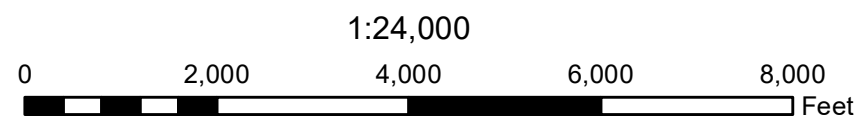
7830.85 ft

3774.58 ft

Coordinate System: NAD 1927 BLM Zone 15N
 Projection: Transverse Mercator
 Datum: North American 1927
 False Easting: 1,640,416.6667
 False Northing: 0.0000
 Central Meridian: -93.0000
 Scale Factor: 0.9996
 Latitude Of Origin: 0.0000
 Units: Foot US

Legend

- GC40_Katmai_Participation_Area
- Katmai Unit Extension - Jan 2023



QUARTER NORTH
ENERGY

GC40 'Katmai' Field
Gulf of Mexico

**PSL A & B
Public Plat**

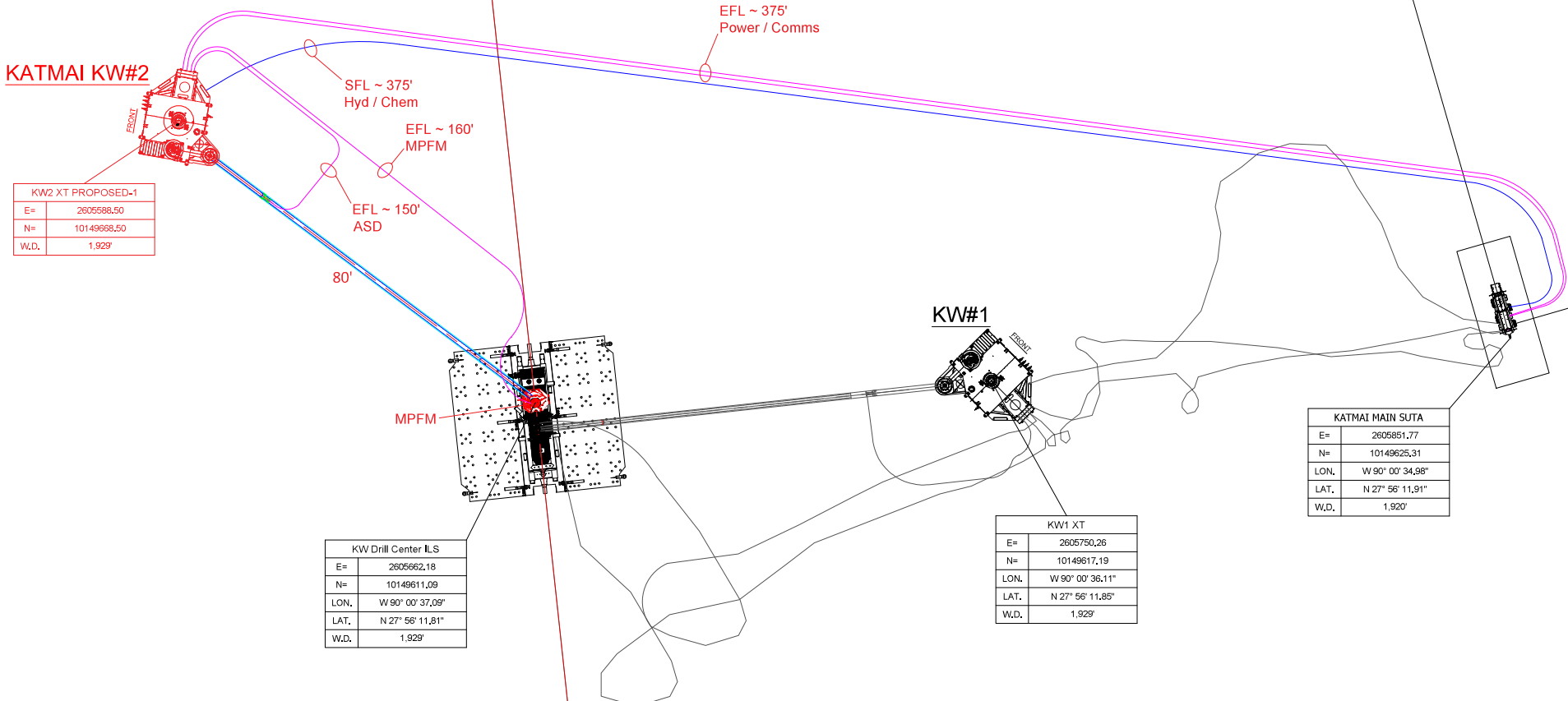
Date: 7/20/2023 Author: Kevin Gallatin

Document Name: KW#2_DOCD_Public_plat_20230712_KDG

ATTACHMENT A-2

GC 39

OCS-G-36331
QuarterNorth Energy



From: notification@pay.gov
Sent: Wednesday, August 30, 2023 3:10 PM
To: Melissa Guidry
Subject: Pay.gov Payment Confirmation: BOEM Development/DOCD Plan - BD

External: This Email is from an external sender. Be alert for Phishing. Do not click links if you do not know the sender.



An official email of the United States government



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

Application Name: BOEM Development/DOCD Plan - BD
Pay.gov Tracking ID: 277I8077
Agency Tracking ID: 76489716641
Transaction Type: Sale
Transaction Date: 08/30/2023 04:10:10 PM EDT
Account Holder Name: Brenda Montalvo
Transaction Amount: \$10,034.00
Card Type: MasterCard
Card Number: *****9382

Region: Gulf of Mexico
Contact: Melissa Guidry (713) 969-1310
Company Name/No: QuarterNorth Energy LLC, 03672
Lease Number(s): 34878, 34879, 30402
Area-Block: Ewing Bank EW, 1009: Ewing Bank EW, 1010: Green Canyon GC, 39
Type-Wells: Initial Plan, 2

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**SECTION B
GENERAL INFORMATION**

(a) Applications and Permits

<i>Application</i>	<i>Purpose</i>	<i>Agency</i>	<i>Status</i>
Application for Permit to Drill	Drill Location A	BSEE	To be submitted
Managed Pressure Drilling	Drill Location A	BSEE	To be submitted
Pipeline Installation	Lease Term Well Jumper	BSEE	To be submitted
Surface Commingling	Revision to existing ST 308 A Surface Commingling Agreement	BSEE	To be submitted
DWOP	Deepwater Operations Plan	BSEE	To be submitted
CID	Conservation Information Document	BOEM	To be submitted

(b) Drilling Fluids

The drilling fluids for the proposed operations being conducted under this plan are described in Table 1 under Section F of this plan.

(c) Production

Proprietary Information.

(d) Chemical products

Per NTL 2008-G04, chemical products information is not required.

(e) New or unusual technology

QuarterNorth Energy proposes the use of MPD to execute the proposed drilling activities.

(f) Bonds, oil spill financial responsibility, and well control statements

The bond requirements for the activities and facilities proposed in this IDOCD are satisfied by a \$3,000,000.00 area-wide bond, furnished and maintained according to 30 CFR 556.901; NTL No. 2015-BOEM-N04 "General Financial Assurance;" and additional security under 30 CFR 556.901 (d) - (f) and NTL No. 2016-BOEM N01, "Requiring Additional Security."

QuarterNorth Energy LLC (BOEM company number 03672) has demonstrated oil spill financial responsibility for the facilities proposed in this R-EP according to 30 CFR Part 553; and NTL No. 2008-N05, "Guidelines for Oil Spill Financial Responsibility for Covered Facilities."

(g) Well Control Statement

QuarterNorth Energy LLC (BOEM company number 03672) will have the financial capability to drill a relief well and conduct any other emergency well control operation.

(g) Suspensions of production or operations

The Bureau of Ocean Energy Management (BOEM) granted Right-of-Use and Easement (RUE) approval for Green Canyon Block 39, RUE OCS-G 30402 on July 22, 2022.

Lease OCS-G 34878, Ewing Bank Block 1009 and Lease OCS-G 34879, Ewing Block 1010 are part of the Green Canyon (GC) 40 Unit Agreement, No. 754318002.

Unit Agreement No. 754318002 was approved effective April 1, 2018, and consists of GC Block 41, portions of GC Blocks 39 and 40, and Ewing Bank (EW) Blocks 1009, 1010, and 1011, OCS-G 34537, 34966, 34536, 34878, 34879, and 34880, respectively.

(h) Blowout scenario

The only hydrocarbon bearing hole section for the planned well is the 12-1/4” section. The drilling blowout scenario is based on three different sands – Kat8, Purple, and Grey. The Kat8 sand is water bearing and the Purple and Grey are both oil bearing. At the time of the blowout the wellbore consists of 14” x 14.15” casing from the subsea wellhead to 24,300’ MD / 21,787’ TVD. The 12-1/4” open hole section extends from that casing point through all 3 sands. In this scenario, the well is assumed to flow through the unrestricted 12-1/4” open hole section and 12.36” ID casing to the wellhead with seawater hydrostatic as back pressure at the wellhead. The assumed cause of the blowout is a BOP failure during a well control event.

WCD Calculation

QuarterNorth Energy has contracted JCC (J. Connor Consulting, Inc) to perform the detailed engineering calculations for WCD flow rate estimates. Geological and geophysical inputs from nearby offset wells were provided to JCC for this analysis. Summary table to results below:

Sand(s)	Oil Rate/STB/Day	Gas Rate/MMSCFD	Water/Rate/MPD
Kat8	0	0	38,100
Kat8+Purple	299,050	750	41.950
Kat8+Purple+Gray	421,050	1,193	27,400

Duration of Drilling Blowout Scenario

The duration of the blowout is dependent on the characteristics of the blowout. The flow will continue until the well is capped, a relief well is drilled, or the well bridges over.

Scenarios exist in which the duration of the WCD has the potential to flow from hours to months depending on the condition of the well at the time of the discharge as outlined below:

- The well could bridge over due to wellbore instability which should happen relatively early in the WCD scenario.
- Containment blowout preventer equipment (BOPE) is installed and closed using a prescribed procedure shutting in the well and eliminating the discharge. This would require 7 – 21 days to accomplish – this time may be impacted by any combination of circumstances, such as weather, air quality, and/or debris removal operations. The range for the worst case volume discharge is between 2.9 and 8.8 million cumulative barrels of oil.
- Damaged riser material may need to be removed prior to any containment equipment installation, which could take considerable time depending on the amount and complexity of debris. It could take several weeks to a few months to clear a connection for the BOPE to eliminate the release of fluid.
- If all intervention attempts are unsuccessful, the well could flow until intercepted and killed by a relief well. The estimated time to drill a relief well is approximately 187 days which includes the time to secure a DP rig and bring it to the location. This is the worst case duration for the blowout and the associated worst case volume discharge is 78.9 million cumulative barrels of oil.

Potential of Open Hole to Bridge Over

Due to the unrestricted flow of a WCD scenario, the well has the potential to experience a downhole rock failure. The primary failure mechanism would be wellbore instability caused by the reduced wellbore pressure. The in-situ stresses that exist in the reservoir rock are held in place by the hydrostatic pressure of the weighted drilling fluid in the wellbore. If the wellbore pressure is reduced, the high in situ stresses are no longer opposed by the weighted drilling fluid and the in-situ rock may fail and collapse into the wellbore causing the wellbore to bridge over where the failed rock fragments accumulate and lodge downhole to prevent the well discharge from continuing. The presence of water in the blowout fluid increases the potential for bridging to occur because of shale hydration and swelling.

Likelihood for Surface Intervention to Stop Blowout

There is a high likelihood that a combined surface and subsea intervention would contain the blowout. As a member of HWCG, QuarterNorth Energy has access to and can deploy surface and subsea containment resources adequate to promptly respond to a blowout or loss of well control. The wells are designed to handle the worst case shut-in pressure and contain all wellbore fluids in the formations below salt.

Availability of Drilling Rig for a Relief Well

QuarterNorth Energy actively tracks the rigs that are available in the Deepwater Gulf of Mexico (GoM) marketplace. The requirement for the rig are:

- Dynamically positioned drillship or semi-submersible
- Capable of operating in ~1,900 ft water depth
- Max drill depth at least 27,000 ft MD
- MPD ready

As of July 2024, there are 16 DP rigs with MPD capability actively working in the GoM that can drill a relief well for this blowout scenario.

Estimate Time to Drill a Relief Well

Given the current availability of suitable rigs in the GoM, a candidate rig could be identified within 1-2 days and mobilization and contracting commenced. Backup tubulars and wellhead systems are maintained in stock for each well. Mobilization of the rig, as well as mobilization of equipment and services to the rig could be completed in 18 days, concurrent with contract execution. As per current well time estimates and based on the estimated number of ranging runs required to intercept the well the full relief well time estimate is presented in the table below.

Description	Estimated Days	Estimated Cumulative Days
Well Control Assessment	2	2
Contract and mobilize rig, source equipment	18	20
Drill to detection depth to begin mag-ranging	60	80
Mag-range prior to setting 14" casing	74	154
Run and cement 14" casing	4	158
Drill out, mag-range, intersect	25	182
R/U pumping equipment and perform kill	5	187

Relief Well Time Estimate Assumptions:

QuarterNorth Energy LLC
Green Canyon Block 39 (RUE OCS-G 30402)
Ewing Bank Block 1009 (OCS-G 34878)
Ewing Bank Block 1010 (OCS-G 34879)

August 31, 2023
Initial Joint DOCD

- 35% NPT
- Total of 16 ranging run
- MPD required below salt

There are no platforms in the vicinity of the planned wells making it not feasible to drill a relief well from a nearby platform.

Measures for Blowout Prevention

Certain measures will be taken to prevent and reduce the likelihood of a blowout as described in the WCD discharge scenario. The blowout prevention measures provide additional assurance in improving the safety of offshore oil and gas drilling. Key measures taken for blowout prevention include but are not limited to:

- Complying with all Federal rules and regulations: CFRs, NTLs, and Final Rules.
- Following provisions in API RP 65-Part 2 and API RP 53.
- Utilizing QuarterNorth Energy management systems: Safety and Environmental Management System (SEMS), Management of Change (MOC), and/or appropriate bridging documents to contractor's Safety Management Systems.
- Utilizing established well control practices, guidelines, and procedures.
- Ensuring proper physical barriers are in place to prevent uncontrolled flow.
- Utilizing established negative testing procedures and BSEE approved fluid displacement procedures.
- Utilizing experienced and fully trained personnel.
- Adhering strictly to well monitoring.
- Certifying that the BOPE is fit for purpose.
- Utilizing a rig and equipment fit for purpose.
- Utilizing a professionally certified and peer reviewed well design (casing and cementing).
- Engaging contractors in meetings to gain alignment on well plan.
- Utilization of MPD which proved successful on offset well
- Utilizing specific procedures to execute well plan, incorporating lessons learned from offset wells

Early Intervention in the Event of a Blowout

QuarterNorth Energy has access to and can deploy surface and subsea containment resources adequate to promptly respond to a blowout or loss of well control. If all attempts to shut-in the well with the rig's BOP fail, QuarterNorth Energy plans to utilize the HFRS containment system for intervention. Procedures have been developed and equipment has been identified for a fast deployment. Service companies who support the operation and their specific equipment have been identified and documented during several technical sessions to mature the well containment response. Procedures have been developed for: debris removal, BOP and/or lower marine riser package and/or riser removal, capping stack installation, well shut-in, and static top kill operations.

Well Containment

In the event of a WCD scenario blowout, the wells are designed to handle the worst case shut-in pressure and contain all wellbore fluids in the formations below salt. This wellbore integrity and containment will allow the HWCG 15K subsea capping stack to be utilized to its full potential of capping and killing the well in a timely manner.

Relief Well Arrangements

The team has identified relief well locations and evaluated the necessary materials and services for drilling the well. It has been confirmed that all these prerequisites could be provided if the need for a relief well arises.

Conclusion

QuarterNorth Energy has determined a Worst Case Discharge (WCD) rate of 421,050 BO/D, 1,193 MMscf/D and 27,400 BW/D based on detailed engineering calculations using geological and geophysical inputs from nearby offset wells. The WCD scenario assumes the Kat8, Purple, and, Grey sands are flowing through an unobstructed wellbore in the event there is a failure to close the BOP's. QuarterNorth Energy has the resources to respond to this Worst Case Discharge (WCD) scenario in a timely manner.

(i) Contact information

Description	Name	Phone Number	Email
Primary	Melissa Guidry	713-969-1310	melissa.guidry@qnenergy.com
Secondary	Brenda Montalvo	713-969-1084	brenda.montalvo@qnenergy.com

SECTION B
GEOLOGICAL AND GEOPHYSICAL INFORMATION

(a) Geological description

Proprietary Information.

(b) Structure contour Map(s)

Proprietary Information.

(c) Two dimensional (2-D) or three-dimensional (3-D) seismic lines

Proprietary Information.

(d) Geological cross-sections

Proprietary Information.

(e) Shallow hazards report

The proposed operations will be conducted from a previously approved surface location as provided for in Noble Energy LLC's previously approved Exploration Plan (Control No. 9910); report prepared by Fugro GeoConsulting, Inc. entitled Updated Shallow Geohazards Assessment Katmai Prospect (FGCI Report No. 27.1502-2854).

(f) Shallow hazards assessment

The proposed operations will be conducted from the Bureau of Ocean Energy Management previously approved surface location in Noble Energy LLC's previously approved Exploration Plan Control No. 9910; therefore, a shallow hazards assessment is not being provided.

(g) High resolution seismic lines

Proprietary Information.

(h) Stratigraphic column

Per NTL No. 2008-G04, a Stratigraphic column is not required for DOCDs submittals in the Gulf of Mexico Region.

(i) Time-versus-depth chart

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

(j) Geochemical information.

Per NTL No. 2008-G04, Geochemical Information is not required for DOCDs submittals in the Gulf of Mexico Region.

(k) Future G&G activities

Per NTL No. 2008-G04, Future G&G activities information is not required for DOCDs submittals in the Gulf of Mexico Region.

SECTION C
HYDROGEN SULFIDE

(a) Concentration

QuarterNorth Energy LLC does not anticipate encountering any H₂S during the proposed operations.

(b) Classification

In accordance with 30 CFR 550.215(b), QNE requests that Ewing Bank Block 1010 be classified by BSEE as H₂S “absent.”.

In accordance with 30 CFR 550.215(b), Green Canyon Block 39 and Ewing Bank Block 1009 have been classified as H₂S absent in the Initial Exploration Plan Control No. 9910 approved on 12/01/15.

(c) H₂S contingency plan

QuarterNorth Energy LLC does not anticipate encountering any H₂S during the proposed operations.

(d) Modeling report

QuarterNorth Energy LLC does not anticipate encountering any H₂S during the proposed operations therefore, a modeling report is not required at this time.

SECTION D
MINERAL RESOURCE CONSERVATION INFORMATION

(a) Technology and reservoir engineering practices and procedures

Proprietary Information.

(b) Technology and recovery practices and procedures

Proprietary Information.

(c) Reservoir Development

Proprietary Information.

SECTION E
BIOLOGICAL, PHYSICAL AND SOCIOECONOMIC INFORMATION

(a) Deepwater Benthic Communities

The water depths in the study area exceed 300 meters (984 feet), the minimum depth for deepwater benthic community potential as outlined in NTL No. 2009-G40. NTL No. 2009-G40 states a separation distance of 250-feet for seafloor disturbances and 2000-feet for drill centers. The multibeam, side scan sonar, subbottom profiler data, and 3D seismic seafloor amplitudes were reviewed for high-density deepwater communities. No features were identified within 250-feet of the proposed well jumpers that could support high-density deepwater benthic communities.

Dynamically positioned vessels will be used, therefore, no anchors are proposed to be utilized.

(b) Topographic features map

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

(c) Topographic Features Statement

Per NTL 2008-G04, topographic features information is not required for DOCDs.

(d) Live bottoms (pinnacle trend) map

Green Canyon Block 39, Ewing Bank Block 1009 and Ewing Bank Block 1010 are not located within 61 meters (200 feet) of any live-bottom (pinnacle trend) features.

(e) Live bottoms (low relief) map

Green Canyon Block 39, Ewing Bank Block 1009 and Ewing Bank Block 1010 are not located within 100 feet of any live-bottom (low-relief) features.

(f) Potentially sensitive biological features

Green Canyon Block 39, Ewing Bank Block 1009 and Ewing Bank Block 1010 are not located within 30 meters (100 feet) of potentially sensitive biological features.

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

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

(h) Air and Water Quality Information and (i) Socioeconomic Information

Per NTL 2008-G04, air and water quality information and socioeconomic information are not required for DOCD's outside the state of Florida.

SECTION F
WASTES AND DISCHARGES INFORMATION

(a) Projected generated wastes and (b) Projected ocean discharges

Table 1 – Waste estimated to be generated, treated and/or downhole disposes or discharged to the GOM is enclosed as **Attachment F-1**.

(c) National Pollutant Discharge Elimination System (NPDES) permit

Per NTL 2008-G04, NPDES permit information is not required for operations performed under this IDOCD.

(d) Modeling Report

Per NTL 2008-G04, a modeling report is not required for operations performed under this IDOCD.

(e) Projected cooling water intake

Per NTL 2008-G04, project cooling water intake information is not required for operations performed under this IDOCD.

ATTACHMENT

- 1) Attachment F-1 – Table 1_Waste estimated to be generated, treated and/or downhole disposes or discharged to the GOM.

TABLE 1. WASTE ESTIMATED TO BE GENERATED, TREATED AND/OR DOWNHOLE DISPOSED OR DISCHARGED TO THE GOM

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

Projected generated waste			Projected ocean discharges		Projected Downhole Disposal
Type of Waste	Composition	Projected Amount	Discharge rate	Discharge Method	Answer yes or no
Will drilling occur ? If yes, you should list muds and cuttings					
<i>EXAMPLE: Cuttings wetted with synthetic based fluid</i>	<i>Cuttings generated while using synthetic based drilling fluid.</i>	<i>X bbl/well</i>	<i>X bbl/day/well</i>	<i>discharge overboard</i>	<i>No</i>
Water-based drilling fluid	Na Cl base fluid	10,000-20,000 bbl/well	10,000-20,000 bbl/day(-1-2 days only)	Riserless at seafloor	No
Synthetic based drilling fluid	Internal Olefine base fluid	1702 bbl/well	85 bbl/day	Overboard with cuttings	No
Cuttings wetted with water-based fluid	Cuttings generated while using synthetic based drilling fluid.	2,929 bbl/well	2,929 (-1-2 days only)	Riserless at seafloor	No
Cuttings wetted with synthetic-based fluid	Cuttings generated while using synthetic based drilling fluid.	6,806 bbl/well	340 bbl/day	Overboard	No
Will humans be there? If yes, expect conventional waste					
<i>EXAMPLE: Sanitary waste water</i>	<i>Sanitary waste from living quarters</i>	<i>X bbl/well</i>	<i>X bbl/hr/well</i>	<i>chlorinate and discharge overboard</i>	<i>No</i>
Domestic waste	Grey Water	412 bbls/well	.096 bbl/hr	Overboard	No
Sanitary waste	Black Water	9,833 bbls/well	2.29 bbls/hr	Chlorinated and discharged overboard	No
Is there a deck? If yes, there will be Deck Drainage					
Deck Drainage	Rain Water	1,873 - 3,753 bbls/well	.44 - .87 bbl/hr	Sheen test, discharged overboard (rain/rig wash) Processed (any other fluids)	No
Engine Room sludge	Oil/Water	1,164 bbls/wells	.27 bbl/hr	Sent ashore for disposal	No
Will you conduct well treatment, completion, or workover?					
Well treatment fluids	11.5 ppg Sodium Bromide	2,983 bbls/well	500 bbls/treatment	Discharge overboard	No
Well completion fluids	16.5 ppg Zinc Bromide	59,667 bbls/well	N/A (Zero Discharge)	N/A	No
Workover fluids	N/A	N/A	N/A	N/A	N/A
Miscellaneous discharges. If yes, only fill in those associated with your activity.					
Desalinization unit discharge	Saltwater/Freshwater	128,349 bbls/well	30 bbls/hr	Directly overboard below waterline	No
Blowout prevent fluid	BOP Fluid	376 bbls/well	.0873 bbl/hr	Discharged through BOP during functioning	No
Ballast water	Saltwater	N/A	N/A	During drilling operations ballast is moved port to starboard to adjust trim	No
Bilge water	Oily Water	1,390 bbls/well	.32 bbl/hr	Through 15 ppm meter	No
Fire water	Saltwater	376 bbls/well	.0873 bbl/hr	Directly overboard during fire pump testing	No
Cooling water	Saltwater	111,142,699 bbls.well	25,871 bbls/hr	Directly overboard	No
Excess cement at seafloor	Cement and Additives	400-800 bbls/well	N/A	Riserless at seafloor	No
Will you produce hydrocarbons? If yes fill in for produced water.					
Produced water		N/A		N/A	No
Please enter individual or general to indicate which type of NPDES permit you will be covered by?					
			General		

SECTION G
AIR EMISSIONS

(a) Emissions Worksheets and Screening Questions

(1) Emissions Worksheets

Enclosed under this section are one set of emissions worksheets showing the emissions calculations for the Plan Emissions in Green Canyon Block 39, Ewing Bank Block 1009 and Ewing Bank Block 1010. Production will tieback to the existing South Timbalier 308 A (Tarantula) facility and emissions worksheets for the platform are included under this section which update that facility.

(2) Screen 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 ₂ 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

Enclosed as **Attachment G-1** is one set of emissions worksheets showing the emissions calculations for the Plan Emissions, and if different, a set of worksheets showing the emissions calculations for the Complex Total emissions.

This information calculated by:

Name: Jamie Nease, HLP Engineering, Inc.
Email address - jnease@hlpengineering.com

ATTACHMENT

- 1) [Attachment G-1 – DOCD/DPP Air Quality Worksheets_Complex/Drilling/Completion](#)

DOCD/DPP - AIR QUALITY

OMB Control No. 1010-0151
 OMB Approval Expires: 08/31/2023

COMPANY	QuarterNorth Energy, LLC
AREA	South Timaballier
BLOCK	308
LEASE	G21685
FACILITY	ST 308 A (Tarantula)
WELL	N/A
COMPANY CONTACT	Melissa Guidry
TELEPHONE NO.	(713) 969-1310
REMARKS	This AQR is being submitted to address air quality impact for 2023 through 2032 based on current and projected platform equipment and operations.

LEASE TERM PIPELINE CONSTRUCTION INFORMATION:		
YEAR	NUMBER OF PIPELINES	TOTAL NUMBER OF CONSTRUCTION DAYS
2023		
2024		
2025		
2026		
2027		
2028		
2029		
2030		
2031		
2032		

ATTACHMENT G-1

COMPANY	AREA	BLOCK	LEASE	FACILITY	WELL						CONTACT	PHONE	REMARKS													
QuarterNorth Energy, LLC	South Timbalier	308	G21685	ST 308 A (Taranjula)	N/A						Melissa Guidry	(713) 969-1310	This AQR is being submitted to address air quality impact for 2023 through 2032 based on current and projected platform equipment and operations.													
OPERATIONS		EQUIPMENT	EQUIPMENT ID	RATING	MAX. FUEL	ACT. FUEL	RUN TIME	MAXIMUM POUNDS PER HOUR										ESTIMATED TONS								
		Diesel Engines	HP	HP	GAL/HR	SCF/D		TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3	
		Nat. Gas Engines	MMBTU/HR	SCF/HR	SCF/D	HR/D	D/YR																			
		Burners																								
DRILLING	VESSELS- Drilling - Propulsion Engine - Diesel			0	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSELS- Drilling - Propulsion Engine - Diesel			0	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSELS- Drilling - Propulsion Engine - Diesel			0	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSELS- Drilling - Propulsion Engine - Diesel			0	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	Vessels - Diesel Boiler			0	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
PIPELINE INSTALLTION	VESSELS - Pipeline Installation- Diesel			0	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
FACILITY INSTALLATION	VESSELS - Heavy Lift Vessel/Derrick Barge Diesel			0	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
PRODUCTION	RECIP <600hp Diesel; Survival Capsule	SURVIVAL1	32	1.646272	39.51	1	52	0.07	0.07	0.07	0.00	0.99	0.07	--	0.21	--	0.00	0.00	0.00	0.00	0.03	0.00	--	0.01	--	
	RECIP <600hp Diesel; Survival Capsule	SURVIVAL2	32	1.646272	39.51	1	52	0.07	0.07	0.07	0.00	0.99	0.07	--	0.21	--	0.00	0.00	0.00	0.00	0.03	0.00	--	0.01	--	
	RECIP <600hp Diesel; Firewater Pump	FWPUMP-1	425	21.86455	524.75	1	52	0.94	0.94	0.94	0.03	13.21	0.97	--	2.84	--	0.02	0.02	0.02	0.00	0.34	0.03	--	0.07	--	
	RECIP <600hp Diesel; Crane	E-CRANE	305	15.69103	376.58	2	365	0.67	0.67	0.67	0.02	9.48	0.70	--	2.04	--	0.25	0.25	0.25	0.01	3.46	0.26	--	0.74	--	
	RECIP <600hp Diesel; Crane	W-CRANE	305	15.69103	376.58	2	365	0.67	0.67	0.67	0.02	9.48	0.70	--	2.04	--	0.25	0.25	0.25	0.01	3.46	0.26	--	0.74	--	
	RECIP >600hp Diesel; Emergency Generator	DIE-GEN	900	46.3014	1111.23	24	100	0.63	0.36	0.35	0.01	21.63	0.58	--	4.96	--	0.76	0.43	0.42	0.01	25.85	0.69	--	5.95	--	
	Natural Gas Turbine ¹	GEN-1	4600	43809.524	1051428.57	24	365	--	0.09	0.03	0.03	14.72	0.10	--	3.77	--	--	0.38	0.38	0.11	64.47	0.42	--	16.52	--	
	Natural Gas Turbine ¹	GEN-2	4600	43809.524	1051428.57	24	365	--	0.09	0.09	0.03	14.72	0.10	--	3.77	--	--	0.38	0.38	0.11	64.47	0.42	--	16.52	--	
	Natural Gas Heater/Boiler/Burner	HEATER	20	16046	457142.86	24	365	0.14	0.04	0.04	0.01	3.62	0.10	0.00	1.60	0.06	0.63	0.16	0.16	0.05	15.85	0.46	0.00	7.01	0.27	
MISC			BPD	SCF/HR	COUNT																					
	STORAGE TANK ²	TNK-01			1	24	365	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	COMBUSTION FLARE - light smoke ³	FL-ATM		5000		24	365	0.01	0.01	0.01	0.00	0.36	0.18	--	1.63	--	0.05	0.05	0.05	0.01	1.56	0.79	--	7.13	--	
	FLUGITIVES	FL-LP			8000	24	365	--	--	--	--	--	4.00	--	--	--	--	--	--	--	--	17.52	--	--	--	
	GLYCOL DEHYDRATOR	GR-SCC			1	24	365	--	--	--	--	--	4.39	--	--	--	--	--	--	--	--	19.24	--	--	--	
DRILLING WELL TEST	Liquid Flaring			0		0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	COMBUSTION FLARE - no smoke			0		0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	
	COMBUSTION FLARE - light smoke			0		0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	
	COMBUSTION FLARE - medium smoke			0		0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	
	COMBUSTION FLARE - heavy smoke			0		0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	
ALASKA-SPECIFIC SOURCES	VESSELS			KW			HR/D	D/YR																		
	VESSELS - Ice Management Diesel			0			0	0	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	
2023	Facility Total Emissions								3.21	3.01	3.00	0.14	89.21	11.97	0.00	23.07	0.06	1.96	1.92	1.91	0.32	179.63	40.08	0.00	54.70	0.27
EXEMPTION CALCULATION	DISTANCE FROM LAND IN MILES																	2.064.60			2.064.60	2.064.60	2.064.60		53.260.68	
	62.0																									
DRILLING	VESSELS - Crew 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSELS - Supply 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSELS - Tugs 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
PIPELINE INSTALLATION	VESSELS - Support Diesel, Laying			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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSELS - Support Diesel, Burying			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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSELS - Crew 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
FACILITY INSTALLATION	VESSELS - 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSELS - Crew 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSELS - Supply 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
PRODUCTION	VESSELS - Support Diesel			2265	116.52519	2796.60	10	156	1.60	0.96	0.94	0.02	38.28	1.10	0.00	6.00	0.01	1.25	0.75	0.73	0.02	29.86	0.86	0.00	4.68	0.01
ALASKA-SPECIFIC SOURCES	On-Ice Equipment			GAL/HR	GAL/D																					
	Man Camp - Operation (maximum people per day)			PEOPLE/DAY																						
	VESSELS			KW			HR/D	D/YR																		
	On-ice - Loader			0	0.0	0	0	0	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	
	On-ice - Other Construction Equipment			0	0.0	0	0	0	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	
	On-ice - Other Survey Equipment			0	0.0	0	0	0	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	
	On-ice - Tractor			0	0.0	0	0	0	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	
	On-ice - Truck (for gravel island)			0	0.0	0	0	0	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	
	On-ice - Truck (for surveys)			0	0.0	0	0	0	0.00	0.00	0.00															

DOCD/DPP - AIR QUALITY

OMB Control No. 1010-0151
 OMB Approval Expires: 08/31/2023

COMPANY	AREA	BLOCK	LEASE	FACILITY	WELL				
QuarterNorth Energy, LLC	South Timabalia	308	G21685	ST 308 A (Tara	N/A				
Year	Facility Emitted Substance								
	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3
2023	1.96	1.92	1.91	0.32	179.63	40.08	0.00	54.70	0.27
2024	1.96	1.92	1.91	0.32	179.63	40.08	0.00	54.70	0.27
2025	1.96	1.92	1.91	0.32	179.63	40.08	0.00	54.70	0.27
2026	1.96	1.92	1.91	0.32	179.63	40.08	0.00	54.70	0.27
2027	1.96	1.92	1.91	0.32	179.63	40.08	0.00	54.70	0.27
2028	1.96	1.92	1.91	0.32	179.63	40.08	0.00	54.70	0.27
2029	1.96	1.92	1.91	0.32	179.63	40.08	0.00	54.70	0.27
2030	1.96	1.92	1.91	0.32	179.63	40.08	0.00	54.70	0.27
2031	1.96	1.92	1.91	0.32	179.63	40.08	0.00	54.70	0.27
2032	1.96	1.92	1.91	0.32	179.63	40.08	0.00	54.70	0.27
Allowable	2064.60			2064.60	2064.60	2064.60		53260.68	

DOCD/DPP - AIR QUALITY

OMB Control No. 1010-0151
 OMB Approval Expires: 08/31/2023

COMPANY	QuarterNorth Energy, LLC
AREA	Green Canyon
BLOCK	39
LEASE	OCS-G 30402
FACILITY	RUE OCS-G 30402, Green Canyon 39
WELL	
COMPANY CONTACT	Melissa Guidry
TELEPHONE NO.	(713) 969-1310
REMARKS	This AQR is being submitted to address air quality impact for 2023 through 2032 to address the Katmai West #2 project, where 2 subsea wells are proposed to be drilled & completed and tied back to ST 308 A. Emissions are also included to account for construction of two pipelines. The well activity is proposed to occur in 2023, 2024, and/or 2025 and total emissions are shown during each year to be conservative.

LEASE TERM PIPELINE CONSTRUCTION INFORMATION:		
YEAR	NUMBER OF PIPELINES	TOTAL NUMBER OF CONSTRUCTION DAYS
2023	2	21
2024		
2025		
2026		
2027		
2028		
2029		
2030		
2031		
2032		

COMPANY	AREA	BLOCK	LEASE	FACILITY	WELL	CONTACT	PHONE	REMARKS	MAXIMUM POUNDS PER HOUR													ESTIMATED TONS						
Quarter/North Energy, LLC	Green Canyon	39	GCS-G 30402	RUC OCS-G 30402, Green Canyon 39		Melissa Guidry	(713) 969-1310	This AGR is being submitted to address air quality impact for 2023 through 2032 to address the Kalma West #2 project, where 2 subsurface wells are proposed to be drilled & completed and tied back to ST 308 A. Emissions are also included to account for construction of two pipelines. The well activity is proposed to occur in 2023, 2024, and/or 2025 and total emissions are shown during each year to be conservative.	MAXIMUM POUNDS PER HOUR													ESTIMATED TONS						
OPERATIONS		EQUIPMENT	EQUIPMENT ID	RATING	MAX. FUEL	ACT. FUEL	RUN TIME	MAXIMUM POUNDS PER HOUR													ESTIMATED TONS							
		Diesel Engines		HP	GAL/HR	GAL/D		TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3			
		Nat. Gas Engines		HP	SCF/HR	SCF/D	HR/D D/YR	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3			
DRILLING	VESSELS - Drilling - Typical Drilling - Diesel		61800		3179.3528	76304.71	24 190	43.60	26.30	25.51	0.83	1044.59	30.03	0.00	163.84	0.30	99.40	59.97	58.17	1.45	2381.66	68.48	0.01	373.56	0.69			
PIPELINE INSTALLTION	VESSELS - Pipeline Installation- Diesel		12000		617.352	14816.45	24 21	8.47	5.11	4.95	0.12	202.83	5.83	0.00	31.81	0.06	2.13	1.29	1.25	0.03	51.11	1.47	0.00	8.02	0.01			
PRODUCTION	RECIP <600hp Diesel; Survival Capsule		0		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--			
	RECIP <600hp Diesel; Survival Capsule		0		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--			
	RECIP <600hp Diesel; Firewater Pump		0		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--			
	RECIP <600hp Diesel; Crane		0		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--			
	RECIP <600hp Diesel; Crane		0		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--			
	RECIP >600hp Diesel; Emergency Generator		0		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--			
	Natural Gas Turbine 1		0		0.00	0.00		--	0.00	0.00	0.00	0.00	0.00	--	0.00	--	--	0.00	0.00	0.00	0.00	0.00	--	0.00	--			
	Natural Gas Heater/Boiler/Burner		0		0.00	0.00		0.00	0.00	0.00	0.00	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																								
	STORAGE TANK ²							--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
	COMBUSTION FLARE - light smoke		0					0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--			
	FLUGITIVES			0				--	--	--	--	--	0.00	--	--	--	--	--	--	--	--	0.00	--	--	--			
	GLYCOL DEHYDRATOR							--	--	--	--	--	#DIV/0!	--	--	--	--	--	--	--	0.00	--	--	--	--			
DRILLING	Liquid Flaring		0				0 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
WELL TEST	COMBUSTION FLARE - no smoke		0					0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--			
	COMBUSTION FLARE - light smoke		30000				24 10	0.06	0.06	0.06	0.02	2.14	1.08	--	9.77	--	0.01	0.01	0.01	0.00	0.26	0.13	--	1.17	--			
	COMBUSTION FLARE - medium smoke		0				0 0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--			
	COMBUSTION FLARE - heavy smoke		0				0 0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--			
ALASKA-SPECIFIC SOURCES	VESSELS	kW					HR/D D/YR																					
	VESSELS - Ice Management Diesel	0					0 0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00			
2023	Facility Total Emissions							52.13	31.47	30.53	0.77	1,249.56	#DIV/0!	0.00	205.42	0.36	101.55	61.27	59.43	1.48	2,433.03	70.08	0.01	382.75	0.71			
EXEMPTION CALCULATION	DISTANCE FROM LAND IN MILES																2,597.40			2,597.40	2,597.40	2,597.40			62,069.08			
	78.0																											
DRILLING	VESSELS - Crew Diesel	2265	116.52519	2796.60	6	179		1.60	0.96	0.94	0.02	38.28	1.10	0.00	6.00	0.01	0.86	0.52	0.50	0.01	20.56	0.59	0.00	3.22	0.01			
	VESSELS - Supply Diesel	2265	116.52519	2796.60	6	179		1.60	0.96	0.94	0.02	38.28	1.10	0.00	6.00	0.01	0.86	0.52	0.50	0.01	20.56	0.59	0.00	3.22	0.01			
	VESSELS - Tugs 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
PIPELINE INSTALLATION	VESSELS - Support Diesel, Laying	2265	116.52519	2796.60	10	21		1.60	0.96	0.94	0.02	38.28	1.10	0.00	6.00	0.01	0.17	0.10	0.10	0.00	4.02	0.12	0.00	0.63	0.00			
	VESSELS - Support Diesel, Burying	2265	116.52519	2796.60	10	21		1.60	0.96	0.94	0.02	38.28	1.10	0.00	6.00	0.01	0.17	0.10	0.10	0.00	4.02	0.12	0.00	0.63	0.00			
	VESSELS - Crew 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
	VESSELS - Supply 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
FACILITY INSTALLATION	VESSELS - 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
	VESSELS - Crew 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
	VESSELS - Supply 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
PRODUCTION	VESSELS - Support 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
ALASKA-SPECIFIC SOURCES	On-Ice Equipment		GAL/HR	GAL/D																								
	Man Camp - Operation (maximum people per day)		PEOPLE/DAY				HR/D D/YR																					
	VESSELS	kW																										
	On-Ice - Loader	0	0.0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00				
	On-Ice - Other Construction Equipment	0	0.0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00				
	On-Ice - Other Survey Equipment	0	0.0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00				
	On-Ice - Tractor	0	0.0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00				
	On-Ice - Truck (for gravel island)	0	0.0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00				
	On-Ice - Truck (for surveys)	0	0.0	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00				
	Man Camp - Operation	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	0.00	0.00	--	0.00	0.00				
	VESSELS - Hovercraft 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
2023	Non-Facility Total Emissions							6.39	3.86	3.74	0.09	153.14	4.40	0.00	24.02	0.04	2.05	1.24	1.20	0.03	49.16	1.41	0.00	7.71	0.01			

DOCD/DPP - AIR QUALITY

OMB Control No. 1010-0151
OMB Approval Expires: 08/31/2023

COMPANY	AREA	BLOCK	LEASE	FACILITY	WELL					CONTACT	PHONE	REMARKS															
QuarteNorth Energy, LLC	Green Canyon	39	OCS-G 30402	RUE OCS-G 30402, Green Canyon 39						Melissa Guidy	(713) 969-1310	The AQR is being submitted to address air quality impact for 2023 through 2032 to address the Katmai West #2 project, where 2 subsea wells are proposed to be drilled & completed and tied back to ST 308 A. Emissions are also included to account for construction of two pipelines. The well activity is proposed to occur in 2023, 2024, and/or 2025 and total emissions are shown during each year to be conservative.															
OPERATIONS	EQUIPMENT	EQUIPMENT ID	RATING	MAX FUEL		ACT. FUEL		RUN TIME		MAXIMUM POUNDS PER HOUR										ESTIMATED TONS							
				GAL/HR	SCF/HR	GAL/D	SCF/D	HR/D	D/YR	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3
	Diesel Engines Nat. Gas Engines Burners		HP SCF/HR																								
DRILLING	VESSELS - Drilling - Typical Drillship - Diesel		61800	3179.3628	76304.71	24	190	43.60	26.30	25.51	0.63	1044.59	30.03	0.00	163.84	0.30	99.40	59.97	58.17	1.45	2381.66	68.48	0.01	373.56	0.69		
PIPELINE INSTALLATION	VESSELS - Pipeline Installation- Diesel		12000	617.352	14816.45	24	21	8.47	5.11	4.95	0.12	202.83	5.83	0.00	31.81	0.06	2.13	1.29	1.25	0.03	51.11	1.47	0.00	8.02	0.01		
FACILITY INSTALLATION	VESSELS - Heavy Lift Vessel/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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
PRODUCTION	RECIP <600hp Diesel, Survival Capsule		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	RECIP <600hp Diesel, Survival Capsule		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	RECIP <600hp Diesel, Firewater Pump		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	RECIP <600hp Diesel, Crane		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	RECIP >600hp Diesel, Crane		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	RECIP >600hp Diesel, Emergency Generator		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	Natural Gas Turbine		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	Natural Gas Heater/Boiler/Burner		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	MISC.			SCF/HR	COUNT																						
STORAGE TANK	COMBUSTION FLARE - light smoke		0					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	GLYCOL DEHYDRATOR		0	0																							
	Liquid Flaring		0																								
DRILLING WELL TEST	COMBUSTION FLARE - no smoke		0	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	COMBUSTION FLARE - light smoke		0	30000	24	10	0.06	0.06	0.06	0.02	2.14	1.08	0.00	0.00	9.77	0.01	0.01	0.01	0.00	0.26	0.13	0.00	0.00	0.00	0.00		
	COMBUSTION FLARE - medium smoke		0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
	COMBUSTION FLARE - heavy smoke		0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
ALASKA-SPECIFIC SOURCES	VESSELS		KW		HR/D	D/YR																					
	VESSELS - Ice Management Diesel		0		0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2024	Facility Total Emissions						52.13	31.47	30.53	0.77	1,249.56	#DIV/0!	0.00	205.42	0.36	101.55	61.27	59.43	1.48	2,433.03	70.08	0.01	382.75	0.71			
EXEMPTION CALCULATION	78.0																2,597.40			2,597.40	2,597.40	2,597.40		62,069.08			
DRILLING	VESSELS - Crew 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
	VESSELS - Supply Diesel		2265	116.52519	2796.60	6	179	1.60	0.96	0.94	0.02	38.28	1.10	0.00	6.00	0.01	0.86	0.52	0.50	0.01	20.56	0.59	0.00	3.22	0.01		
	VESSELS - Tugs Diesel		2265	116.52519	2796.60	6	179	1.60	0.96	0.94	0.02	38.28	1.10	0.00	6.00	0.01	0.86	0.52	0.50	0.01	20.56	0.59	0.00	3.22	0.01		
PIPELINE INSTALLATION	VESSELS - Support Diesel, Laying		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
	VESSELS - Support Diesel, Burying		2265	116.52519	2796.60	10	21	1.60	0.96	0.94	0.02	38.28	1.10	0.00	6.00	0.01	0.17	0.10	0.10	0.00	4.02	0.12	0.00	0.63	0.00		
	VESSELS - Crew 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
FACILITY INSTALLATION	VESSELS - 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
	VESSELS - Crew 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
	VESSELS - Support 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
ALASKA-SPECIFIC SOURCES	On-Ice Equipment			GAL/HR	GAL/D																						
	Man Camp - Operation (maximum people per day)		PEOPLE/DAY			HR/D	D/YR																				
On-Ice	On-Ice - Loader		0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
	On-Ice - Other Construction Equipment		0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
	On-Ice - Other Survey Equipment		0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
	On-Ice - Tractor		0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
	On-Ice - Truck (for gravel island)		0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
	On-Ice - Truck (for surveys)		0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
	Man Camp - Operation		0		0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
	VESSELS - Hovercraft Diesel		0		0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
	2024	Non-Facility Total Emissions						6.39	3.86	3.74	0.09	153.14	4.40	0.00	24.02	0.04	2.05	1.24	1.20	0.03	49.16	1.41	0.00	7.71	0.91		

COMPANY	AREA	BLOCK	LEASE	FACILITY	WELL					CONTACT	PHONE	REMARKS													
QuarteNorth Energy, LLC	Green Canyon	39	OCS-G 30402	RIE OCS-G 30402, Green Canyon 39						Melissa Guidy	(713) 969-1310	The AQR is being submitted to address air quality impact for 2023 through 2032 to address the Katmai West #2 project, where 2 subsea wells are proposed to be drilled & completed and tied back to ST 308 A. Emissions are also included to account for construction of two pipelines. The well activity is proposed to occur in 2023, 2024, and/or 2025 and total emissions are shown during each year to be conservative.													
OPERATIONS	EQUIPMENT	EQUIPMENT ID	RATING	MAX FUEL	ACT. FUEL	RUN TIME		MAXIMUM POUNDS PER HOUR								ESTIMATED TONS									
	Diesel Engines		HP	GAL/HR	GAL/D	HR/D	D/YR	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3
	Nat. Gas Engines		HP	SCF/HR	SCF/D																				
	Burners		MMBTU/HR	SCF/HR	SCF/D																				
DRILLING	VESSELS - Drilling - Typical Drillship - Diesel		61800	3179.3628	76304.71	24	190	43.60	26.30	25.51	0.63	1044.59	30.03	0.00	163.84	0.30	99.40	59.97	58.17	1.45	2381.66	68.48	0.01	373.56	0.69
PIPELINE INSTALLATION	VESSELS - Pipeline Installation- Diesel		12000	617.352	14816.45	24	21	8.47	5.11	4.95	0.12	202.83	5.83	0.00	31.81	0.06	2.13	1.29	1.25	0.03	51.11	1.47	0.00	8.02	0.01
FACILITY INSTALLATION	VESSELS - Heavy Lift Vessel/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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PRODUCTION	RECIP <600hp Diesel, Survival Capsule		0	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	RECIP <600hp Diesel, Survival Capsule		0	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	RECIP <600hp Diesel, Firewater Pump		0	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	RECIP <600hp Diesel, Crane		0	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	RECIP >600hp Diesel, Emergency Generator		0	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Natural Gas Turbine		0	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Natural Gas Heater/Boiler/Burner		0	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MISC.			SCF/HR	COUNT																				
	STORAGE TANK							--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	COMBUSTION FLARE - light smoke		0					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	GLYCOL DEHYDRATOR		0		0			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DRILLING WELL TEST	Liquid Flaring		0		0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	COMBUSTION FLARE - no smoke		0		0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	COMBUSTION FLARE - light smoke		30000		24	10	0.06	0.06	0.06	0.02	2.14	1.08	--	9.77	--	0.01	0.01	0.01	0.01	0.00	0.26	0.13	--	1.17	--
	COMBUSTION FLARE - medium smoke		0		0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--
	COMBUSTION FLARE - heavy smoke		0		0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--
ALASKA-SPECIFIC SOURCES	VESSELS		KW		HR/D	D/YR																			
	VESSELS - Ice Management Diesel		0		0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
2024	Facility Total Emissions						52.13	31.47	30.53	0.77	1,249.56	#DIV/0!	0.00	205.42	0.36	101.55	61.27	59.43	1.48	2,433.03	70.08	0.01	382.75	0.71	
EXEMPTION CALCULATION	78.0																2,597.40			2,597.40	2,597.40	2,597.40		62,069.08	
DRILLING	VESSELS - Crew 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS - Supply Diesel		2265	116.52519	2796.60	6	179	1.60	0.96	0.94	0.02	38.28	1.10	0.00	6.00	0.01	0.86	0.52	0.50	0.01	20.56	0.59	0.00	3.22	0.01
	VESSELS - Tugs Diesel		2265	116.52519	2796.60	6	179	1.60	0.96	0.94	0.02	38.28	1.10	0.00	6.00	0.01	0.86	0.52	0.50	0.01	20.56	0.59	0.00	3.22	0.01
PIPELINE INSTALLATION	VESSELS - Support Diesel, Laying		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS - Support Diesel, Burying		2265	116.52519	2796.60	10	21	1.60	0.96	0.94	0.02	38.28	1.10	0.00	6.00	0.01	0.17	0.10	0.10	0.00	4.02	0.12	0.00	0.63	0.00
	VESSELS - Crew 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS - Supply 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FACILITY INSTALLATION	VESSELS - 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS - Crew 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS - Support 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PRODUCTION	VESSELS - Support 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ALASKA-SPECIFIC SOURCES	On-Ice Equipment			GAL/HR	GAL/D																				
	Man Camp - Operation (maximum people per day)		PEOPLE/DAY																						
	VESSELS					HR/D	D/YR																		
	On-Ice - Loader		0	0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice - Other Construction Equipment		0	0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice - Other Survey Equipment		0	0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice - Tractor		0	0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice - Truck (for gravel island)		0	0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice - Truck (for surveys)		0	0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	Man Camp - Operation		0		0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	VESSELS - Hovercraft Diesel		0		0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2024	Non-Facility Total Emissions						6.39	3.86	3.74	0.09	153.14	4.40	0.00	24.02	0.04	2.05	1.24	1.20	0.03	49.16	1.41	0.00	7.71	0.91	

COMPANY	AREA	BLOCK	LEASE	FACILITY	WELL	CONTACT	PHONE	REMARKS																						
QuaternNorth Energy, LLC	Green Canyon	39	OCS-G 30402	RUE OCS-G 30402, Green Canyon 39		Melissa Guidy	(713) 969-1310	The AQR is being submitted to address air quality impact for 2023 through 2032 to address the Katmai West #2 project, where 2 subsea wells are proposed to be drilled & completed and tied back to ST 308 A. Emissions are also included to account for construction of two pipelines. The well activity is proposed to occur in 2023, 2024, and/or 2025 and total emissions are shown during each year to be conservative.																						
OPERATIONS	EQUIPMENT Diesel Engines Nat. Gas Engines Burners	EQUIPMENT ID	RATING	MAX. FUEL		ACT. FUEL		RUN TIME		MAXIMUM POUNDS PER HOUR										ESTIMATED TONS										
				HP	GAL/HR	GAL/D	HR/D	D/YR	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3				
				MMBTU/HR	SCF/HR	SCF/D	HR/D	D/YR	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3				
DRILLING	VESSLS- Drilling - Propulsion Engine - Diesel VESSLS- Drilling - Propulsion Engine - Diesel VESSLS- Drilling - Propulsion Engine - Diesel VESSLS - Diesel Boiler Vessels - Drilling Prime Engine, Auxiliary		0 0 0 0 0	0 0 0 0 0	0.00 0.00 0.00 0.00 0.00	0 0 0 0 0	0 0 0 0 0	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00					
PIPELINE INSTALLATION	VESSLS - Pipeline Laying Vessel - Diesel VESSLS - Pipeline Burying - Diesel		0 0	0 0	0.00 0.00	0 0	0 0	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	
FACILITY INSTALLATION	VESSLS - Heavy Lift Vessel/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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
PRODUCTION	RECIP <600hp Diesel; Survival Capsule RECIP <600hp Diesel; Survival Capsule RECIP <600hp Diesel; Firewater Pump RECIP <600hp Diesel; Crane RECIP <600hp Diesel; Crane RECIP >600hp Diesel; Emergency Generator Natural Gas Turbine¹ Diesel Boiler Natural Gas Heater/Boiler/Burner		0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00			
STORAGE TANK	COMBUSTION FLARE - no smoke FLUGITIVES WASTE INCINERATOR	TNK-01	BPD	SCF/HR																										
DRILLING WELL TEST	Liquid Flaring COMBUSTION FLARE - no smoke COMBUSTION FLARE - light smoke COMBUSTION FLARE - medium smoke COMBUSTION FLARE - heavy smoke																													
ALASKA-SPECIFIC SOURCES	VESSLS VESSLS - Ice Management Diesel		KW				HR/D	D/YR																						
2027	Facility Total Emissions								0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EXEMPTION CALCULATION																														
DRILLING	VESSLS- Crew Diesel VESSLS - Supply Diesel VESSLS - Tugs Diesel		0 0 0	0 0 0	0.00 0.00 0.00	0 0 0	0 0 0	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	
PIPELINE INSTALLATION	VESSLS - Support Diesel, Laying VESSLS - Support Diesel, Burying VESSLS - Crew Diesel		0 0 0	0 0 0	0.00 0.00 0.00	0 0 0	0 0 0	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00		
FACILITY INSTALLATION	VESSLS - Material Tug Diesel VESSLS - Crew Diesel VESSLS - Supply Diesel		0 0 0	0 0 0	0.00 0.00 0.00	0 0 0	0 0 0	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00		
PRODUCTION	VESSLS - Support 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
ALASKA-SPECIFIC SOURCES	On-Ice Equipment Man Camp - Operation (maximum people per day) VESSLS On-Ice - Loader On-Ice - Other Construction Equipment On-Ice - Other Survey Equipment On-Ice - Tractor On-Ice - Truck (for gravel island) On-Ice - Truck (for surveys) Man Camp - Operation VESSLS - Hovercraft Diesel						HR/D	D/YR																						
2027	Non-Facility Total Emissions								0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

COMPANY	AREA	BLOCK	LEASE	FACILITY	WELL	CONTACT	PHONE	REMARKS																
QuaternNorth Energy, LLC	Green Canyon	39	OCS-G 30402	RUE OCS-G 30402, Green Canyon 39		Melissa Guidy	(713) 969-1310	The AQR is being submitted to address air quality impact for 2023 through 2032 to address the Katmai West #2 project, where 2 subsea wells are proposed to be drilled & completed and tied back to ST 308 A. Emissions are also included to account for construction of two pipelines. The well activity is proposed to occur in 2023, 2024, and/or 2025 and total emissions are shown during each year to be conservative.																
OPERATIONS	EQUIPMENT	EQUIPMENT ID	RATING	MAX FUEL	ACT. FUEL	RUN TIME	MAXIMUM POUNDS PER HOUR											ESTIMATED TONS						
			HP	GAL/HR	GAL/D		TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3
Natl. Gas Engines			MMBTU/HR	SCF/HR	SCF/D	HR/D	D/YR																	
DRILLING	VESSLS- Drilling - Propulsion Engine - 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSLS- Drilling - Propulsion Engine - 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSLS- Drilling - Propulsion Engine - 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSLS- Drilling - Propulsion Engine - 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Vessels - Diesel Boiler		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Vessels - Drilling Prime Engine, Auxiliary		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PIPELINE	VESSLS - Pipeline Laying 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
INSTALLATION	VESSLS - Pipeline Burying - 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FACILITY INSTALLATION	VESSLS - Heavy Lift Vessel/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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PRODUCTION	RECIP <600hp Diesel; Survival Capsule		0	0	0.00			0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00
	RECIP <600hp Diesel; Survival Capsule		0	0	0.00			0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00
	RECIP <600hp Diesel; Firewater Pump		0	0	0.00			0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00
	RECIP <600hp Diesel; Crane		0	0	0.00			0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00
	RECIP <600hp Diesel; Crane		0	0	0.00			0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00
	RECIP >600hp Diesel; Emergency Generator		0	0	0.00			0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00
	Natural Gas Turbine¹		0	0	0.00			--	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	--	0.00	--
	Diesel Boiler							0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00
	Natural Gas Heater/Boiler/Burner				0.00			0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00
STORAGE TANK	COMBUSTION FLARE - no smoke	TNK-01	BPD	SCF/HR				0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00
	FUGITIVES			0				--	--	--	--	0.00	--	--	--	--	--	--	--	0.00	--	--	--	--
	WASTE INCINERATOR		0			0	0	--	0.00	0.00	0.00	0.00	--	0.00	--	--	0.00	0.00	0.00	0.00	0.00	--	--	--
DRILLING	Liquid Flaring		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WELL TEST	COMBUSTION FLARE - no smoke		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00
	COMBUSTION FLARE - light smoke		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00
	COMBUSTION FLARE - medium smoke		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00
	COMBUSTION FLARE - heavy smoke		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00
ALASKA-SPECIFIC SOURCES	VESSLS		KW			HR/D	D/YR																	
	VESSLS - Ice Management Diesel		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00
2028	Facility Total Emissions							0.00	0.00	0.00	0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00
EXEMPTION CALCULATION																0.00			0.00	0.00	0.00	0.00		0.00
DRILLING	VESSLS- Crew 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSLS - Supply 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSLS - Tugs 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PIPELINE	VESSLS - Support Diesel, Laying		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
INSTALLATION	VESSLS - Support Diesel, Burying		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSLS - Crew 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSLS - Supply 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FACILITY	VESSLS - Material Tuc 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
INSTALLATION	VESSLS - Crew 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSLS - Supply 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PRODUCTION	VESSLS - Support 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ALASKA-SPECIFIC SOURCES	On-Ice Equipment			GAL/HR	GAL/D																			
	Man Camp - Operation (maximum people per day)		PEOPLE/DAY																					
	VESSLS		KW			HR/D	D/YR																	
	On-Ice - Loader		0	0.0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	
	On-Ice - Other Construction Equipment		0	0.0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	
	On-Ice - Other Survey Equipment		0	0.0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	
	On-Ice - Tractor		0	0.0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	
	On-Ice - Truck (for gravel island)		0	0.0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	
	On-Ice - Truck (for surveys)		0	0.0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	
	Man Camp - Operation		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	--	0.00	
	VESSLS - Hovercraft Diesel		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	--	0.00	

COMPANY	AREA	BLOCK	LEASE	FACILITY	WELL	CONTACT	PHONE	REMARKS																
QuaternNorth Energy, LLC	Green Canyon	39	OCS-G 30402	RUE OCS-G 30402, Green Canyon 39		Melissa Guidy	(713) 969-1310	The AQR is being submitted to address air quality impact for 2023 through 2032 to address the Katmai West #2 project, where 2 subsurface wells are proposed to be drilled & completed and tied back to ST 308 A. Emissions are also included to account for construction of two pipelines. The well activity is proposed to occur in 2023, 2024, and/or 2025 and total emissions are shown during each year to be conservative.																
OPERATIONS	EQUIPMENT	EQUIPMENT ID	RATING	MAX FUEL	ACT. FUEL	RUN TIME	MAXIMUM POUNDS PER HOUR										ESTIMATED TONS							
	Diesel Engines		HP	GAL/HR	GAL/D		TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3
	Nat. Gas Engines		HP	SCF/HR	SCF/D																			
	Burners		MMBTU/HR	SCF/HR	SCF/D	HR/D	D/YR																	
DRILLING	VESSLS- Drilling - Propulsion Engine - 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSLS- Drilling - Propulsion Engine - 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSLS- Drilling - Propulsion Engine - 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSLS- Drilling - Propulsion Engine - 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Vessels - Diesel Boiler		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Vessels - Drilling Prime Engine, Auxiliary		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PIPELINE	VESSLS - Pipeline Laying 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
INSTALLATION	VESSLS - Pipeline Burying - 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FACILITY INSTALLATION	VESSLS - Heavy Lift Vessel/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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PRODUCTION	RECIP <600hp Diesel; Survival Capsule		0	0	0.00			0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
	RECIP <600hp Diesel; Survival Capsule		0	0	0.00			0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
	RECIP <600hp Diesel; Firewater Pump		0	0	0.00			0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
	RECIP <600hp Diesel; Crane		0	0	0.00			0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
	RECIP <600hp Diesel; Crane		0	0	0.00			0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
	RECIP >600hp Diesel; Emergency Generator		0	0	0.00			0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
	Natural Gas Turbine ¹		0	0	0.00			--	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
	Diesel Boiler							0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Natural Gas Heater/Boiler/Burner				0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	STORAGE TANK ¹	TNK-01	BPD	SCF/HR																				
	COMBUSTION FLARE - no smoke			0				0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
	FUGITIVES				0			--	--	--	--	0.00	--	--	--	--	--	--	--	--	0.00	--	--	--
	WASTE INCINERATOR		0			0	0	--	0.00	0.00	0.00	0.00	--	0.00	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
DRILLING	Liquid Flaring		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WELL TEST	COMBUSTION FLARE - no smoke			0		0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
	COMBUSTION FLARE - light smoke			0		0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
	COMBUSTION FLARE - medium smoke			0		0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
	COMBUSTION FLARE - heavy smoke			0		0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
ALASKA-SPECIFIC SOURCES	VESSLS		KW			HR/D	D/YR																	
	VESSLS - Ice Management Diesel		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
2030	Facility Total Emissions							0.00	0.00	0.00	0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EXEMPTION CALCULATION																0.00			0.00	0.00	0.00	0.00		0.00
DRILLING	VESSLS- Crew 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSLS - Supply 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSLS - Tuqs 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PIPELINE	VESSLS - Support Diesel, Laying		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
INSTALLATION	VESSLS - Support Diesel, Burying		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSLS - Crew 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSLS - Supply 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FACILITY	VESSLS - Material Tuc 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
INSTALLATION	VESSLS - Crew 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSLS - Supply 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PRODUCTION	VESSLS - Support 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ALASKA-SPECIFIC SOURCES	On-Ice Equipment			GAL/HR	GAL/D																			
	Man Camp - Operation (maximum people per day)		PEOPLE/DAY																					
	VESSLS		KW			HR/D	D/YR																	
	On-Ice - Loader		0	0.0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
	On-Ice - Other Construction Equipment		0	0.0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
	On-Ice - Other Survey Equipment		0	0.0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
	On-Ice - Tractor		0	0.0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
	On-Ice - Truck (for gravel island)		0	0.0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
	On-Ice - Truck (for surveys)		0	0.0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
	Man Camp - Operation		0																					

COMPANY	AREA	BLOCK	LEASE	FACILITY	WELL	CONTACT	PHONE	REMARKS																
QuaternNorth Energy, LLC	Green Canyon	39	OCS-G 30402	RUE OCS-G 30402, Green Canyon 39		Melissa Guidy	(713) 969-1310	The AQR is being submitted to address air quality impact for 2023 through 2032 to address the Katmai West #2 project, where 2 subsea wells are proposed to be drilled & completed and tied back to ST 308 A. Emissions are also included to account for construction of two pipelines. The well activity is proposed to occur in 2023, 2024, and/or 2025 and total emissions are shown during each year to be conservative.																
OPERATIONS	EQUIPMENT	EQUIPMENT ID	RATING	MAX FUEL	ACT. FUEL	RUN TIME	MAXIMUM POUNDS PER HOUR											ESTIMATED TONS						
	Diesel Engines		HP	GAL/HR	GAL/D		TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3
	Nat. Gas Engines		HP	SCF/HR	SCF/D																			
	Burners		MMBTU/HR	SCF/HR	SCF/D	HR/D	D/YR																	
DRILLING	VESSELS- Drilling - Propulsion Engine - 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS- Drilling - Propulsion Engine - 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS- Drilling - Propulsion Engine - 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS- Drilling - Propulsion Engine - 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Vessels - Diesel Boiler		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Vessels - Drilling Prime Engine, Auxiliary		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PIPELINE	VESSELS - Pipeline Laying 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
INSTALLATION	VESSELS - Pipeline Burying - 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FACILITY INSTALLATION	VESSELS - Heavy Lift Vessel/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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PRODUCTION	RECIP <600hp Diesel; Survival Capsule		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	RECIP <600hp Diesel; Survival Capsule		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	RECIP <600hp Diesel; Firewater Pump		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	RECIP <600hp Diesel; Crane		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	RECIP <600hp Diesel; Crane		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	RECIP >600hp Diesel; Emergency Generator		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Natural Gas Turbine ¹		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Diesel Boiler		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Natural Gas Heater/Boiler/Burner		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	STORAGE TANK ¹	TNK-01	BPD	SCF/HR																				
	COMBUSTION FLARE - no smoke		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	FUGITIVES		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	WASTE INCINERATOR		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DRILLING	Liquid Flaring		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WELL TEST	COMBUSTION FLARE - no smoke		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	COMBUSTION FLARE - light smoke		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	COMBUSTION FLARE - medium smoke		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	COMBUSTION FLARE - heavy smoke		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ALASKA-SPECIFIC SOURCES	VESSELS		KW			HR/D	D/YR																	
	VESSELS - Ice Management 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2031	Facility Total Emissions							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EXEMPTION CALCULATION																0.00			0.00	0.00	0.00		0.00	
DRILLING	VESSELS- Crew 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS - Supply 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS - Tugs 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PIPELINE	VESSELS - Support Diesel, Laying		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
INSTALLATION	VESSELS - Support Diesel, Burying		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS - Crew 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS - Supply 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FACILITY	VESSELS - Material Tuc 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
INSTALLATION	VESSELS - Crew 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS - Supply 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PRODUCTION	VESSELS - Support 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ALASKA-SPECIFIC SOURCES	On-Ice Equipment			GAL/HR	GAL/D																			
	Man Camp - Operation (maximum people per day)		PEOPLE/DAY																					
	VESSELS		KW			HR/D	D/YR																	
	On-Ice - Loader		0	0.0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	On-Ice - Other Construction Equipment		0	0.0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	On-Ice - Other Survey Equipment		0	0.0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	On-Ice - Tractor		0	0.0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	On-Ice - Truck (for gravel island)		0	0.0	0	0	0	0.00	0.00	0														

COMPANY	AREA	BLOCK	LEASE	FACILITY	WELL	CONTACT	PHONE	REMARKS																		
QuaternNorth Energy, LLC	Green Canyon	39	OCS-G 30402	RUE OCS-G 30402, Green Canyon 39		Melissa Guidy	(713) 969-1310	The AQR is being submitted to address air quality impact for 2023 through 2032 to address the Katmai West #2 project, where 2 subsea wells are proposed to be drilled & completed and tied back to ST 308 A. Emissions are also included to account for construction of two pipelines. The well activity is proposed to occur in 2023, 2024, and/or 2025 and total emissions are shown during each year to be conservative.																		
OPERATIONS	EQUIPMENT	EQUIPMENT ID	RATING	MAX FUEL	ACT. FUEL	RUN TIME	MAXIMUM POUNDS PER HOUR										ESTIMATED TONS									
	Diesel Engines		HP	GAL/HR	GAL/D		TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3		
	Nat. Gas Engines		HP	SCF/HR	SCF/D																					
	Burners		MMBTU/HR	SCF/HR	SCF/D	HR/D	D/YR																			
DRILLING	VESSELS- Drilling - Propulsion Engine - 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	VESSELS- Drilling - Propulsion Engine - 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	VESSELS- Drilling - Propulsion Engine - 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	VESSELS- Drilling - Propulsion Engine - 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	Vessels - Diesel Boiler		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	Vessels - Drilling Prime Engine, Auxiliary		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
PIPELINE	VESSELS - Pipeline Laying 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
INSTALLATION	VESSELS - Pipeline Burying - 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
FACILITY INSTALLATION	VESSELS - Heavy Lift Vessel/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	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
PRODUCTION	RECIP <600hp Diesel; Survival Capsule		0	0	0.00			0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--		
	RECIP <600hp Diesel; Survival Capsule		0	0	0.00			0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--		
	RECIP <600hp Diesel; Firewater Pump		0	0	0.00			0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--		
	RECIP <600hp Diesel; Crane		0	0	0.00			0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--		
	RECIP <600hp Diesel; Crane		0	0	0.00			0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--		
	RECIP >600hp Diesel; Emergency Generator		0	0	0.00			0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--		
	Natural Gas Turbine ¹		0	0	0.00			--	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--		
	Diesel Boiler							0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	Natural Gas Heater/Boiler/Burner				0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
STORAGE TANK ¹		TNK-01	BPD	SCF/HR																						
	COMBUSTION FLARE - no smoke			0				0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--		
	FUGITIVES			0				--	--	--	--	0.00	--	--	--	--	--	--	--	--	0.00	--	--	--		
	WASTE INCINERATOR		0			0	0	--	0.00	0.00	0.00	0.00	--	0.00	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--		
DRILLING	Liquid Flaring		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
WELL TEST	COMBUSTION FLARE - no smoke			0		0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--		
	COMBUSTION FLARE - light smoke			0		0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--		
	COMBUSTION FLARE - medium smoke			0		0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--		
	COMBUSTION FLARE - heavy smoke			0		0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--		
ALASKA-SPECIFIC SOURCES	VESSELS		kw			HR/D	D/YR																			
	VESSELS - Ice Management Diesel		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--		
2032	Facility Total Emissions							0.00	0.00	0.00	0.00	0.00	0.00	#DIV/0!	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
EXEMPTION CALCULATION																0.00			0.00	0.00	0.00	0.00	0.00	0.00		
DRILLING	VESSELS- Crew 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	VESSELS - Supply 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	VESSELS - Tugs 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
PIPELINE	VESSELS - Support Diesel, Laying		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
INSTALLATION	VESSELS - Support Diesel, Burying		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	VESSELS - Crew 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	VESSELS - Supply 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
FACILITY	VESSELS - 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
INSTALLATION	VESSELS - Crew 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	VESSELS - Supply 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
PRODUCTION	VESSELS - Support 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
ALASKA-SPECIFIC SOURCES	On-Ice Equipment			GAL/HR	GAL/D																					
	Man Camp - Operation (maximum people per day)		PEOPLE/DAY																							
	VESSELS		kw			HR/D	D/YR																			
	On-Ice - Loader		0	0.0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--			
	On-Ice - Other Construction Equipment		0	0.0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--			
	On-Ice - Other Survey Equipment		0	0.0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--			
	On-Ice - Tractor		0	0.0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--			
	On-Ice - Truck (for gravel island)		0	0.0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--			
	On-Ice - Truck (for surveys)		0	0.0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--			
	Man Camp - Operation		0			0	0	0.00	0.00	0.00</																

DOCD/DPP - AIR QUALITY

OMB Control No. 1010-0151
 OMB Approval Expires: 08/31/2023

COMPANY	AREA	BLOCK	LEASE	FACILITY	WELL				
QuarterNorth Energy, LLC	Green Canyon	39	OCS-G 30402	RUE OCS-G 30402, Green Canyon 39					
Year	Facility Emitted Substance								
	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3
2023	101.55	61.27	59.43	1.48	2433.03	70.08	0.01	382.75	0.71
2024	101.55	61.27	59.43	1.48	2433.03	70.08	0.01	382.75	0.71
2024	101.55	61.27	59.43	1.48	2433.03	70.08	0.01	382.75	0.71
2026	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2027	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2028	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2029	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2030	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2031	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2032	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Allowable	2597.40			2597.40	2597.40	2597.40		62069.08	

SECTION H
OIL AND HAZARDOUS SUBSTANCE SPILLS

(a) Oil Spill Response Planning

QNE (Company No. 03672) is the designated operator of RUE OCS-G 30402 (Expired Lease No. OCS-G 34966 (NE1/4NE1/4; N1/2SE1/4NE1/4 GC39), Lease OCS-G 34878 (EW1009) and Lease OCS-G 34879 (EW1010).

The proposed activities and facilities in this SDOCD will be covered by the Oil Spill Response (OSRP) plan approved on September 26, 2023.

(b) SPILL RESPONSE SITES

Primary Response Equipment Location	Preplanned Staging Location(s)
Houma, LA Kiln, MS Leeville, LA Venice, LA	Houma, LA Kiln, MS Leeville, LA Port Fourchon, LA

(c) OSRO Information

QNE currently maintains an agreement with Clean Gulf Associates (CGA) and National Response Corporation (NRC) to provide offshore oil spill removal services. In the case of an unanticipated discharge incident, CGA and NRC will be the primary providers of the spill response equipment. The primary provider for personnel to staff this team will be Clean Gulf Associates Services (CGAS) and National Response Corporation's (NRC) Independent Contractor Network (ICN). In addition, QNE currently maintains agreements with the following OSROs to provide near shore oil spill removal services: AMPOL; ES&H Consulting Services, Inc.; Miller Environmental; and OMI Environmental Services.

(d) WORST-CASE SCENARIO COMPARISON

Category	Regional OSRP WCD	DOCD WCD	Regional OSRP WCD	DOCD WCD
Type of Activity	Production >10 Miles Seaward of the Coastline	Production >10 Miles Seaward of the Coastline	Drilling >10 Miles Seaward of the Coastline	Drilling >10 Miles Seaward of the Coastline
Facility Location (Area/Block)	Green Canyon Block 200	Ewing Bank Block 1010	Green Canyon Block 39	Green Canyon Block 39
Facility Designation	Well TA009 OCS-G 12209	Well Loc A	Katmai West #2	Ewing Bank 1010 Well Loc A (Katmai West #2)
Distance to Nearest Shoreline (miles)	88 miles	78 miles	73 miles	73 miles
Volume Storage tanks (total) Uncontrolled blowout Pipelines Total Volume	54,689 bbls	36,087 bbls	421,050 bbls	421,050 bbls
Type of Oil(s) (crude, condensate, diesel)	Crude Oil	Crude Oil	Crude Oil	Crude Oil
API Gravity	24.9°	37.9°	37.9°	37.9°

The calculations that helped determine the worst-case discharge scenario are included in the proprietary copy of this plan as **Attachment H-1**.

QNE has determined that the worst-case scenario from the activities proposed in this IDOCD do supersede the worst-case scenario from our approved Regional OSRP.

QNE submitted the new worst-case scenario to the BSEE GOMR on August 4, 2023 for inclusion in our Regional OSRP. The updated Regional OSRP was approved September 26, 2023.

(b) Spill Response Discussion for NEPA Analysis

Spill response discussion prepared by Forefront Emergency Management is enclosed as **Attachment H-2**.

ATTACHMENTS

- 1) [Attachment H-1 – Worst Case Discharge Calculation \(Proprietary\)](#)
- 2) [Attachment H-2 – Spill Response Discussion](#)

FACILITY INFORMATION	
TYPE OF OPERATION	Drilling
FACILITY DESIGNATION	Well Location A: SL: GC 39 (OCS-G 30402) BHL: EW 1010 (OCS-G 34879) Well Location B: SL: GC 39 (OCS-G 30402) BHL: EW 1009 (OCS-G 34878)
FACILITY LOCATION	Green Canyon Block 39
DISTANCE TO NEAREST SHORELINE	73 miles
VOLUME Uncontrolled Blowout (Volume Per Day)	421,050 bbls
TYPE OF OIL(S) – (CRUDE OIL, CONDENSATE, DIESEL)	Crude Oil
API GRAVITY	37.9°

FACILITY, TANKS, AND PRODUCTION FACILITIES

There are no production vessels and storage tanks associated with the activities in this Development Operations Coordination Document (DOCD); however, there are storage tanks. All storage tanks are as follows:

Type of Storage Tank	Type of Facility	Tank Capacity (bbls)	Number of Tanks	Total Capacity (bbls)
Fuel Oil (Marine Diesel)	DP Drillship	1,418	2	2,836

OIL SPILL RESPONSE DISCUSSION

In the event of a spill at Green Canyon Block 39, our primary response would be to utilize the Oil Spill Response Vessels (OSRV) and Oil Spill Response Barge (OSRB) from Clean Gulf Associates (CGA). The initial response would likely be a 95' Fast Response Vessel (FRV) located in Venice, Louisiana and the HOSS Barge located in Harvey, Louisiana. The 95' FRV has a derated recovery capacity of 22,885 barrels/day and a storage capacity of 249 barrels. With a maximum prep time of 2.0 hours, a maximum planning run time of 1.9 hours, and a deployment time of 1.0 hour, the response vessel would be on site in approximately 4.9 hours. The HOSS Barge has a derated recovery capacity of 76,285 barrels/day and a storage capacity of 4,000 barrels. With a maximum prep time of 6.0 hours, a maximum load out time of 1.0 hours, a maximum planning run time of 19.2 hours, and a deployment time of 2.0 hours, the response barge would be on site in approximately 28.2 hours.

Actual response times are generally quicker than planning times, since the vessel could be mobilized within one hour, weather permitting. As with any spill, additional "cascading" response equipment would be mobilized to the site from various CGA bases, such as Venice, LA and Leesville, LA. For spills larger than 100 barrels, dispersants may be mobilized by plane from Airborne Support, Inc. in Houma, LA, pending approval from the U.S.C.G. FOSC and RRT-6.

For planning purposes, based on the worst-case discharge volume coupled with the distance from shore and guidance from Clean Gulf Associates, it is estimated that personnel can be on-scene within 5-24 hours. It is estimated that the spill could be contained within 6 days and recovered within 30 to 40 days.

LAND SEGMENT IDENTIFICATION

According to the risk assessment analysis conducted by the Bureau of Safety and Environmental Enforcement as part of their OSRAM project, spills originating in Green Canyon Block 39, Launching Area C044, have the potential for impacting land segments from Calhoun County, Texas to Plaquemines Parish, Louisiana within 30 days of oil persisting on the water. The probability of the impacts is summarized below:

PROBABILITY OF LAND IMPACT (% CHANCE)			
LAND AREA	3 DAYS	10 DAYS	30 DAYS
Calhoun, TX	-	-	-
Matagorda, TX	-	-	1
Brazoria, TX	-	-	-
Galveston, TX	-	-	2
Jefferson, TX	-	-	1
Cameron, LA	-	-	5
Vermilion, LA	-	-	2
Iberia, LA	-	-	-
St. Mary, LA	-	-	-
Terrebonne, LA	-	1	2
Lafourche, LA	-	-	1
Jefferson, LA	-	-	1
Plaquemines, LA	-	1	4

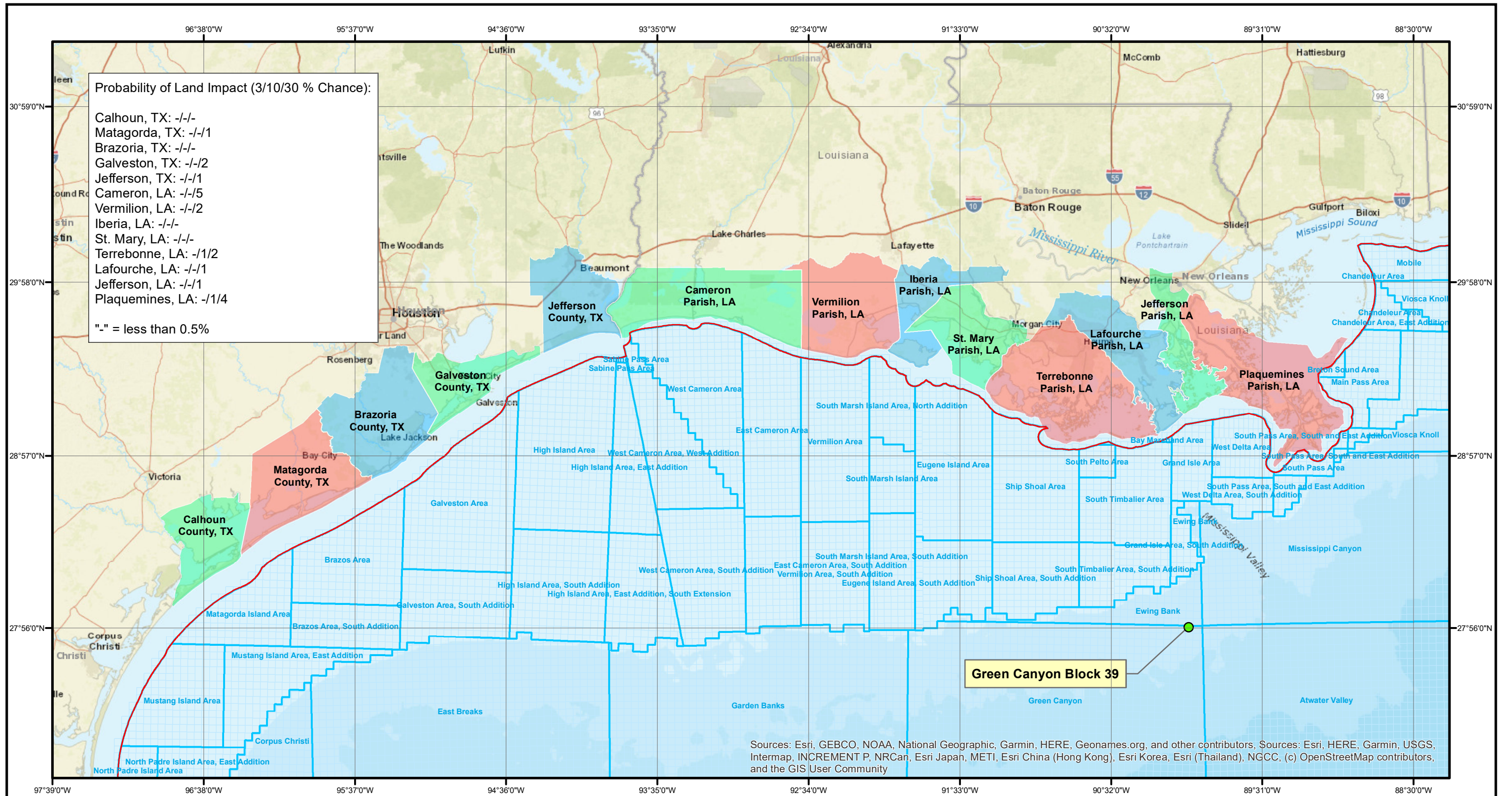
Note "-" = less than 0.5%.

RESOURCE IDENTIFICATION

The land segment with the highest probability of being impacted by a spill originating from this facility is the Plaquemines Parish land segment. According to the BSEE OSRAM program, there is a less than 0.5% chance of the spill impacting Plaquemines Parish within 3 days of the incident. In addition, the OSRAM program predicts a 1% and 4% chance of an oil slick that persists for 10 days and 30 days, respectively.

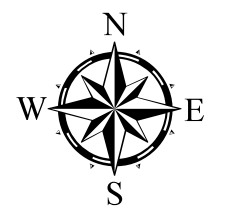
Economically, the potentially impacted areas are heavily industrialized, as well as, commercial and recreational fishing centers. The Plaquemines Parish area is one of the largest staging areas, in the southern Louisiana coastal area, for the oil and gas industry's operations in the Gulf of Mexico, as well as an abundant fishing community. The Pass-a-Loutre Wildlife Management Area, Delta National Wildlife Refuge, and surrounding areas are of the most critically sensitive sites of economic concerns, should an oil slick threaten the Plaquemines Parish area. Special emphasis will be made on deployment of containment boom in order to attempt to keep any oil slicks from impacting these areas.

Environmentally, the Plaquemines Parish area has several shoreline types that could potentially be impacted. These include exposed solid man-made structures, exposed wave-cut platforms in clay, fine- to medium-grained sand beaches, coarse-grained sand beaches, mixed sand and gravel beaches, riprap, exposed tidal flats, sheltered rocky shores and sheltered scarps in mud or clay, sheltered tidal flats, and salt- and brackish-water marshes. The locations of these areas are on maps **LA-83, LA-84, LA-85, LA-86, LA-87, LA-88, LA-89, LA-90, LA-91, LA-92, LA-93, LA-94, LA-95, LA-96, LA-97, LA-98, LA-99, and LA-100** of the Environmental Sensitivity Index guide maps. The index pages of these maps will be used as a guide to the species that could be potentially impacted should a spill of significance occur in the area. The ESI maps can be found online at [Louisiana ESI Maps](#).



— = Federal/ State Boundary Line

QuarterNorth Energy LLC Green Canyon Block 39 Impact Probability Map



120-DAY UNCONTROLLED WELL BLOW OUT CONSIDERATIONS

Beyond the equipment required for the initial phase of a Worst Case Discharge at this location, additional equipment may be necessary for a sustained response to an un-controlled well blow out for a duration of 120 days. Some additional support that may be necessary will include:

- Ocean-going, as well as inland-going temporary storage barges to store and transport recovered product from the skimming operations.
- A rotation of personnel to relieve the operators of all skimming vessels as well as the shoreline protection crews. Spills of duration will double the required personnel.
- Additional field safety personnel.
- Aircraft for continual monitoring of the incident.
- Infrared spill tracking, such as X-Band Radar, for night time spill tracking and response.
- Full logistical capabilities to maintain the response equipment as well as personnel.
- Sufficient communications equipment.
- Sufficient decontamination equipment and protocols.
- Long term supply of dispersants and fireproof boom in instance of an uncontrolled long-term blowout event.
- A decontamination plan.
- A waste disposal plan.
- A demobilization plan.
- Aircraft for dispersant application.
- Well containment equipment, personnel, and deployment capability for capturing and separating fluids at the source.

RESPONSE

QuarterNorth Energy LLC has ensured, by means of contract, an experienced Incident Management Team as well as an extensive response resource contractor team in order to ensure it is well prepared to address the issues involved with a Worst Case Discharge from Green Canyon Block 39. These contracts include agreements with Clean Gulf Associates (CGA), National Response Corporation (NRC), Forefront Emergency Management, L.P., HWCG LLC, ES&H, AMPOL, Miller Environmental, and E3 OMI, LLC.

Once identification and assessment of the spill has occurred, QuarterNorth Energy LLC would activate mobilization of the contracted resources. The resources involved would involve mechanical recovery, storage, aerial surveillance, dispersants, subsea containment and subsea dispersant, *in-situ* burning, shoreline protection, and wildlife rehabilitation and support. These tactics are discussed below:

Mechanical Recovery

Mechanical recovery would involve the use of skimmers, oil spill response vessels, and fast response units to recover floating oil in open water. The resources for these operations are available from the contracted OSRO's CGA and NRC. A list of offshore skimming equipment, along with recovery rates and estimated response times, is available on the Offshore On-Water Recovery Activation List.

Oil Storage

In order to properly support the off-shore skimming vessels to be involved in the Worst Case Discharge Scenario, it is likely that additional temporary storage equipment will be necessary to store the recovered product for disposal. If this proves to be the case, the required storage tanks and/or barges will be secured at the time of the incident from contracts maintained with CGA and NRC. A list of barges is available on the Oil Storage Table.

Aerial Surveillance

In order to ensure accurate location, estimation, and tracking of any spill, it is the policy of QuarterNorth Energy LLC to utilize aircraft over flights, as warranted, to continually track the spill by obtaining GPS coordinates of the leading edge, center, and trailing edge of the slick. Personnel trained in spill spotter detection will obtain the visual and GPS data during each over flight. This up-to-the-minute information is vital in developing the necessary trajectories needed for an appropriate spill response. The Aerial Surveillance Table lists the resources available for this response capability.

Offshore Aerial Dispersants and Offshore Boat Spray Dispersants

Three types of dispersants are presently approved and available in the Gulf Coast area. These are COREXIT 9527, COREXIT 9500, and Accell Clean ® DWD. The most rapid way of acquiring dispersants in the event of an incident is through QuarterNorth Energy LLC's contract with CGA and NRC. The three types of dispersants can be applied using either aerial or vessel based equipment. For vessel-based applications, the dispersant will be applied directly to the slick from the deck of a vessel using fire monitoring equipment. The primary resource for this will be CGA. Aerial dispersant application is available through CGA's agreement with Airborne Support, Inc. located in Houma, Louisiana. In addition, through the NRC's contract, QuarterNorth Energy LLC has access to the NRC's aerial application equipment. The equipment available for both vessel dispersant and aerial dispersant is listed on the Offshore Boat Spray Dispersant Table and the Offshore Aerial Dispersant Table.

RESPONSE (CONTINUED)

Subsea Containment

In the event of a subsea sources control issue emanating from a blowout well, QuarterNorth Energy LLC has entered into a contract with HWCG LLC to obtain the resources of the Helix Fast Response System (HFRS). The Helix Fast Response System is composed of the Q4000 Intervention Vessel, Helix Producer I Processing Vessel, Containment System, Tanker Unloading System, Subsea Capping Stacks, Top Hat, and Risers and Umbilicals. QuarterNorth Energy LLC has additional contracts in place for the deployment of containment equipment as well as subsea dispersant application and monitoring.

In-Situ Burning

Conditions permitting, *in-situ* burning is another response operation to be considered. The primary type of equipment necessary for *in-situ* burning is "Fire Boom". This type of containment boom is capable of retaining burning oil with risks of significant damage to the boom. After a thorough consideration of all aspects involved with *in-situ* burning between QuarterNorth Energy LLC and the Federal On-Scene Commander, the following procedures and considerations should be taken into account:

- Before ignition, ensure that the wind direction will not carry the smoke from any potential fire in the direction of a community or other sensitive resources.
- At the time of ignition, special care must be taken to ensure that the ignition source is located at a safe distance from the concentration of oil.
- The safest burn system at this point is to release burning gelled fuel from a heli-torch from heights of several hundred feet above the spill. If necessary, hand-held igniters can be released from vessels several hundred feet away.

Shoreline Protection

Should an oil slick persist and threaten shorelines, response strategies would be put into effect. The resources available for nearshore and shoreline response are given on the Shoreline Protection and Nearshore Skimming Equipment Table.

Wildlife Rehabilitation and Support

In the event that wildlife is impacted by a spill, the decision to capture and attempt to clean and rehabilitate any oiled wildlife will be made by the trustee agency in given area impacted. No handling or capture of any animals will be conducted without consultation and approval by the agency trustee's representative at the scene. Once the decision has been made that wildlife in the area have been sufficiently impacted to warrant a rehabilitation project, the incident management team will mobilize technical specialists to conduct the rehabilitation project. The equipment utilized to conduct the rehabilitation project will depend heavily on the species impacted. In general, the wildlife trailer maintained by CGA will be mobilized to the scene to provide generalized equipment. More specific equipment will be obtained as needed when determined necessary by the technical specialist and/or agency representatives. The preferred organizations are given on The Wildlife Protection Response and Equipment Tables.

OFFSHORE RESPONSE EQUIPMENT

Type	Quantity	Recovery Rate (EDRC) ¹	Storage (Recovered Oil) ¹	Equipment ²	Personnel Required ³	Operating Limitations	Location	Response Times (Hours)					Total ETA ⁴
								Prep (At Site)	Transport (OTR)	Loadout (Staging)	Transit (Staging to Location)	Deployment	
CGA-200 HOSS Barge	1	76,285	4,000	(4) 5-brush Lamor Skimmers	12 (4-CGAS, 8-OSRO)	7' seas	CGA/ Harvey, LA	6	-	1	19.2	2	28.2
				2,640' of 67" Sea Sentry Boom									
				Aptomar SECurus (infrared camera, HD digital video camer, high output spotlight, and Rutter X-band Radar)									
				(2) Tugs -1,200 HP									
				(1) Tug - 1,800 HP									
95' FRV (Breton Isl.)	1	22,885	249	(2) 3-brush Lamor Skimmers	6 (2-CGAS, 4-OSRO)	5' seas	CGA/ Venice, LA	2	-	-	1.9	1	4.9
				(2) 32' x 3' air inflatable boom									
				Aptomar SECurus (infrared camera, HD digital video camer, high output spotlight, and Rutter X-band Radar)									
95' FRV (J.L. O'Brien)	1	22,885	249	(2) 3-brush Lamor Skimmers	6 (2-CGAS, 4-OSRO)	5' seas	CGA/Leeville, LA	2	-	-	2.1	1	5.1
				(2) 32' x 3' air inflatable boom									
				Aptomar SECurus (infrared camera, HD digital video camer, high output spotlight, and Rutter X-band Radar)									
95' FRV (H.I. Rich)	1	22,885	249	(2) 3-brush Lamor Skimmers	6 (2-CGAS, 4-OSRO)	5' seas	CGA/ Vermilion, LA	2	-	-	6.6	1	9.6
				(2) 32' x 3' air inflatable boom									
				Aptomar SECurus (infrared camera, HD digital video camer, high output spotlight, and Rutter X-band Radar)									
95' FRV (Galveston)	1	22,885	249	(2) 3-brush Lamor Skimmers	6 (2-CGAS, 4-OSRO)	5' seas	CGA/ Galveston, TX	2	-	-	13.3	1	16.3
				(2) 32' x 3' air inflatable boom									
				Aptomar SECurus (infrared camera, HD digital video camer, high output spotlight, and Rutter X-band Radar)									
OSRV NRC Perseverance	1	24,000	300	42" of 2,000' Containment Boom	(2) SROT Trained Personnel; (6) Labor Personnel	-	NRC/ Golden Meadow, LA	4	-	2	19	2	27
				42" of 100' Sweep Containment Boom									
				Marco Class XI AB Skimmer									
				17' Deployment Craft									
OSRV NRC Defender	1	24,000	16,000	42" of 1,000' Containment Boom	(2) SROT Trained Personnel; (4) Labor Personnel	-	NRC/ Bayou La Batre, AL	8	-	2	41	2	53
				42" of 100' Sweep Boom									
				Marco Class XI AB Skimmer									
				18' Deployment Craft									
				Nearshore Tug									
				Offshore Tug									
OSRV NRC Quest	1	28,526	312	42" of 2,000' Containment Boom	(2) SROT Trained Personnel; (6) Labor Personnel	-	NRC/ Galveston, LA	4	-	2	61	2	69
				26" of 100' Containment Boom									
				Elastec X-150 Disk Skimmer									
				Marco Class XI AB Skimmer									
				18' Deployment Craft									

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OFFSHORE RESPONSE EQUIPMENT (CONTINUED)

Type	Quantity	Recovery Rate (EDRC) ¹	Storage (Recovered Oil) ¹	Equipment ²	Personnel Required ³	Operating Limitations	Location	Response Times (Hours)					Total ETA ⁴
								Prep (At Site)	Transport (OTR)	Loadout (Staging)	Transit (Staging to Location)	Deployment	
OSRV NRC Independence	1	24,000	22,490	42" of 2,000' Containment Boom	(2) SROT Trained Personnel; (4) Labor Personnel	-	NRC/ Aransas Pass, TX	8	-	2	89	2	101
				42" of 2,000' Sweep Boom									
				17' Deployment Craft									
				Nearshore Tug									
				Offshore Tug									
Marco Class XI AB Skimmer													
OSRV NRC Liberty	1	905	322	42" of 2,000' Containment Boom	(2) SROT Trained Personnel; (6) Labor Personnel	-	NRC/ Miami, FL	4	-	2	95	2	103
				42" of 200' Sweep Containment Boom									
				Desmi Helix Skimmer									
				17' Deployment Craft									
FRU Unit	2	8,502	400	Foilex 250 weir skimmer	4 (1-CGAS, 3-OSRO)	4' seas	CGA/ Venice, LA	2	-	6	4.6	1	13.6
				75' of 53" air inflatable boom									
				(1) Petroleum Industry Designated Vessel									
FRU Unit	3	12,753	500	Foilex 250 weir skimmer	4 (1-CGAS, 3-OSRO)	4' seas	CGA/ Leeville, LA	2	4.6 ⁵	6	5	1	18.6
				75' of 53" air inflatable boom									
				(1) Petroleum Industry Designated Vessel									
FRU Unit	2	8,502	300	Foilex 250 weir skimmer	4 (1-CGAS, 3-OSRO)	4' seas	CGA/ Vermilion, LA	2	6.3 ⁵	6	12.6	1	27.9
				75' of 53" air inflatable boom									
				(1) Petroleum Industry Designated Vessel									
Aqua Guard TT-150	1	22,323	6,000	Brush Skimmer	4- T&T	3'-5' seas	T&T/ Harvey, LA	4	2.1 ⁵	12	10	1	24-48
				(1) Skimmer Deployment System									
				(1) >200' Petroleum Industry Designated Vessel									
				(2-6) Portable Storage Tanks (500 bbls each) ⁶									
Aqua Guard TT-150	1	22,323	6,000	Brush Skimmer	4- T&T	3'-5' seas	T&T/ Galveston, TX	4	12.9 ⁵	12	10	1	24-48
				(1) Skimmer Deployment System									
				(1) >200' Petroleum Industry Designated Vessel									
				(2-6) Portable Storage Tanks (500 bbls each) ⁶									
Koseq Arms	6	108,978	36,000	MariFlex 150-HF	4	9' seas	T&T/ Harvey LA	24	2.1 ⁵	24	10	1	61.1
				(1) >200' Supply Vessel									
				(1) Petroleum Industry Designated Vessel									
				(2-6) Portable Storage Tanks (500 bbls each) ⁶									

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OFFSHORE RESPONSE EQUIPMENT (CONTINUED)

Type	Quantity	Recovery Rate (EDRC) ¹	Storage (Recovered Oil) ¹	Equipment ²	Personnel Required ³	Operating Limitations	Location	Response Times (Hours)					Total ETA ⁴
								Prep (At Site)	Transport (OTR)	Loadout (Staging)	Transit (Staging to Location)	Deployment	
Koseq Arms	6	137,310	36,000	Lamor Brush Skimmer	4 - T&T	9' seas	T&T/ Harvey, LA	24	2.1 ⁵	24	10	1	61.1
				(1) Skimmer Deployment System									
				(1) >200' Petroleum Industry Designated Vessel									
				(2-6) Portable Storage Tanks (500 bbls each) ⁶									
Koseq Arms	10	228,850	60,000	Lamor Brush Skimmer	4 - T&T	9' seas	T&T/ Galveston, TX	24	12.9 ⁵	24	10	1	71.9
				(1) Skimmer Deployment System									
				(1) >200' Petroleum Industry Designated Vessel									
				(2-6) Portable Storage Tanks (500 bbls each) ⁶									
Oceangoing Boom Barge - CGA 300	1	-	-	(1) Barge with 25,000' of 43" containment boom	4 (2-OSRO, 2-CGAS)	2' - 4' seas	CGA/ Leeville, LA	8	-	-	12.7	4	24.7
				(1) Tug - 1,200 HP									
				(2) Petroleum Industry Designated Vessel per 1,000' of boom deployed									
				(1) Support crew boat (supply)									
Inland Storage Barge	5	-	100,000	(1) Tug	6	7' seas	CGA ⁸	12	-	-	12	-	24
				Shuttle Barge ⁷									
Offshore Storage Barge	8	-	800,000	(1) Tug	6	7' seas	CGA ⁸	24	-	-	24	-	48

Offshore EDRC	818,797
Storage	1,089,620

¹Recovery rate and storage provides the total number for the quantity of skimming vessels listed.

²Equipment listed is for each skimming vessel.

³ Personnel number listed is for each skimming vessel.

⁴Response times dependent upon vessel procurement

⁵Asset to be relocated to staging area in Venice, Louisiana

⁶Recovered liquid is pumped to the portable storage tanks and/or dedicated fixed storage tanks onboard the Petroleum Industry Designated Vessel. Once the portable storage tanks are full, the oil is transferred to a temporary storage barge for disposal in accordance with approved disposal plan.

⁷ CGA maintains (4) 249 barrel shuttle barges, which can be used to support shallow water skimming operations by offloading at the skimmer recovery location to minimize skimmer travel.

⁸Barge resources are available through an agreement with Clean Gulf Associates. All equipment will be provided on an as-available basis, subject to the terms at the time requested by Clean Gulf Associates or its member.

NEARSHORE RESPONSE EQUIPMENT

Type	Quantity	Recovery Rate (EDRC) ¹	Storage (Recovered Oil) ¹	Equipment ²	Personnel Required ³	Operating Limitations	Location	Response Times (Hours)					
								Prep (At Site)	Transport (OTR)	Loadout (Staging)	Transit (Staging to Location)	Deployment	Total ETA ⁴
46' FRV (Grand Bay)	1	15,257	65	(2) 2-brush Lamor Skimmers	4	4' seas	CGA/ Venice, LA	2	-	-	1.9	1	4.9
				(2) 23' x 3' air inflatable boom									
46' FRV (R.W. Armstrong)	1	15,257	65	(2) 2-brush Lamor Skimmers	4	4' seas	CGA/ Leeville, LA	2	-	-	2.1	1	5.1
				(2) 23' x 3' air inflatable boom									
46' FRV (Bastian Bay)	1	15,257	65	(2) 2-brush Lamor Skimmers	4	4' seas	CGA/ Vermilion, LA	2	-	-	6.6	1	9.6
				(2) 23' x 3' air inflatable boom									
46' FRV (Timbalier Bay)	1	15,257	65	(2) 2-brush Lamor Skimmers	4	4' seas	CGA/ Aransas Pass, TX	2	-	-	20	1	23
				(2) 23' x 3' air inflatable boom									
60' Shallow Water FRV	1	22,885	249	(2) 3-brush Lamor Skimmers	3	2' seas	CGA/ Venice, LA	2	-	-	1.9	1	4.9
				(2) 17' x 3' air inflatable boom									
60' Shallow Water FRV	1	22,885	249	(2) 3-brush Lamor Skimmers	3	2' seas	CGA/ Leeville, LA	2	-	-	2.1	1	5.1
				(2) 17' x 3' air inflatable boom									
60' Shallow Water FRV	1	22,885	249	(2) 3-brush Lamor Skimmers	3	2' seas	CGA/ Galveston, TX	2	-	-	13.3	1	16.3
				(2) 17' x 3' air inflatable boom									
56' Shallow Water FRV	1	21,500	249	(2) 36" Marco belt skimmer	4 for belt only op (2-CGAS, 2-OSRO) or 8 for full boom deployment (2-CGAS, 6-OSRO)	1' seas	CGA/ Leeville, LA	2	-	-	2.1	1	5.1
				(2) 14' to 16' flat bottom work boats									
				(2) 75' x 3' air inflatable boom									
56' Shallow Water FRV	1	21,500	249	(2) 36" Marco belt skimmer	4 for belt only op (2-CGAS, 2-OSRO) or 8 for full boom deployment (2-CGAS, 6-OSRO)	1' seas	CGA/ Vermilion, LA	2	-	-	6.6	1	9.6
				(2) 14' to 16' flat bottom work boats									
				(2) 75' x 3' air inflatable boom									
56' Shallow Water FRV	1	21,500	249	(2) 36" Marco belt skimmer	4 for belt only op (2-CGAS, 2-OSRO) or 8 for full boom deployment (2-CGAS, 6-OSRO)	1' seas	CGA/ Venice, LA	2	-	-	1.9	1	4.9
				(2) 14' to 16' flat bottom work boats									
				(2) 75' x 3' air inflatable boom									
56' Shallow Water FRV	1	21,500	249	(2) 36" Marco belt skimmer	4 for belt only op (2-CGAS, 2-OSRO) or 8 for full boom deployment (2-CGAS, 6-OSRO)	1' seas	CGA/ Aransas Pass, TX	2	-	-	20	1	23
				(2) 14' to 16' flat bottom work boats									
				(2) 75' x 3' air inflatable boom									
Marco SWS	1	3,588	34	Marco Class 1D skimmer	3 (1-CGAS, 2-OSRO)	<1' seas	CGA/ Leeville, LA	2	4.6 ⁵	1	1.9	1	10.5
Marco SWS	1	3,588	34	Marco Class 1D skimmer	3 (1-CGAS, 2-OSRO)	<1' seas	CGA/ Venice, LA	2	-	1	1.9	1	5.9
Marco SWS	1	3,588	34	Marco Class 1D skimmer	3 (1-CGAS, 2-OSRO)	<1' seas	CGA/ Vermilion, LA	2	6.3 ⁵	1	1.9	1	12.2

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NEARSHORE RESPONSE EQUIPMENT (CONTINUED)													
Type	Quantity	Recovery Rate (EDRC) ¹	Storage (Recovered Oil) ¹	Equipment ²	Personnel Required ³	Operating Limitations	Location	Response Times (Hours)					
								Prep (At Site)	Transport (OTR)	Loadout (Staging)	Transit (Staging to Location)	Deployment	Total ETA ⁴
FRU Unit	1	4,251	200	Foilex 250 weir skimmer	4 (1-CGAS, 3-OSRO)	4' seas	CGA/ Galveston, TX	2	11.8 ⁶	6	23.9	1	44.7
				75' of 53" air inflatable boom									
				(1) Petroleum Industry Designated Vessel									
FRU Unit	1	4,251	200	Foilex 250 weir skimmer	4 (1-CGAS, 3-OSRO)	4' seas	CGA/ Aransas Pass, TX	2	16.7 ⁶	6	35.3	1	61
				75' of 53" air inflatable boom									
				(1) Petroleum Industry Designated Vessel									
Inland Storage Barge	20	-	400,000	(1) Tug	6	7' seas	CGA ⁸	12	-	-	12	-	24
				Shuttle Barge ⁷									

Nearshore EDRC	234,949
Storage	402,505

¹Recovery rate and storage provides the total number for the quantity of skimming vessels listed.

²Equipment listed is for each skimming vessel.

³ Personnel number listed is for each skimming vessel.

⁴Response times dependent upon vessel procurement

⁵Asset to be relocated to staging area in Venice, Louisiana

⁶Asset to be relocated to staging area in Fourchon, Louisiana

⁷ CGA maintains (4) 249 barrel shuttle barges, which can be used to support shallow water skimming operations by offloading at the skimmer recovery location to minimize skimmer travel.

⁸Barge resources are available through an agreement with Clean Gulf Associates. All equipment will be provided on an as-available basis, subject to the terms at the time requested by Clean Gulf Associates or its member.

SHORELINE PROTECTION

Type of Shoreline Protection	Quantity	Equipment Required ¹	Personnel Required	Operating Limitations	Location	Response Times (Hours)				
						Callout	Travel ²	Loadout	Deployment	Total ETA ³
18" Containment Boom	13,500'	(1) Response Vessel	3	2'-3' seas	E3 OMI/Belle Chasse, LA	1	2	1	2	6
10" Containment Boom	500'	(1) Response Vessel	3	2'-3' seas	E3 OMI/Belle Chasse, LA	1	2	1	2	6
5" Absorbent Boom	64,000'	(1) Response Vessel	3	2'-3' seas	E3 OMI/Belle Chasse, LA	1	2	1	2	6
18" Containment Boom	10,000'	(1) Response Vessel	3	2'-3' seas	E3 OMI/Lake Charles, LA	1	4	1	2	8
5" Absorbent Boom	100'	(1) Response Vessel	3	2'-3' seas	E3 OMI/Lake Charles, LA	1	4	1	2	8
18" Containment Boom	4,000'	(1) Response Vessel	3	2'-3' seas	E3 OMI/Venice, LA	1	3	1	2	7
5" Absorbent Boom	32,000'	(1) Response Vessel	3	2'-3' seas	E3 OMI/Venice, LA	1	3	1	2	7
18" Containment Boom	3,500'	(1) Response Vessel	3	2'-3' seas	E3 OMI/Cut Off, LA	1	0.5	1	2	4.5
10" Containment Boom	800'	(1) Response Vessel	3	2'-3' seas	E3 OMI/Cut Off, LA	1	0.5	1	2	4.5
5" Absorbent Boom	2,000'	(1) Response Vessel	3	2'-3' seas	E3 OMI/Cut Off, LA	1	0.5	1	2	4.5
18" Containment Boom	4,400'	(1) Response Vessel	3	2'-3' seas	E3 OMI/Gonzales, LA	1	2	1	2	6
10" Containment Boom	800'	(1) Response Vessel	3	2'-3' seas	E3 OMI/Gonzales, LA	1	2	1	2	6
5" Absorbent Boom	3,200'	(1) Response Vessel	3	2'-3' seas	E3 OMI/Gonzales, LA	1	2	1	2	6
18" Containment Boom	2,000'	(1) Response Vessel	3	2'-3' seas	E3 OMI/Morgan City, LA	1	2	1	2	6
5" Absorbent Boom	1,800'	(1) Response Vessel	3	2'-3' seas	E3 OMI/Morgan City, LA	1	2	1	2	6
18" Containment Boom	9,700'	(1) Response Vessel	3	2'-3' seas	E3 OMI/New Iberia, LA	1	2.5	1	2	6.5
5" Absorbent Boom	1,760'	(1) Response Vessel	3	2'-3' seas	E3 OMI/New Iberia, LA	1	2.5	1	2	6.5
4" Creek Boom	50'	(1) Response Vessel	3	2'-3' seas	E3 OMI/New Iberia, LA	1	2.5	1	2	6.5
18" Containment Boom	6,000'	(1) Response Vessel	3	2'-3' seas	E3 OMI/Deer Park, TX	1	6	1	2	10
5" Absorbent Boom	5,000'	(1) Response Vessel	3	2'-3' seas	E3 OMI/Deer Park, TX	1	6	1	2	10
4" Creek Boom	300'	(1) Response Vessel	3	2'-3' seas	E3 OMI/Deer Park, TX	1	6	1	2	10
18" Containment Boom	10,000'	(1) Response Vessel	3	2'-3' seas	E3 OMI/Lamarque, TX	1	6	1	2	10
10" Containment Boom	100'	(1) Response Vessel	3	2'-3' seas	E3 OMI/Lamarque, TX	1	6	1	2	10
18" Containment Boom	12,000'	(1) Response Vessel	3	2'-3' seas	E3 OMI/Port Arthur, TX	1	5	1	2	9
10" Containment Boom	150'	(1) Response Vessel	3	2'-3' seas	E3 OMI/Port Arthur, TX	1	5	1	2	9
5" Absorbent Boom	2,000'	(1) Response Vessel	3	2'-3' seas	E3 OMI/Port Arthur, TX	1	5	1	2	9
4" Creek Boom	100'	(1) Response Vessel	3	2'-3' seas	E3 OMI/Port Arthur, TX	1	5	1	2	9
18" Containment Boom - 100' sections in trailer	11,800'	(1) Response Vessel	3	2'-3' seas	AMPOL/New Iberia, LA	1	2.5	1	2	6.5
18" Containment Boom - 50' section in trailer	15,700'	(1) Response Vessel	3	2'-3' seas	AMPOL/New Iberia, LA	1	4	1	2	8
18" Containment Boom - in trailer	5,650'	(1) Response Vessel	3	2'-3' seas	AMPOL/New Iberia, LA	1	4	1	2	8

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SHORELINE PROTECTION

Type of Shoreline Protection	Quantity	Equipment Required ¹	Personnel Required	Operating Limitations	Location	Response Times (Hours)				
						Callout	Travel ²	Loadout	Deployment	Total ETA ³
Response Trailer with 18" Containment Boom	900'	(1) Response Vessel	3	2'-3' seas	AMPOL/New Iberia, LA	1	4	1	2	8
10" Containment Boom	4,150'	(1) Response Vessel	3	2'-3' seas	AMPOL/New Iberia, LA	1	4	1	2	8
10" Containment Boom	4,150'	(1) Response Vessel	3	2'-3' seas	AMPOL/New Iberia, LA	1	4	1	2	8
18" Containment Boom (Box trailer)	14,000'	(1) Response Vessel	3	2'-3' seas	AMPOL/Chalmette, LA	1	2	1	2	6
18" Containment Boom (Cage trailer)	2,000'	(1) Response Vessel	3	2'-3' seas	AMPOL/Chalmette, LA	1	2	1	2	6
Response Trailer with 18" Containment Boom	1,700'	(1) Response Vessel	3	2'-3' seas	AMPOL/Chalmette, LA	1	2	1	2	6
18" Containment Boom (Box trailer)	14,000'	(1) Response Vessel	3	2'-3' seas	AMPOL/Port Arthur, TX	1	6	1	2	10
18" Containment Boom (Cage trailer)	2,000'	(1) Response Vessel	3	2'-3' seas	AMPOL/Port Arthur, TX	1	6	1	2	10
18" Containment Boom - response trailer	900'	(1) Response Vessel	3	2'-3' seas	AMPOL/Morgan City, LA	1	3	1	2	7
18" Containment Boom - Goose neck trailer	2,700'	(1) Response Vessel	3	2'-3' seas	AMPOL/Decatur, AL	1	8	1	2	12
18" Containment Boom - 100' sections in trailer	11,800'	(1) Response Vessel	3	2'-3' seas	AMPOL/Gonzales, LA	1	2.5	1	2	6.5
10" Containment Boom (total linear footage)	1,400'	(1) Response Vessel	3	2'-3' seas	ES&H/Belle Chasse, LA	1	1.5	1	2	5.5
18" Containment Boom (total linear footage)	12,000'	(1) Response Vessel	3	2'-3' seas	ES&H/Belle Chasse, LA	1	1.5	1	2	5.5
24" Containment Boom (total linear footage)	4,200'	(1) Response Vessel	3	2'-3' seas	ES&H/Belle Chasse, LA	1	1.5	1	2	5.5
10" Containment Boom (total linear footage)	1,100'	(1) Response Vessel	3	2'-3' seas	ES&H/Venice, LA	1	1	1	2	5
18" Containment Boom (total linear footage)	1,000'	(1) Response Vessel	3	2'-3' seas	ES&H/Venice, LA	1	1	1	2	5
24" Containment Boom (total linear footage)	10,000'	(1) Response Vessel	3	2'-3' seas	ES&H/Venice, LA	1	1	1	2	5
10" Containment Boom (total linear footage)	400'	(1) Response Vessel	3	2'-3' seas	ES&H/Laplace, LA	1	2	1	2	6
18" Containment Boom (total linear footage)	13,000'	(1) Response Vessel	3	2'-3' seas	ES&H/Laplace, LA	1	2	1	2	6
10" Containment Boom (total linear footage)	2,000'	(1) Response Vessel	3	2'-3' seas	ES&H/Houma, LA	1	3	1	2	7
18" Containment Boom (total linear footage)	49,700'	(1) Response Vessel	3	2'-3' seas	ES&H/Houma, LA	1	3	1	2	7
24" Containment Boom (total linear footage)	6,000'	(1) Response Vessel	3	2'-3' seas	ES&H/Houma, LA	1	3	1	2	7

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SHORELINE PROTECTION										
Type of Shoreline Protection	Quantity	Equipment Required ¹	Personnel Required	Operating Limitations	Location	Response Times (Hours)				
						Callout	Travel ²	Loadout	Deployment	Total ETA ³
18" Containment Boom (total linear footage)	500'	(1) Response Vessel	3	2'-3' seas	ES&H/Fourchon, LA	1	3.5	1	2	7.5
10" Containment Boom (total linear footage)	500'	(1) Response Vessel	3	2'-3' seas	ES&H/Golden Meadow, LA	1	3.5	1	2	7.5
18" Containment Boom (total linear footage)	10,500'	(1) Response Vessel	3	2'-3' seas	ES&H/Golden Meadow, LA	1	3.5	1	2	7.5
10" Containment Boom (total linear footage)	2,000'	(1) Response Vessel	3	2'-3' seas	ES&H/Morgan City, LA	1	3	1	2	7
18" Containment Boom (total linear footage)	1,200'	(1) Response Vessel	3	2'-3' seas	ES&H/Morgan City, LA	1	3	1	2	7
10" Containment Boom (total linear footage)	200'	(1) Response Vessel	3	2'-3' seas	ES&H/Lafayette, LA	1	5	1	2	9
18" Containment Boom (total linear footage)	1,000'	(1) Response Vessel	3	2'-3' seas	ES&H/Lafayette, LA	1	5	1	2	9
10" Containment Boom (total linear footage)	200'	(1) Response Vessel	3	2'-3' seas	ES&H/Lake Charles, LA	1	5	1	2	9
18" Containment Boom (total linear footage)	14,000'	(1) Response Vessel	3	2'-3' seas	ES&H/Lake Charles, LA	1	5	1	2	9
24" Containment Boom (total linear footage)	1,000'	(1) Response Vessel	3	2'-3' seas	ES&H/Lake Charles, LA	1	5	1	2	9

¹Please refer to the equipment list in Appendix E for a specific list of response vessels available per location.

²Travel time to staging area in Venice, Louisiana.

³Response time dependent on vessel procurement and availability.

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WILDLIFE PROTECTION RESPONSE

Wildlife Rehabilitation Organization	Location	Response Times (Hours)				
		Callout	Travel	Loadout	Deployment	Total ETA
Wildlife Center of Texas	7007 Katy Road Houston, TX 77024 Phone: 713-861-9453	1.5	7	0.5	1	10
Wildlife Response Services, LLC	P.O. Box 842 Seabrook, TX 77586 Phone: 713-705-5897	1.5	7	0.5	1	10
Tri-State Bird Rescue & Research	110 Possum Hallow Road Newark, DE 19711-3910 Phone: 302-737-9543	1.5	20	0.5	1	23
International Bird Rescue Research Center	4369 Cordelia Road Fairfield, CA 94534 Phone: 707-207-0380	1.5	34	0.5	1	37
Texas Marine Mammal Stranding Network	4700 Avenue U Galveston, TX 77551 Phone: 1-800-9-Mammal	1.5	8	0.5	1	11
Louisiana Marine Mammal Stranding Hotline	5304 Flanders Drive, Suite B Baton Rouge, LA 70808 Phone: 877-942-5343	1.5	3	0.5	1	6

WILDLIFE PROTECTION EQUIPMENT

Supplier	Warehouse	Type of Equipment	Quantity	Staging Area	Response Times (Hours)				
					Callout	Travel	Loadout	Deployment	Total ETA
CGA	Harvey, LA	Bird scare guns (set of 12)	2	Venice, LA	1	1.5	1	1	4.5
CGA	Leeville, LA	Bird scare guns (set of 12)	2	Venice, LA	1	3	1	1	6
CGA	Vermilion, LA	Bird scare guns (set of 12)	2	Venice, LA	1	6.3	1	1	9.3
CGA	Galveston, TX	Bird scare guns (set of 12)	1	Venice, LA	1	8	1	1	11
CGA	Aransas Pass, TX	Bird scare guns (set of 12)	1	Venice, LA	1	10	1	1	13
CGA	Harvey, LA	Primary rehabilitation trailer	1	Venice, LA	1	1.5	0.5	0.5	3.5
CGA	Harvey, LA	Husbandry trailer	1	Venice, LA	1	1.5	0.5	0.5	3.5
CGA	Harvey, LA	Wildlife Supply Trailer	1	Venice, LA	1	1.5	0.5	0.5	3.5

Prepared by:



DISPERSANTS INVENTORY

The most rapid way of acquiring dispersants in the event of an incident is through membership in Clean Gulf Associates and National Response Corporation. The inventory for both organizations is included below:

CLEAN GULF ASSOCIATES INVENTORY

TYPE	QUANTITY	LOCATION	PROVIDER
COREXIT 9500A	31,961 Gallons	ASI Inc. (Houma, LA)	ASI Inc.
COREXIT 9500A	28,000 Gallons	ASI (Houma, LA)	CGA
Accell Clean ® DWD	5,000 Gallons	ASI Inc. (Houma, LA)	CGA
COREXIT 9500A	84,370 Gallons	Harvey, LA	CGA
COREXIT 9500A	30,000 Gallons	Ft. Lauderdale, FL	CCA/OSRL*
COREXIT 9527	660 Gallons	Venice, LA	CGA
Total:			179,991 gallons

NATIONAL RESPONSE CORPORATION INVENTORY

GULF REGION CAPABILITY

TYPE	QUANTITY	LOCATION	PROVIDER
COREXIT® EC9500A	4,240 gallons	Opa Locka, Florida	NRC
COREXIT® EC9500A	4,240 gallons	Corpus Christi, Texas	NRC
COREXIT® EC9500A	4,240 gallons	Panama City, Florida	NRC
COREXIT® EC9500A	2,120 gallons	St. Rose, Louisiana	NRC
FINASOL® OSR 52	2,120 gallons	St. Rose, Louisiana	NRC
FINASOL® OSR 52	4,240 gallons	Pasadena, Texas	NRC
Total:			21,200 gallons

*CGA maintains an agreement with Clean Caribbean to obtain up to 30,000 gallons of dispersants.

DISPERSANT USAGE EQUIPMENT

AIRCRAFT RESPONSE										
Aerial Dispersant System	Supplier & Phone	Warehouse	Aerial Dispersant Package	Quantity	Staging Area	Response Times (Hours)				
						Prep at Site	Loadout Time	Transit	Deployment Time	Total ETA
DC-3 Aircraft Spray Aircraft	Airborne Support (ASI) 985-851-6391	Houma, LA	Dispersant	1,200 Gallons	Houma, LA	2	2	0.7	0.2	4.9
			Spotter Aircraft	1						
			Wildlife Observer	1						
			Ground Personnel	6						
			Crew - Pilots	2						
USCG SMART Team	USCG	Mobile, AL	Personnel - Fluorometer	4	Transport to Morgan City, LA	4.5	1	5	0.5	11
			Crew Boat	1						
Twin Commander 690A Spotter Aircraft	Airborne Support (ASI) 985-851-6391	Houma, LA	No Spraying Capability	N/A	Houma, LA	2	2	0.7	0.2	4.88
			Crew - Pilots	1						
BT-67 Spray Aircraft	Airborne Support (ASI) 985-851-6391	Houma, LA	Dispersant	2,000 Gallons	Houma, LA	2	2	0.7	0.2	4.9
			Spotter Aircraft	1						
			Wildlife Observer	1						
			Ground Personnel	6						
			Crew - Pilots	2						

OVER FLIGHT RESPONSE		
AIR TRANSPORTATION COMPANY	LOCATION	CAPABILITIES
Southern Seaplane, Inc.	#1 Coquille Drive Belle Chasse, LA 70037 Phone: 504-394-5633	Southern Seaplane, Inc. has the ability for an aircraft to be ready for takeoff within (2) hours of notifying the Qualified Individual of a spill.

IN-SITU BURNING EQUIPMENT						
TYPE	QUANTITY	EQUIPMENT	OWNER/ LOCATION	RESPONSE TIMES		
				PROCUREMENT OF PERSONNEL AND EQUIPMENT	TRAVEL	LOADOUT
Elastic American Marine Hydro-Fire Boom System	1	500' of Fire Boom on a Boom Reel	CGA/Harvey, LA	24 Hours	7.0 Hours	2.0 Hours
		Boom reel is complete with a hydraulic power pack, breaking system, and integral air inflation system				
		(2) Elastec E600 Water Pumps with flow meters, pressure gauges, and suction strainer manifolds				
		(2) Towing packages with 400' of 1" two line, fire hose assemblies with 400' of fire hose				
IN-SITU BURNING PLAN	See Section 19					

Each in situ burn task force shall consist of two vessels of opportunity for towing the boom, a primary control vessel for command and control, general support and transportation of the boom to the site , and if necessary, vessels for deflection booming. Also included with the deployment vessels will be a small igniter boat for setting the igniters.

SECTION I
ENVIRONMENTAL MONITORING INFORMATION

(a) Monitoring Systems

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

(b) Incidental Takes

No incidental takes are anticipated. Fieldwood implements the mitigation measures and monitors for incidental takes of protected species according to the following notices to lessees and operators from BOEM/BSEE:

- NTL 2015-G03 “Marine Trash and Debris Awareness and Elimination”
- NTL 2016-G01 “Vessel Strike Avoidance and Injured/Dead Protected Species Reporting”
- NTL 2016-G02 “Implementation of Seismic Survey Mitigation Measure & Protected Species Observer Program”

(c) Flower Garden Banks National Marine Sanctuary

Green Canyon Block 39, Ewing Bank Block 1009 and Ewing Bank Block 1010 are not located in the Flower Garden Banks National Marine Sanctuary therefore, per NTL 2008-G04, the information is not required for operations performed under this IDOCD.

SECTION J
LEASE STIPULATIONS INFORMATION

RUE OCS-G 30402 (Expired Lease No. OCS-G 36331) Green Canyon Block 39, Lease OCS-G 34878 Ewing Bank Block 1009 and Lease OCS-G 34879, Ewing Bank 1010 are subject to the following lease stipulation:

- **Stipulation No.8: Protected Species**

The Federal Endangered Species Act and the Marine Mammal Protect Act are designed to protect threatened and endangered species and marine mammals and apply to activities on the Outer Continental Shelf (OCS).

In addition to the above stipulation, QNE will operate in accordance with the following Notices to Lessees (NTLs) in order 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:

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

SECTION K

MITIGATION MEASURES

(a) Measures taken to minimize or mitigate environmental impacts

The proposed action will implement mitigation measures required by laws and regulations, including all applicable Federal & State requirements concerning air emissions, discharges to water, and solid waste disposal, as well as any additional permit requirements and QNE's policies. Project activities will be conducted in accordance with the Regional OSRP.

(b) Incidental Takes

QNE does not anticipate any incidental takes related to the proposed operations. QNE implements the mitigation measures and monitors for incidental takes of protected species according to the following notices to lessees and operators from both BOEM and BSEE:

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

SECTION L
ENVIRONMENTAL MITIGATION MEASURES INFORMATION

(a) Measures Taken to Minimize or Mitigate Environmental Impacts

The proposed action will implement mitigation measures required by laws and regulations, including all applicable Federal & State requirements concerning air emissions, discharges to water, and solid waste disposal, as well as any additional permit requirements and QNE's policies. Project activities will be conducted in accordance with the Regional OSRP.

(b) Incidental Takes

QNE does not anticipate any incidental takes related to the proposed operations. QNE implements the mitigation measures and monitors for incidental takes of protected species according to the following notices to lessees and operators from both BOEM and BSEE:

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

SECTION M
RELATED FACILITIES AND OPERATIONS INFORMATION

(a) Related OCS Facilities and Operations

QuarterNorth is proposing to further develop the Katmai filed by adding production from Well Loc A in Green Canyon Block 39 (SHL) and Ewing Bank Block 1010 (BHL).

The Katmai development is located in Green Canyon Block 39 (SHL) and Ewing Bank Block 1010 (BHL), at approximately 1929-foot water depth. Well Loc A will be tied back to the South Timbalier Block 308 A (Tarantula) Platform (Complex ID No. 1500-1) which sits in approximately 484-foot water. The A (Tarantula) facility is located at latitude 28.16141388 and longitude -90.22762508.

QuarterNorth plans to install a horizontal subsea tree (OneSubsea HXT) along with an associated 80' foot long, 8.625" inch well jumper to be installed from the proposed Well Loc A to the Katmai ILS all in RUE OCS-G 03042, Green Canyon Block 39. The Katmai production from Well Loc A will tie into existing flowline umbilical, PSN 20202.

(b) Transportation System

The export gas production departs the ST 308 A platform via Williams Energy L.L.C.'s 12-inch pipeline (Segment No. 14685) and is transported to a subsea tie-in with Discovery Gas Transmission LLC's 30-inch pipeline (Segment No. 11161) in South Timbalier Block 308 for ultimate delivery to shore via the Discovery Pipeline System (Operations System No. 34.5/DS0).

The export liquid hydrocarbons departs the ST 308 A platform via Manta Ray Gathering Company, LLC's 8-inch pipeline (Segment No. 14769) and is transported to a subsea tie-in with Manta Ray Gathering Company, LLC's 16-inch pipeline (Segment No. 11269) in Ewing Bank Block 827 for delivery to shore via the Poseidon Pipeline System (Operations System No. 29.5).

An application to modify the existing surface commingling and measurement agreement will be submitted for the proposed changes at ST308 Platform A.

(c) Produced Liquid Hydrocarbons Transportation Vessels

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

SECTION N
SUPPORT VESSELS AND AIRCRAFT INFORMATION

(a) General

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

Commencement of Production

<i>Type</i>	<i>Maximum Fuel Tank Capacity</i>	<i>Maximum Number in Area at Any Time</i>	<i>Trip Frequency or Duration</i>
Intervention Vessel	500 bbls	1	Three times per week

Drillship

<i>Type of Vessel</i>	<i>Maximum Fuel Tank Storage Capacity</i>	<i>Maximum Number of Vessels in Area at Any Time</i>	<i>Trip Frequency or Duration</i>
Crew Boat	1500 bbls	1	1 per week
Supply Boat	2500 bbls	2	2 per vessel per week
Helicopter	286 gallons	1	1 per day

(b) Diesel Oil Supply Vessels

Per NTL 2008-G04, diesel oil supply vessel information is not required for operations performed under this IDOCD.

(c) Drilling Fluid Transportation

Per NTL 2008-G04, drilling fluid transportation information is not required for operations performed under this IDOCD.

(d) Solid and Liquid Waste Transportation

TABLE 2: Waste and Surplus estimated to be transported and/or disposed of onshore is enclosed as **Attachment N-1**.

(e) Vicinity Map

A vicinity map showing the location of the activities proposed herein relative to the shoreline with the distance of the proposed activities from the shoreline and the primary route(s) of the support vessels and aircraft that will be used when traveling between the onshore support facilities and the drilling unit is enclosed as **Attachment N-2**.

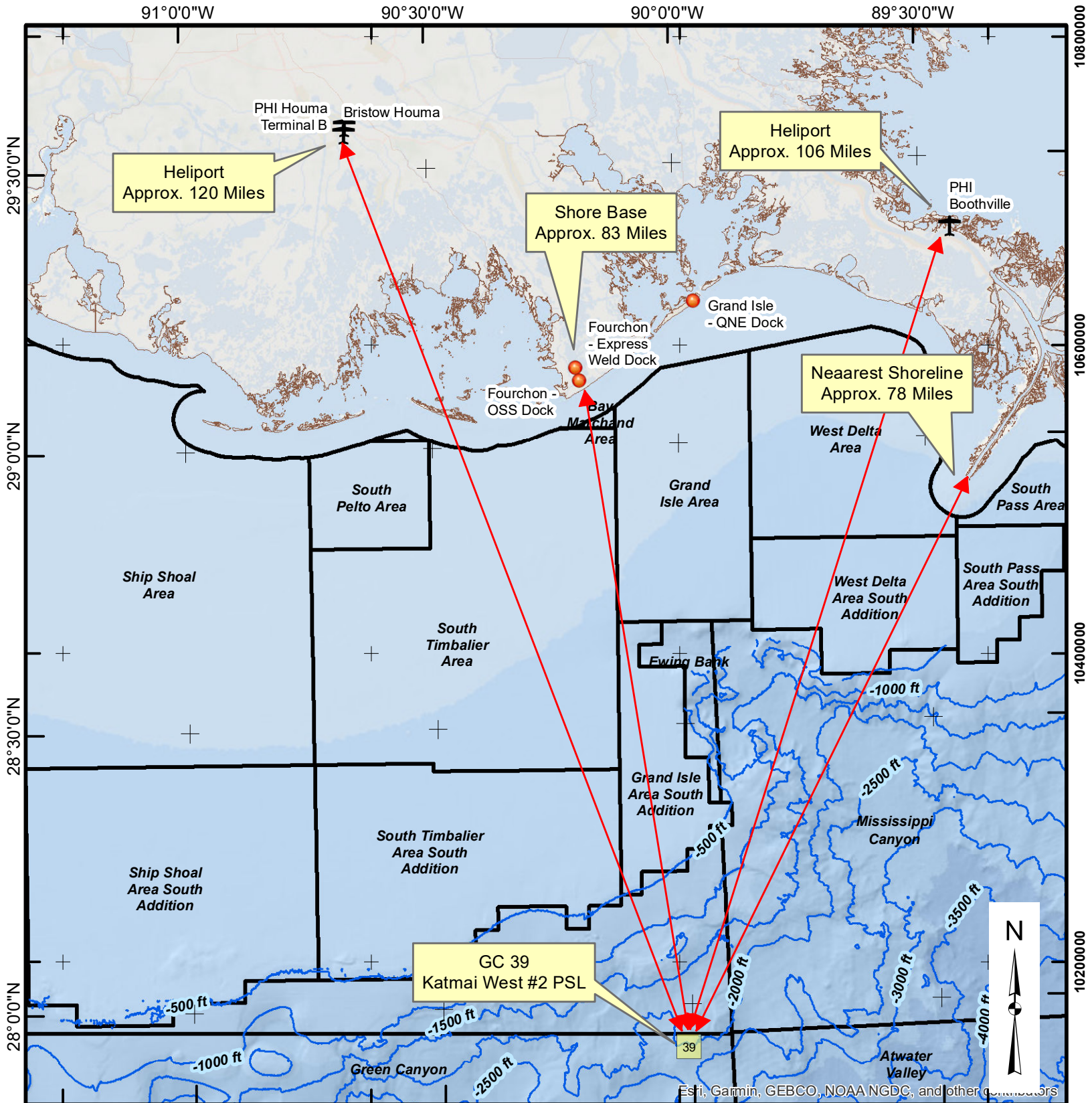
ATTACHMENTS

- 1) Attachment N-1 - Table 2 “Waste and Surplus Estimated to be Transported and/or Disposed of Onshore”
- 2) Attachment N-2 - Vicinity Map

TABLE 2. WASTE AND SURPLUS ESTIMATED TO BE TRANSPORTED AND/OR DISPOSED OF ONSHORE

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

Projected generated waste		Solid and Liquid Wastes transportation	Waste Disposal		
Type of Waste	Composition	Transport Method	Name/Location of Facility	Amount	Disposal Method
Will drilling occur ? If yes, fill in the muds and cuttings.					
<i>EXAMPLE: Synthetic-based drilling fluid or mud</i>	<i>internal olefin, ester</i>	<i>Below deck storage tanks on offshore support vessels</i>	<i>Newport Environmental Services Inc., Ingleside, TX</i>	<i>X bbl/well</i>	<i>Recycled</i>
Oil-based drilling fluid or mud	N/A	N/A	N/A	N/A	N/A
Synthetic-based drilling fluid or mud	IO base, Emulsifiers, CaCL2, Fresh Water, brine, FLC, Barite, CaCO3	Transport via below deck storage tanks in Offshore Support Vessels (OSV)	Newpark Fluid Systems, Port Fourchon, LA	6,000 bbls / well	Returned for credit, recycled
Cuttings wetted with Water-based fluid	Formation Solids	N/A	N/A	N/A	N/A
Cuttings wetted with Synthetic-based fluids	Cuttings/Cement/Metal	Cuttings Boxes	disposal facility	300 bbls / well	disposal facility method
I					
Produced sand	N/A	N/A	N/A	N/A	N/A
Will you have additional wastes that are not permitted for discharge? If yes, fill in the appropriate rows.					
<i>EXAMPLE: trash and debris (recyclables)</i>	<i>Plastic, paper, aluminum</i>	<i>barged in a storage bin</i>	<i>ARC, New Iberia, LA</i>	<i>X lb/well</i>	<i>Recycled</i>
Trash and debris	Plastic, paper, aluminum	Storage bins to shorebase; Trucked to recycling facility	Martin North-Galliano Waste	3,000 cu ft / well	Recycled
Used oil	Various lubricating Oils	Storage bins to shorebase; Trucked to recycling facility	Ecoserve & R360 @ Port Fouchon	75 - 100 bbls / well	Recycled
Wash water	Fresh or Seawater	N/A	N/A	N/A	Discharge Overboard per NPDES Permit
Chemical product wastes	Various Drilling Waste	Environmental Drum/Tote Tanks to Shorebase: Trucked to Recycling facility as reqd if not via OSV	OSV, Rig & Tote Tank Cleaned by Tiger, HydroChem, PSC, Clean Tanks w/ processing via Ecoserve & R360 @ Port Fouchon	800 bbls / well	Recycled or Disposal



Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

220000 240000 260000 280000
 28°00'N 28°30'0"N 29°0'0"N 29°30'0"N
 1020000 1040000 1060000 1080000

Coordinate System: NAD 1927 BLM Zone 15N
 Projection: Transverse Mercator
 Datum: North American 1927
 False Easting: 1,640,416.6667
 False Northing: 0.0000
 Central Meridian: -93.0000
 Scale Factor: 0.9996
 Latitude Of Origin: 0.0000
 Units: Foot US



ATTACHMENT N-2

QUARTER NORTH
 ENERGY

GC40 'Katmai' Field
 Gulf of Mexico

**GC 39 KW#2 DOCD
 VICINITY PLAT**

Date: 7/27/2023 C.I. = 500 ft Author: Kevin Gallatin
 Document Name: GC39_DOCD_Vicinity_Plat_20230727_KDG

SECTION O
ONSHORE SUPPORT FACILITIES INFORMATION

(a) General

The table below is the onshore facilities that will be used to provide supply and service support for the proposed activities under this plan:

<i>Name of Shorebase</i>	<i>Location</i>	<i>Existing/New/Modified</i>
Fourchon SB – Express Weld Dock	544 Dudley Bernard Rd Port Fourchon, LA	Existing
Heliport – PHI Houma Terminal B	3550 Taxi Rd Houma, LA 70363	Existing

(b) Support Base Construction or Expansion

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

(c) Support Base Construction or Expansion Timetable

QNE will not expand the existing shorebase as a result of the operations proposed in this IDOCD.

(d) Waste Disposal

Please see Table 2 titled, “Waste and Surplus Estimated to be Transported and/or Disposed of Onshore” enclosed under Section N of this plan.

SECTION P
COASTAL ZONE MANAGEMENT (CZMA) INFORMATION

The installation application for the proposed well jumper will be sent to the Louisiana Office of Coastal Zone Management as required by regulation for the pipeline permit and consistency for review and approval in the 4th quarter of 2023.

CONSISTENCY CERTIFICATION

INITIAL JOINT DEVELOPMENT OPERATIONS COORDINATION DOCUMENT

**LEASE OCS-G 34878, EWING BANK 1009
LEASE OCS-G 34879, EWING BANK 1010
RUE OCS-G 30402, GREEN CANYON BLOCK 39**

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

QuarterNorth Energy LLC
Lessee or Operator



Melissa Guidry for Brenda Montalvo, QNE Regulatory Director
Certifying Official

Date

SECTION Q
ENVIRONMENTAL IMPACT ANALYSIS (EIA)

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

ATTACHMENT

- 1) Attachment Q-1_Environmental Impact Analysis

ENVIRONMENTAL IMPACT ANALYSIS FINAL REPORT

QuarterNorth Energy, LLC

Surface Location:

Green Canyon Area, Block 39
Lease No. OCS-G 30402
Katmai West 2 (KW2)
Well Locations A & B

July 27, 2023

Prepared For:
QuarterNorth Energy, LLC
3737 Buffalo Speedway, Suite 800, Houston, TX 77098

QUARTER[®]NORTH
ENERGY

Prepared By:
Trusted Compliance, LLC
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ENVIRONMENTAL IMPACT ANALYSIS WORKSHEET

Identify the IPF’s that can cause impacts to the listed environmental resources by placing an “x” in the space under each IPF category associated with your proposed activities that may impact a particular environmental resource. If you determine an IPF would not impact a particular environmental resource, leave the space blank. For those cells that are footnoted, provide a statement as to the applicability to your proposed operations, and, where there may be an effect, provide an analysis of the effect. If you are aware of other environmental resources at or near your activity’s site that are not included on the worksheet, address them too.

Environmental Resources	Impact Producing Factors (IPFs) Categories and Examples					
	Refer to a recent GOM OCS Lease Sale EIS for a more complete list of 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 emplacements, etc.)	Wastes sent to shore for treatment or disposal	Accidents (e.g., oil spills, chemical spills, H ₂ S releases)	Other IPFs you identify
Site-specific at Offshore Location						
Designated topographic features		(1)	(1)		(1)	
Pinnacle Trend area live bottoms		(2)	(2)		(2)	
Eastern Gulf live bottoms		(3)	(3)		(3)	
Chemosynthetic communities			(4)			
Water quality		x	x	x	x	
Fisheries		x	x		x	
Marine mammals	x(8)	x	x		x(8)	
Sea turtles	x(8)	x	x		x(8)	
Air quality	x(9)				x	
Shipwreck sites (known or potential)			x(7)			
Prehistoric archaeological sites			x(7)			
Vicinity of Offshore Location						
Essential fish habitat		x	x		x(6)	
Marine and pelagic birds	x				x	
Public health and safety					(5)	
Coastal and Onshore						
Beaches					x(6)	
Wetlands					x(6)	
Shore birds and coastal nesting birds					x(6)	
Coastal wildlife refuges					x	
Wilderness areas					x	
Other Resources You Identify						

NOTE: The numbers in parentheses refer to the footnotes on page 2 of this form.

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 3-mile zone of any topographic feature (submarine bank) protected by the Topographic Features Stipulation attached to an OCS lease;
 - (c) Essential Fish Habitat (EFH) criteria of 500 ft from any no-activity zone; or
 - (d) Proximity of any submarine bank (500 ft buffer zone) with relief greater than 2 meters that is not protected by the Topographic Features Stipulation attached to an OCS lease.
2. Activities with any bottom disturbance within an OCS lease block protected through the Live Bottom (Pinnacle Trend) Stipulation attached to an OCS lease.
3. Activities within any Eastern Gulf OCS block where seafloor habitats are protected by the Live Bottom (Low- Relief) Stipulation attached to an OCS lease.
4. Activities on blocks designated by the BOEM as being in water depths 400 meters or greater.
5. Exploration or production activities where H₂S concentrations greater than 500 ppm might be encountered.
6. All activities that could result in an accidental spill of produced liquid hydrocarbons or diesel fuel that you determine would impact these environmental resources. If the proposed action is located a sufficient distance from a resource that no impact would occur, the EIA can note that in a sentence or two.
7. All activities that involve seafloor disturbances, including anchor emplacements, in any OCS block designated by the BOEM as having high-probability for the occurrence of shipwrecks or prehistoric sites, including such blocks that will be affected that are adjacent to the lease block in which your planned activity will occur. If the proposed activities are located a sufficient distance from a shipwreck or 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.

Paperwork Reduction Act of 1995 (PRA) Statement: The PRA (44 U.S.C. 3501 et seq.) requires us to inform you that BOEM collects this information as part of an applicant's Exploration Plan (EP) or Development Operations Coordination Document (DOCD) submitted for BOEM approval. We use the information in our review and data entry for OCS plans. Responses are mandatory (43 U.S.C 1334). We will protect proprietary data according to the Freedom of Information Act and 30 CFR 550.197. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid Office of Management and Budget Control Number. The public reporting burden for this form is included in the burden for preparing EPs and DOCDs. We estimate that burden to average 600 hours per response for EPs and 700 hours per response for DOCDs, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the forms associated with subpart B. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Bureau of Ocean Energy Management, Regulation and Enforcement, 45600 Woodland Road, Sterling, Virginia 20166.

II. ANALYSIS OF IMPACTS

The proposed project includes the drilling and completion of two wells, installation of a subsea tree and lease term jumper.

A. SITE SPECIFIC IMPACTS

1. DESIGNATED TOPOGRAPHIC FEATURES

There are no impacts to designated topographic features expected from the proposed project including Impact Producing Factors (IPFs) such as emissions, effluents, physical disturbances to the seafloor, wastes sent to shore for treatment or disposal, accidents, or other factors or resources identified.

The proposed project is not located in an area affected by the designated topographic feature stipulation.

2. PINNACLE TREND AREA LIVE BOTTOMS

There are no impacts to a pinnacle trend area expected from the proposed project IPFs such as emissions, effluents, physical disturbances to the seafloor, wastes sent to shore for treatment or disposal, accidents, or other factors or resources identified.

The proposed project is not located in an area affected by the pinnacle trend feature stipulation.

3. EASTERN GULF LIVE BOTTOMS

There are no impacts to a live bottom low relief area expected from the proposed project including IPFs such as emissions, effluents, physical disturbances to the seafloor, wastes sent to shore for treatment or disposal, accidents, or other factors or resources identified.

The proposed project is not located in an area affected by the live bottom feature stipulation.

4. CHEMOSYNTHETIC COMMUNITIES

There are no impacts to high density deep-water benthic communities from the proposed project including IPFs such as emissions, effluents, physical disturbances to the seafloor, wastes sent to shore for treatment or disposal, accidents, or other factors or resources identified.

The proposed project is not located in an area affected by the known high-density deep water benthic community stipulation.

5. WATER QUALITY

IPFs that have the potential to cause impacts to water quality from the proposed project include effluents, physical disturbances to the seafloor, wastes sent to shore for treatment and disposal, and accidents.

Effluents: Discharges of effluents associated with drilling and production activity from the proposed project include overboard effluents including well cutting, drilling and completion fluids, sanitary and domestic wastewater, deck drainage, excess cement and spacers, rig wash water, and uncontaminated cooling water from the drilling rig which will be in compliance with the Federal Water Pollution Control Act, regulated by the United States Environmental Protection Agency – Region 6, and authorized under the National Pollutant Discharge Elimination System General Permit for New and Existing Sources and New Dischargers in the Offshore Subcategory of the Oil and Gas Extraction Category for the Western Portion of the Outer Continental Shelf of the Gulf of Mexico Permit (NPDES). A

comprehensive list of types and quantities of effluent discharges associated with the proposed activities can be found in Appendix G of the governing document to which this report is included. Authorized effluent discharges in compliance with permit conditions are not expected to have significant impact on water quality.

Physical Disturbances to the Seafloor: Bottom disturbances to the seafloor from the proposed project could include rig placement, drilling of the well, and installation of pipelines, platforms, and subsea equipment. Impacts to water quality include water column turbidity and distribution of disturbed sediments and associated nutrients. Impacts from seafloor disturbances are expected to be minimal and effects temporary.

Wastes Sent to Shore for Treatment or Disposal: Wastes generated by the proposed project could include contaminated well cuttings and fluids, cement cuttings, wash water, oily debris, chemical wastes, used oil and non-contaminated domestic waste. Contaminated material will be manifested, transported, and recycled or disposed of as exempt Exploration and Production Waste to an approved facility in accordance with Louisiana Department of Natural Resources regulations regarding E&P Wastes. Domestic waste is transported to an approved domestic waste disposal facility. Waste generated which may be hazardous will be manifested, transported, and recycled or disposed of in accordance with the Resource Conservation and Recovery Act (RCRA). A comprehensive list of types, quantities, and methods of disposal can be found in Appendix G of the governing document to which this report is included. Impacts from waste sent to shore for treatment or disposal are not expected.

Accidents: An accidental spill or well blowout from the proposed project could cause temporary and possibly long term impacts to water quality. Accidental spills would be expected to be small in size, expeditiously recovered from the surface, and droplets in the water table microbiologically degraded, resulting in short term impacts. An accidental blowout of the well could have both short term and long term effects on water quality depending on the size and complexity of the event. In the event of a spill or blowout, the facility will immediately implement the Regional Oil Spill Response Plan and active controls and countermeasures to minimize the impact to water quality.

There are no other IPFs that have the potential to cause impact to water quality from the proposed project including emissions, or other factors or resources identified.

6. FISHERIES

IPFs that have the potential to cause impacts to fisheries from the proposed project include effluents, physical disturbances to the seafloor, and accidents. The Magnuson-Stevens Fishery and Conservation and Management Act protects fisheries through implementation of Fishery Management Plans (FMPs). Fisheries located in the Gulf of Mexico managed by the Gulf of Mexico Fishery Management Council plans include Coastal Migratory Pelagics, Red Drum, Reef Fish, Shrimp, Spiny Lobster, and Coral. Fisheries managed by National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) plans include Tuna, Swordfish, Billfish, and Sharks.

Effluents: Discharges from the proposed project will be in compliance with NPDES permit conditions and are expected to have minimal impact on fisheries or fishing activities in the area.

Physical Disturbances to the Seafloor Bottom disturbances to the seafloor from the proposed project could include rig placement, drilling of the well, and installation of pipelines, platforms, and subsea equipment. Impacts to water column turbidity and distribution of disturbed sediments and associated nutrients could affect fisheries. Impacts to fisheries from seafloor disturbances are expected to be minimal and effects temporary.

Accidents: An accidental spill or well blowout from the proposed project could cause temporary and possibly long term impacts to fisheries and fishing activity. Accidental spills would be expected to be small in size, expeditiously recovered from the surface, and droplets in the water table microbiologically degraded, resulting in short term impacts to fisheries. An accidental blowout of the well could have both short term and long term effects on fisheries and fishing activity depending on the size and complexity of the event. Fishing activities could be interrupted or

temporarily closed. Effects on fishery populations could include mortality, bioaccumulation, and habitat degradation. In the event of a spill or blowout, the facility will immediately implement the Regional Oil Spill Response Plan and active controls and countermeasures to minimize the impact to fisheries.

There are no other IPFs that have the potential to cause impact to fisheries from the proposed project including emissions, wastes sent to shore for treatment or disposal, or other factors or resources identified.

7. MARINE MAMMALS

IPFs that have the potential to cause impacts to marine mammals from the proposed project include emissions, effluents, physical disturbances to the seafloor, and accidents. All marine mammals are protected under the Marine Mammal Protection Act (MMPA). Several species of marine mammals including whales, dolphins, and porpoises occur in the Gulf of Mexico. The Endangered Species Act (ESA) further protects marine mammals designated as endangered or threatened. Species of marine mammals listed as endangered occurring in the Gulf of Mexico include Blue Whale (*Balaenoptera musculus*), Fin Whale (*Balaenoptera physalus*), Humpback Whale (*Megaptera novaeangliae*), Sei Whale (*Balaenoptera borealis*), and Sperm Whale (*Physeter macrocephalus*) and West Indian Manatee (*Trichechus manatus*). No critical habitat for threatened or endangered marine mammal species are designated in the Gulf of Mexico.

Emissions: Noise emissions from the proposed project may have an impact on marine mammals. Noise levels from drilling and production activity are generally low in intensity and are not expected to have a significant impact to marine mammals.

Effluents: Discharges from the proposed project will be in compliance with NPDES permit conditions and are expected to have minimal impact on marine mammals in the area.

Physical Disturbances to the Seafloor: Bottom disturbances to the seafloor from the proposed project could include rig placement, drilling of the well, and installation of pipelines, platforms, and subsea equipment. Impacts to water column turbidity and distribution of disturbed sediments and associated nutrients could affect marine mammals. Impacts to marine mammals from seafloor disturbances are expected to be minimal.

Accidents: An accidental spill or well blowout from the proposed project could cause impacts to marine mammals ranging from sub-lethal to mortal. Accidental spills would be expected to be small in size, expeditiously recovered from the surface, and droplets in the water table microbiologically degraded, resulting in short term impacts to marine mammals. An accidental blowout of the well could have both short term and long term effects on marine mammals depending on the size and complexity of the event. Effects on marine mammal populations could include mortality, bioaccumulation, and habitat degradation. In the event of a spill or blowout, the facility will immediately implement the Regional Oil Spill Response Plan and active controls and countermeasures to minimize the impact to marine mammals.

Vessel traffic has the potential to impact marine mammals in the event of vessel strikes. To minimize the potential for vessel strikes and disturbance to marine mammals, the proposed project will abide by the guidelines of Joint NTL No. 2016-G01 (Vessel Strike Avoidance and Injured/Dead Protected Species Reporting).

Marine debris has the potential to impact marine mammals through entanglement or ingestion causing serious injury or death. To minimize the impact potential to marine mammals, the proposed project will abide by the guidelines of BSEE NTL No. 2015-G03 (Marine Trash and Debris Awareness and Elimination).

There are no other IPFs that have the potential to cause impact to marine mammals from the proposed project including wastes sent to shore for treatment or disposal, or other factors or resources identified.

8. SEA TURTLES

IPFs that have the potential to cause impacts to sea turtles from the proposed project include emissions, effluents, physical disturbances to the seafloor, and accidents. The Endangered Species Act (ESA) protects species designated as endangered or threatened, and all species of turtles which inhabit the Gulf of Mexico are currently listed as threatened or endangered. Species of turtles inhabiting the Gulf of Mexico include; (1) Green Turtle (*Chelonia mydas*), (2) Hawksbill Turtle (*Eretmochelys imbricata*), (3) Kemp's Ridley Turtle (*Lepidochelys kempii*), (4) Leatherback Turtle (*Dermochelys coriacea*), and (5) Loggerhead Turtle (*Caretta caretta*). The project is not located in an area designated as critical habitat for Turtles.

Emissions: Noise emissions from the proposed project may have an impact on turtles. Noise levels from drilling and production activity are generally low in intensity and are not expected to have a significant impact to turtles.

Effluents: Discharges from the proposed project will be in compliance with NPDES permit conditions and are expected to have minimal impact on turtles in the area.

Physical Disturbances to the Seafloor: Bottom disturbances to the seafloor from the proposed project could include rig placement, drilling of the well, and installation of pipelines, platforms, and subsea equipment. Impacts to water column turbidity and distribution of disturbed sediments and associated nutrients could affect turtles. Impacts to turtles from seafloor disturbances are expected to be minimal.

Accidents: An accidental spill or well blowout from the proposed project could cause impacts to turtles ranging from sub-lethal to mortal. Accidental spills would be expected to be small in size, expeditiously recovered from the surface, and droplets in the water table microbiologically degraded, resulting in short term impacts to turtles. An accidental blowout of the well could have both short term and long term effects on turtles depending on the size and complexity of the event. Effects on turtles could include mortality, bioaccumulation, and habitat degradation. In the event of a spill or blowout, the facility will immediately implement the Regional Oil Spill Response Plan and active controls and countermeasures to minimize the impact to turtles.

Vessel traffic has the potential to impact turtles in the event of vessel strikes. To minimize the potential for vessel strikes and disturbance to turtles, the proposed project will abide by the guidelines of Joint NTL No. 2016-G01 (Vessel Strike Avoidance and Injured/Dead Protected Species Reporting).

Marine debris has the potential to impact turtles through entanglement or ingestion causing serious injury or death. To minimize the impact potential to turtles, the proposed project will abide by the guidelines of BSEE NTL No. 2015-G03 (Marine Trash and Debris Awareness and Elimination).

There are no other IPFs that have the potential to cause impact to turtles from the proposed project including wastes sent to shore for treatment or disposal, or other factors or resources identified.

9. AIR QUALITY

IPFs that have the potential to cause impacts to air quality from the proposed project include emissions and accidents.

Emissions: Pollutant emissions from the proposed project include Particulate Matter (PM), Sulphur Oxides (SO_x), Nitrogen Oxides (NO_x), Volatile Organic Compounds (VOC), and Carbon Monoxide (CO) and could cause short term impacts to air quality in the immediate vicinity of the project location. Calculated emissions are below BOEM exemption levels for additional air quality modeling and can be found in Appendix H of the governing document to which this report is included. The proposed project is not expected to have an impact to on-shore air quality due to the activities proposed.

Accidents: An accidental spill or well blowout from the proposed project could cause impacts to air quality. Accidental spills would be expected to be small in size, expeditiously recovered from the surface, resulting in minor and short term impacts to air quality in the vicinity of the project location. An accidental blowout of the well could have both short term and long term effects on air quality depending on the size and complexity of the event. In the event of a spill or blowout, the facility will immediately implement the Regional Oil Spill Response Plan and active controls and countermeasures to minimize the impact to air quality.

There are no other IPFs that have the potential to cause impact to air quality from the proposed project including effluents, physical disturbances to the seafloor, wastes sent to shore for treatment or disposal, or other factors or resources identified.

10. SHIPWRECK SITES

IPFs that have the potential to cause impacts to known or possible shipwreck sites from the proposed project include physical disturbances to the seafloor.

Physical Disturbances to the Seafloor: Bottom disturbances to the seafloor from the proposed project could include rig placement, drilling of the well, and installation of pipelines, platforms, and subsea equipment. The project location is located in designated high probability zone blocks for Joint NTL No. 2011-G-01 requiring Archaeological Resource Surveys and Reports. A shallow geohazards assessment was performed by Fugro Geoconsulting, Inc. (Document No. 27.1502-2854), which included well site clearance letters. The assessment indicated a shipwreck (sonar target No 21) was identified and given an avoidance of 1,000 ft. Three sonar targets (Nos. 17, 19, and 20) associated with shipwreck debris were given 100 ft avoidances. Two other targets (Nos. 3 and 5) were also considered archaeologically significant and given an avoidance of 300 ft. It was recommended that an ROV be used to inspect the seafloor at the proposed wellsite(s) immediately before spud-in to confirm that no new seafloor obstructions are observed. In the unlikely event that a shipwreck should be discovered while conducting the proposed operations, immediate notification of the finding will be made, and every reasonable effort provided to protect the shipwreck. No impacts to shipwrecks are expected from seafloor disturbances from the proposed project.

There are no other IPFs that have the potential to cause impact to shipwreck sites from the proposed project including emissions, effluents, wastes sent to shore for treatment or disposal, accidents, or other factors or resources identified.

11. PRE-HISTORIC ARCHEOLOGICAL SITES

IPFs that have the potential to cause impacts to known or pre-historic archeological sites from the proposed project include physical disturbances to the seafloor.

Physical Disturbances to the Seafloor: Bottom disturbances to the seafloor from the proposed project could include rig placement, drilling of the well, and installation of pipelines, platforms, and subsea equipment. The project location is located in designated high probability zone blocks for Joint NTL No. 2011-G-01 requiring Archaeological Resource Surveys and Reports. A shallow geohazards assessment was performed by Fugro Geoconsulting, Inc. (Document No. 27.1502-2854), which included well site clearance letters. The assessment indicated a shipwreck (sonar target No 21) was identified and given an avoidance of 1,000 ft. Three sonar targets (Nos. 17, 19, and 20) associated with shipwreck debris were given 100 ft avoidances. Two other targets (Nos. 3 and 5) were also considered archaeologically significant and given an avoidance of 300 ft. It was recommended that an ROV be used to inspect the seafloor at the proposed wellsite(s) immediately before spud-in to confirm that no new seafloor obstructions are observed. In the unlikely event that cultural resources should be discovered while conducting the proposed operations, immediate notification of the finding will be made and every reasonable effort provided to protect the cultural resource. No impacts to pre-historic archeological sites are expected from the proposed project.

There are no other IPFs that have the potential to cause impact to archeological sites from the proposed project including emissions, effluents, wastes sent to shore for treatment or disposal, accidents, or other factors or resources identified.

A. VICINITY IMPACTS

1. ESSENTIAL FISH HABITATS

IPFs that have the potential to cause impacts to essential fish habitats from the proposed project include effluents, physical disturbances to the seafloor, and accidents. The Magnuson-Stevens Fishery and Conservation and Management Act protects fisheries through implementation of Fishery Management Plans, which include designating Essential Fish Habitat (EFH) areas. As a Congressional mandate, EFH describes all waters and substrate necessary for fish for spawning, breeding, feeding, or growth to maturity. Nearly 1,000 species, at multiple life stages, have an Essential Fish Habitat (EFH) description, and more than 100 Habitat Areas of Particular Concern for enhanced EFH conservation have been designated at this time. EFH designated within the Gulf of Mexico include such species as Coastal Migratory Pelagic species, Coral, Red Drum, Reef Fish, Stone Crab, and Shrimp, Tuna, Swordfish, Billfish, and Sharks. The project location is within an area designated as Essential Fish Habitat (EFH) for shrimp. The project location is not located within an area designated as a Habitat Areas of Particular Concern (HAPC).

Effluent: Discharges from the proposed project will be in compliance with NPDES permit conditions and are expected to have minimal impact on Essential Fish Habitat in the area.

Physical Disturbances to the Seafloor: Bottom disturbances to the seafloor from the proposed project could include rig placement, drilling of the well, and installation of pipelines, platforms, and subsea equipment. Impacts to water column turbidity and distribution of disturbed sediments and associated nutrients could affect Essential Fish Habitat. Impacts to those habitats from seafloor disturbances are expected to be minimal and effects temporary.

Accidents: An accidental spill or well blowout from the proposed project could cause temporary and possibly long term impacts to Essential Fish Habitat. Accidental spills would be expected to be small in size, expeditiously recovered from the surface, and droplets in the water table microbiologically degraded, resulting in short term impacts. An accidental blowout of the well could have both short term and long term effects on Essential Fish Habitat depending on the size and complexity of the event. Effects could include fish mortality, bioaccumulation, and habitat degradation. In the event of a spill or blowout, the facility will immediately implement the Regional Oil Spill Response Plan and active controls and countermeasures to minimize the impact to Essential Fish Habitat.

There are no other IPFs that have the potential to cause impact to Essential Fish Habitats from the proposed project including emissions, wastes sent to shore for treatment or disposal, or other factors or resources identified.

2. MARINE AND PELAGIC BIRDS

IPFs that have the potential to cause impacts to marine and pelagic birds from the proposed project include emissions and accidents. Marine and pelagic birds found in the gulf coast include Loons, Grebes, Albatrosses, Petrels, Shearwaters, Tropicbirds, Frigatebirds, Cormorants, Gannets, Boobies, Pelicans, Ducks, Geese, Swans, Phalaropes, Gulls, and Skimmers.

Emissions: Noise emissions from the proposed project may have an impact on marine and pelagic birds in the vicinity of the project location. Noise levels from drilling and production activity are generally low in intensity and are not expected to have a significant impact. Pollutant emissions could also have an impact on marine and pelagic birds in the vicinity, however, those impacts are expected to be short term and minimal.

Accidents: An accidental spill or well blowout from the proposed project could cause impacts to birds ranging from sub-lethal to mortal. Accidental spills would be expected to be small in size, expeditiously recovered from the surface, and droplets in the water table microbiologically degraded, resulting in short term impacts. An accidental

blowout of the well could have both short term and long term effects on birds and habitats depending on the size and complexity of the event. Effects could include mortality, bioaccumulation, and habitat degradation. In the event of a spill or blowout, the facility will immediately implement the Regional Oil Spill Response Plan and active controls and countermeasures to minimize the impact to marine and pelagic birds.

Marine debris has the potential to impact marine birds through entanglement or ingestion causing serious injury or death. To minimize the impact potential to birds, the proposed project will abide by the guidelines of BSEE NTL No. 2015-G03 (Marine Trash and Debris Awareness and Elimination).

There are no other IPFs that have the potential to cause impact to marine and pelagic birds from the proposed project including effluents, physical disturbances to the seafloor, wastes sent to shore for treatment or disposal, or other factors or resources identified.

3. PUBLIC HEALTH AND SAFETY

There are no IPFs that have the potential to cause impact to public health and safety from the proposed project including emissions, effluents, physical disturbances to the seafloor, wastes sent to shore for treatment or disposal, accidents, or other factors or resources identified. The project location is located 80 miles from the nearest shoreline in Terrebonne Parish, Louisiana. A prior hydrogen sulfide determination has been performed in the area of the proposed drilling operations has been classified as hydrogen sulfide absent.

B. COASTAL AND ONSHORE IMPACTS

1. BEACHES

IPFs that have the potential to cause impact to beaches from the proposed project location include accidents.

Accidents: An accidental spill or well blowout from the proposed project could cause impacts to beaches. Accidental spills would be expected to be small in size, expeditiously recovered from the surface, and droplets in the water table microbiologically degraded, resulting in short term impacts. An accidental blowout of the well could have both short term and long term effects on beaches depending on the size and complexity of the event. The worst discharge probability estimates the highest chances of catastrophic event making impact to the onshore beaches of Terrebonne Parish, Louisiana at 0.5% based on 3 days from spill, 1% based on 10 days from spill, and 2% based on 30 days from spill. Due to the facility distance from shore and the capacity to respond to a worst case discharge, no significant impacts to beaches would be expected. In the event of a spill or blowout, the facility will immediately implement the Regional Oil Spill Response Plan and active controls and countermeasures to minimize the impact to beaches.

There are no other IPFs that have the potential to cause impact to beaches from the proposed project including emissions, effluents, physical disturbances to the seafloor, wastes sent to shore for treatment or disposal, or other factors or resources identified.

2. WETLANDS

IPFs that have the potential to cause impact to wetlands from the proposed project location include accidents.

Accidents: An accidental spill or well blowout from the proposed project could cause impacts to wetlands. Accidental spills would be expected to be small in size, expeditiously recovered from the surface, and droplets in the water table microbiologically degraded, resulting in short term impacts. An accidental blowout of the well could have both short term and long term effects on wetlands depending on the size and complexity of the event. The worst discharge probability estimates the highest chances of catastrophic event making impact to the onshore

beaches of Terrebonne Parish, Louisiana at 0.5% based on 3 days from spill, 1% based on 10 days from spill, and 2% based on 30 days from spill. Due to the facility distance from shore and the capacity to respond to a worst case discharge, no significant impacts to wetlands would be expected. In the event of a spill or blowout, the facility will immediately implement the Regional Oil Spill Response Plan and active controls and countermeasures to minimize the impact to wetlands.

There are no other IPFs that have the potential to cause impact to wetlands from the proposed project including emissions, effluents, physical disturbances to the seafloor, wastes sent to shore for treatment or disposal, or other factors or resources identified.

3. SHORE AND COASTAL NESTING BIRDS

IPFs that have the potential to cause impacts to shore and nesting birds from the proposed project include accidents. Shore and coastal nesting birds found in the gulf coast include Terns, Pelicans, Plovers, Skimmers, Cranes and Gulls. Piping Plover (*Charadrius melodus*) and Whooping Crane (*Grus americana*) are listed by the Endangered Species Act (ESA) as threatened and have critical habitat designated in the coastal areas and beaches.

Accidents: An accidental spill or well blowout from the proposed project could cause impacts to shore and coastal nesting birds. Accidental spills would be expected to be small in size, expeditiously recovered from the surface, and droplets in the water table microbiologically degraded, resulting in short term impacts. An accidental blowout of the well could have both short term and long term effects on birds depending on the size and complexity of the event. The worst discharge probability estimates the highest chances of catastrophic event making impact to the onshore beaches of Terrebonne Parish, Louisiana at 0.5% based on 3 days from spill, 1% based on 10 days from spill, and 2% based on 30 days from spill. Due to the facility distance from shore and the capacity to respond to a worst case discharge, no significant impacts to shore and coastal nesting birds would be expected. In the event of a spill or blowout, the facility will immediately implement the Regional Oil Spill Response Plan and active controls and countermeasures to minimize the impact to birds.

Marine debris has the potential to impact shore and coastal nesting birds through entanglement or ingestion causing serious injury or death. To minimize the impact potential to birds, the proposed project will abide by the guidelines of BSEE NTL No. 2015-G03 (Marine Trash and Debris Awareness and Elimination).

There are no other IPFs that have the potential to cause impact to shore and coastal nesting birds from the proposed project including emissions, effluents, physical disturbances to the seafloor, wastes sent to shore for treatment or disposal, or other factors or resources identified.

4. COASTAL WILDLIFE REFUGES

IPFs that have the potential to cause impacts to coastal wildlife refuges from the proposed project include accidents. The nearest coastal wildlife refuge to the proposed project location is the Isle Dernieres Barrier Islands Refuge located within Terrebonne Parish, LA.

Accidents: An accidental spill or well blowout from the proposed project could cause impacts to wildlife refuges. Accidental spills would be expected to be small in size, expeditiously recovered from the surface, and droplets in the water table microbiologically degraded, resulting in short term impacts. An accidental blowout of the well could have both short term and long term effects on refuges depending on the size and complexity of the event. The worst discharge probability estimates the highest chances of catastrophic event making impact to onshore beaches of Terrebonne Parish, Louisiana at 0.5% based on 3 days from spill, 1% based on 10 days from spill, and 2% based on 30 days from spill. Due to the facility distance from shore and the capacity to respond to a worst case discharge, no significant impacts to coastal wildlife refuges would be expected. In the event of a spill or blowout, the facility will

immediately implement the Regional Oil Spill Response Plan and active controls and countermeasures to minimize the impact to refuges.

There are no other IPFs that have the potential to cause impact to coastal wildlife refuges from the proposed project including effluents, physical disturbances to the seafloor, wastes sent to shore for treatment or disposal, or other factors or resources identified.

5. WILDERNESS AREAS

IPFs that have the potential to cause impacts to coastal wilderness areas from the proposed project include accidents. The nearest designated wilderness area to the proposed project location is the Breton Wilderness Area.

Accidents: An accidental spill or well blowout from the proposed project could cause impacts to wilderness areas. Accidental spills would be expected to be small in size, expeditiously recovered from the surface, and droplets in the water table microbiologically degraded, resulting in short term impacts. An accidental blowout of the well could have both short term and long term effects on wilderness areas depending on the size and complexity of the event. The worst discharge probability estimates the highest chances of catastrophic event making impact to the onshore beaches of Terrebonne Parish, Louisiana at 0.5% based on 3 days from spill, 1% based on 10 days from spill, and 2% based on 30 days from spill. Due to the facility distance from shore and the capacity to respond to a worst case discharge, no significant impacts to wilderness areas would be expected. In the event of a spill or blowout, the facility will immediately implement the Regional Oil Spill Response Plan and active controls and countermeasures to minimize the impact to wilderness areas.

There are no other IPFs that have the potential to cause impact to wilderness areas from the proposed project including effluents, physical disturbances to the seafloor, wastes sent to shore for treatment or disposal, or other factors or resources identified.

C. OTHER IDENTIFIED IMPACTS

No significant impacts are expected to environmental resources from the proposed project based on Impact Producing Factors identified in the Environmental Impact Analysis Worksheet discussed in this report and prior operations and development in the proposed project location.

III. POTENTIAL IMPACTS FROM ENVIRONMENTAL CONDITIONS

Potential impacts from environmental conditions for the proposed project include hazards to operations, equipment, and personnel from potential adverse weather conditions from significant storm systems during the hurricane season of June through November.

IV. ALTERNATIVES CONSIDERED TO REDUCE IMPACTS

No alternatives to the proposed project to reduce impacts were considered beyond applicable requirements of Lease Sale Stipulations, Notice to Lessees and Operators, and Regulatory Authorities.

V. MITIGATION MEASURES

No mitigation measures to the proposed project to avoid or reduce impacts are to be implemented beyond applicable requirements of Lease Sale Stipulations, Notice to Lessees and Operators, and Regulatory Authorities.

VI. AGENCIES AND PERSONS CONSULTED

No agencies or persons were consulted regarding potential impacts associated with the proposed project.

VII. PREPARERS

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VIII. REFERENCES

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SECTION R
ADMINISTRATIVE INFORMATION

(a) Exempted Information Description

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

(b) Bibliography

- Initial Exploration Plan Control No. N-9910 approved on 12/01/2015

- Fugro GeoConsulting, Inc. entitled Updated Shallow Geohazards Assessment Katmai Prospect (FGCI Report No. 27.1502-2854).