District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

Form C-101
August 1, 2011

Permit 357832

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1. Operator Name and Address	2. OGRID Number
DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	6137
	3. API Number 30-015-54652

4. Property Code	5. Property Name	6. Well No.
335224	CAT ISLAND 16 STATE	233H

7. Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
N	16	23S	31E		510	S	2467	W	Eddy

8. Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
B	16	23S	31E	B	20	N	2220	E	Eddy

9. Pool Information

JAMES RANCH;BONE SPRING	33840

Additional Well Information

11. Work Type	12. Well Type	13. Cable/Rotary	14. Lease Type	15. Ground Level Elevation
New Well	OIL		State	3369
16. Multiple	**17. Proposed Depth**	**18. Formation**	**19. Contractor**	**20. Spud Date**
N	15119	Bone Spring		2/15/2024
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

☒ **We will be using a closed-loop system in lieu of lined pits**

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surf	17.5	13.375	54.5	510	407	0
Int1	11	8.625	32	4065	505	0
Prod	7.875	5.5	20	15119	703	3565

Casing/Cement Program: Additional Comments

22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Annular	5000	2500	
Blind	5000	5000	
Double Ram	5000	5000	
Annular	5000	2500	
Blind	5000	5000	
Double Ram	5000	5000	

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief. **I further certify I have complied with 19.15.14.9 (A) NMAC ☒ and/or 19.15.14.9 (B) NMAC ☒, if applicable.** Signature:	**OIL CONSERVATION DIVISION**
Printed Name: Electronically filed by Jeff Walla	Approved By: Ward Rikala
Title: Supervisor Land	Title:
Email Address: Jeff.Walla@dvn.com	Approved Date: 1/31/2024 Expiration Date: 1/31/2026
Date: 1/22/2024 Phone: 575-748-9925	Conditions of Approval Attached

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Phone: (505) 476-3460 Fax (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office
☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-015-54652	33840	JAMES RANCH; BONE SPRING

[4] Property Code	[5] Property Name	[6] Well Number
335224	CAT ISLAND 16 STATE	#233H

[7] OGRID No.	[8] Operator Name	[9] Elevation
6137	DEVON ENERGY PRODUCTION COMPANY, L.P.	3,369'

[10] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	16	23 S	31 E		510'	SOUTH	2,467'	WEST	EDDY

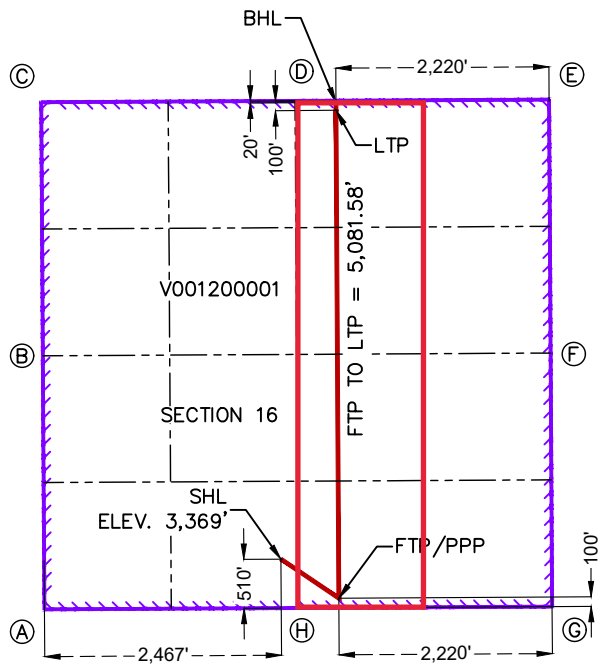
[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	16	23 S	31 E		20'	NORTH	2,220'	EAST	EDDY

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
160			

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

[16]



CORNER COORDINATES NEW MEXICO EAST - NAD 83
A-FOUND 2-INCH IRON PIPE N:472,283.52' E:708,808.55'
B-CALCULATED CORNER N:474,924.68' E:708,792.06'
C-FOUND 2-INCH IRON PIPE N:477,565.85' E:708,775.58'
D-FOUND 1-INCH IRON PIPE N:477,579.39' E:711,419.01'
E-FOUND 1-INCH IRON PIPE N:477,593.16' E:714,064.63'
F-FOUND 1-INCH IRON PIPE N:474,953.23' E:714,080.51'
G-FOUND 2-INCH IRON PIPE N:472,312.24' E:714,095.70'
H-FOUND 1-INCH IRON PIPE N:472,297.80' E:711,451.12'

SURFACE HOLE LOCATION	KICK OFF POINT	FIRST TAKE POINT & PENETRATION POINT	LAST TAKE POINT	BOTTOM HOLE LOCATION
510' FSL & 2,467' FWL	CALLS: 60' FSL & 2219' FEL	100' FSL & 2,220' FEL	100' FNL & 2,220' FEL	20' FNL & 2,220' FEL
NM EAST-NAD 83	NM EAST-NAD 83	NM EAST-NAD 83	NM EAST-NAD 83	NM EAST-NAD 83
NORTH: 472,806.84'	NORTH: 472360	NORTH: 472,400.11'	NORTH: 477,481.61'	NORTH: 477,561.61'
EAST: 711,272.09'	EAST: 711876	EAST: 711,875.16'	EAST: 711,845.26'	EAST: 711,844.78'
LAT: 32.29862141	LAT: 32.29729163	LAT: 32.29749491	LAT: 32.31146305	LAT: 32.31168296
LONG: -103.78334978	LONG: -103.78148620	LONG: -103.78140484	LONG: -103.78141694	LONG: -103.78141716

[17] OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Shayda Omoumi 1/22/2024
Signature Date

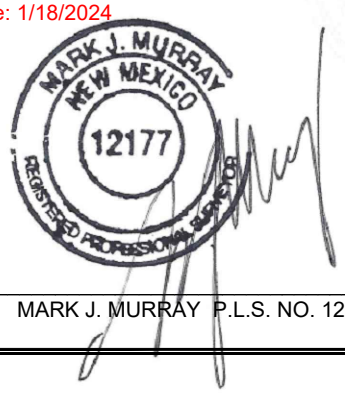
Shayda Omoumi
Printed Name

shayda.omoumi@dvn.com
Email Address

[18] SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date: 1/18/2024



MARK J. MURRAY P.L.S. NO. 12177

Intent [X] As Drilled [ ]

API #

Operator Name:	Property Name:	Well Number
DEVON ENERGY PRODUCTION COMPANY, L.P.	CAT ISLAND 16 STATE	233H

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
O	16	23S	31E		60	SOUTH	2219	EAST	83

Latitude	Longitude	NAD
32.29729163	-103.78148620	83

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
O	16	23 S	31 E		100	SOUTH	2,220	EAST	EDDY

Latitude	Longitude	NAD
32.29749491	-103.78140484	83

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
B	16	23 S	31 E		100	NORTH	2,220	EAST	EDDY

Latitude	Longitude	NAD
32.31146305	-103.78141694	83

Is this well the defining well for the Horizontal Spacing Unit? [Y]

Is this well an infill well? [N]

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #

Operator Name:	Property Name:	Well Number

KZ 06/29/2018

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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

Form APD Comments

Permit 357832

PERMIT COMMENTS

Operator Name and Address:	API Number:
DEVON ENERGY PRODUCTION COMPANY, LP [6137] 333 West Sheridan Ave. Oklahoma City, OK 73102	30-015-54652
	Well: CAT ISLAND 16 STATE #233H

Created By	Comment	Comment Date
omoumis	Please see attached drilling plan, directional plan, NGMP, H2S Plan, and C102.	1/16/2024

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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

Form APD Conditions

Permit 357832

PERMIT CONDITIONS OF APPROVAL

Operator Name and Address:	API Number:
DEVON ENERGY PRODUCTION COMPANY, LP [6137] 333 West Sheridan Ave. Oklahoma City, OK 73102	30-015-54652
	Well: CAT ISLAND 16 STATE #233H

OCD Reviewer	Condition
ward.rikala	Notify OCD 24 hours prior to casing & cement
ward.rikala	Will require a File As Drilled C-102 and a Directional Survey with the C-104
ward.rikala	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
ward.rikala	Cement is required to circulate on both surface and intermediate1 strings of casing
ward.rikala	If cement does not circulate on any string, a CBL is required for that string of casing
ward.rikala	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system
ward.rikala	The Operator is to notify NMOCD by sundry (Form C-103) within ten (10) days of the well being spud

State of New Mexico
Energy, Minerals and Natural Resources Department

Submit Electronically
Via E-permitting

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

Section 1 – Plan Description
Effective May 25, 2021

I. Operator: Devon Energy Production Company, L.P. **OGRID:** 6137 **Date:** 1 / 4 / 2024

II. Type: ☒ Original ☐ Amendment due to ☐ 19.15.27.9.D(6)(a) NMAC ☐ 19.15.27.9.D(6)(b) NMAC ☐ Other.

If Other, please describe: _____

III. Well(s): Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
See Attached						

IV. Central Delivery Point Name: SEE ATTACHMENTS [See 19.15.27.9(D)(1) NMAC]

V. Anticipated Schedule: Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
See Attached						

VI. Separation Equipment: ☒ Attach a complete description of how Operator will size separation equipment to optimize gas capture.

VII. Operational Practices: ☒ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

VIII. Best Management Practices: ☒ Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

Section 2 – Enhanced Plan
EFFECTIVE APRIL 1, 2022

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

☒ Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

IX. Anticipated Natural Gas Production:

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF

X. Natural Gas Gathering System (NGGS):

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in

XI. Map. ☐ Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

XII. Line Capacity. The natural gas gathering system ☐ will ☐ will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

XIII. Line Pressure. Operator ☐ does ☐ does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

☐ Attach Operator's plan to manage production in response to the increased line pressure.

XIV. Confidentiality: ☐ Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

Section 3 - Certifications

Effective May 25, 2021

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

☒ Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system. ***If Operator checks this box, Operator will select one of the following:***

Well Shut-In. ☐ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

Venting and Flaring Plan. ☐ Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- **(a)** power generation on lease;
- **(b)** power generation for grid;
- **(c)** compression on lease;
- **(d)** liquids removal on lease;
- **(e)** reinjection for underground storage;
- **(f)** reinjection for temporary storage;
- **(g)** reinjection for enhanced oil recovery;
- **(h)** fuel cell production; and
- **(i)** other alternative beneficial uses approved by the division.

Section 4 - Notices

1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

Signature:
Printed Name: Jeff Walla
Title: Surface Land and Regulatory Manager
E-mail Address:
Date:
Phone:

OIL CONSERVATION DIVISION **(Only applicable when submitted as a standalone form)**
Approved By:
Title:
Approval Date:
Conditions of Approval:

NATURAL GAS MANAGEMENT PLAN

Section 1 - Plan Description

III. Well(s): Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR		FOOTAGES				Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
Cat Island 16 State 231H			16-23S-32E	2407	FWL	510	FSL	(+/-)1338bopd/(+/-)2158mcfd/(+/-)2287bwpd		
Cat Island 16 State 232H			16-23S-32E	2437	FWL	510	FSL	(+/-)1338bopd/(+/-)2158mcfd/(+/-)2287bwpd		
Cat Island 16 State 233H			16-23S-32E	2467	FWL	510	FSL	(+/-)1338bopd/(+/-)2158mcfd/(+/-)2287bwpd		
Cat Island 16 State 234H			16-23S-32E	2497	FWL	510	FSL	(+/-)1338bopd/(+/-)2158mcfd/(+/-)2287bwpd		

V. Anticipated Schedule: Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow back Date	First Production Date
Cat Island 16 State 231H		3/1/2024	3/31/2024	7/29/2024	7/29/2024	7/29/2024
Cat Island 16 State 232H		3/1/2024	3/31/2024	7/29/2024	7/29/2024	7/29/2024
Cat Island 16 State 233H		3/1/2024	3/31/2024	7/29/2024	7/29/2024	7/29/2024
Cat Island 16 State 234H		3/1/2024	3/31/2024	7/29/2024	7/29/2024	7/29/2024

*dates above are subject to change

VI. Separation Equipment

Devon Energy Production Company, L.P. utilizes a "stage separation" process in which oil and gas separation is carried out through a series of separators operating at successively reduced pressures. Hydrocarbon liquids are produced into a high-pressure inlet separator, then carried through one or more lower pressure separation vessels before entering the storage tanks. The purpose of this separation process is to attain maximum recovery of liquid hydrocarbons from the fluids and allow maximum capture of produced gas into the sales pipeline. Devon utilizes a series of Low-Pressure Compression units to capture gas off the staged separation and send it to the sales pipeline. This process minimizes the amount of flash gas that enters the end-stage storage tanks that is subsequently vented or flared.

VII. Operational Practices

Devon Energy Production Company, L. P. will employ best management practices and control technologies to maximize the recovery and minimize waste of natural gas through venting and flaring.

- During drilling operations, Devon will utilize flares and/or combustors to capture and control natural gas, where technically feasible. If flaring is deemed technically in-feasible, Devon will employ best management practices to minimize or reduce venting to the extent possible.
- During completions operations, Devon will utilize Green Completion methods to capture gas produced during well completions that is otherwise vented or flared. If capture is technically in-feasible, flares and/or combustors will be used to capture and control flow back fluids entering into frac tanks during initial flowback. Upon indication of first measurable hydrocarbon volumes, Devon will turn operations to onsite separation vessels and flow to the gathering pipeline.
- During production operations, Devon will take every practical effort to minimize waste of natural gas through venting and flaring by:
    - Designing and constructing facilities in a manner consistent to achieve maximum capture and control of hydrocarbon liquids & produced gas
    - Utilizing a closed-loop capture system to collect and route produced gas to sales line via low pressure compression, or to a flare/combustor
    - Flaring in lieu of venting, where technically feasible
    - Utilizing auto-ignitors or continuous pilots, with thermocouples connected to Scada, to quickly detect and resolve issues related to malfunctioning flares/combustors
    - Employ the use of automatic tank gauging to minimize storage tank venting during loading events
    - Installing air-driven or electric-driven pneumatics & combustion engines, where technically feasible to minimize venting to the atmosphere
    - Confirm equipment is properly maintained and repaired through a preventative maintenance and repair program to ensure equipment meets all manufacturer specifications
    - Conduct and document AVO inspections on the frequency set forth in Part 27 to detect and repair any onsite leaks as quickly and efficiently as is feasible

VIII. Best Management Practices during Maintenance

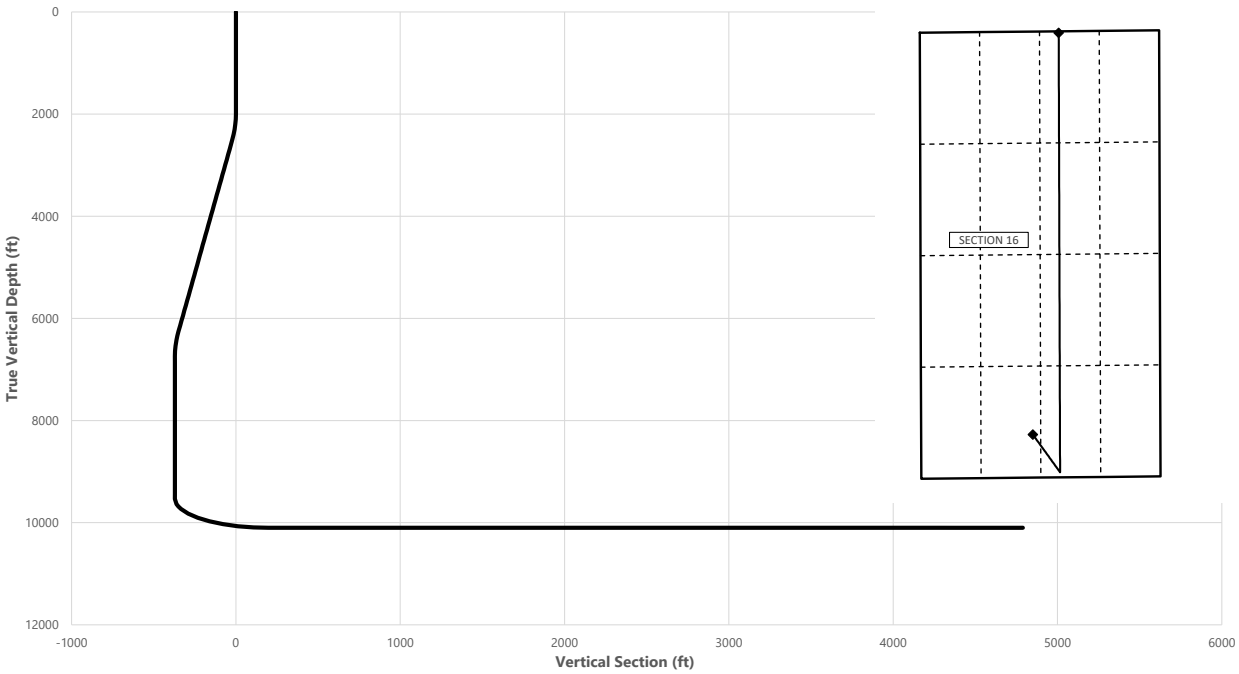
Devon Energy Production Company, L.P. will utilize best management practices to minimize venting during active and planned maintenance activities. Devon is operating under guidance that production facilities permitted under NOI permits have no provisions to allow high pressure flaring and high pressure flaring is only allowed in disruption scenarios so long as the duration is less than eight hours. When technically feasible, flaring during maintenance activities will be utilized in lieu of venting to the atmosphere. Devon will work with third-party operators during scheduled maintenance of downstream pipeline or processing plants to address those events ahead of time to minimize venting. Actions considered include identifying alternative capture approaches or planning to temporarily reduce production or shut in the well to address these circumstances.

devon

Well: CAT ISLAND 16 STATE 233H
County: Eddy
Wellbore: Permit Plan
Design: Permit Plan #1

Geodetic System: US State Plane 1983
Datum: North American Datum 1927
Ellipsoid: Clarke 1866
Zone: 3001 - NM East (NAD83)

MD (ft)	INC (°)	AZI (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Comment
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL
2000.00	0.00	126.50	2000.00	0.00	0.00	0.00	0.00	Start Tangent
2500.00	10.00	126.50	2497.47	-25.89	34.99	-21.52	2.00	Hold Tangent
6322.56	10.00	126.50	6261.95	-420.72	568.57	-349.71	0.00	Drop to Vertical
6822.56	0.00	126.50	6759.41	-446.61	603.56	-371.23	2.00	Hold Vertical
9590.18	0.00	359.66	9527.04	-446.61	603.56	-371.23	0.00	KOP
10490.18	90.00	359.66	10100.00	126.34	600.16	197.20	10.00	Landing Point
15118.70	90.00	359.66	10100.00	4754.77	572.69	4789.13	0.00	BHL



Key Depths	MD (ft)	TVD (ft)
Rustler	485.00	485.00
Salt	815.00	815.00
Base of Salt	3990.17	3965.00
Delaware	4223.72	4195.00
Cherry Canyon	5137.61	5095.00
Brushy Canyon	6497.44	6435.00
Bone Spring 1st	9211.14	9148.00
Bone Spring 2nd / Point of Penetrati	9747.10	9682.00
exit	15038.70	10100.01

	MD (ft)	TVD (ft)	Lat (°)	Long (°)	Section Footages
SHL	0.00	0.00	32.2985	-103.7834	510' FSL, 2467' FWL of Sec 16 in T23S, R31E
KOP	9590.18	9527.04	32.2973	-103.7815	60' FSL, 2219' FEL of Sec 16 in T23S, R31E
Point of Penetration	9747.10	9682.00	32.2975	-103.7814	100' FSL, 2220' FEL of Sec 16 in T23S, R31E
Exit	15038.70	10100.01	32.3115	-103.7814	100' FNL , 2220' FEL of Sec 16 in T23S, R31E
BHL	15118.70	10100.00	32.3116	-103.7815	20' FNL, 2220' FEL of Sec 16 in T23S, R31E

	Y	X	MD
KOP	472360	711876	9590.18

devon

Well: CAT ISLAND 16 STATE 233H
County: Eddy
Wellbore: Permit Plan
Design: Permit Plan #1

Geodetic System: US State Plane 1983
Datum: North American Datum 1927
Ellipsoid: Clarke 1866
Zone: 3001 - NM East (NAD83)

MD (ft)	INC (°)	AZI (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Comment
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL
100.00	0.00	126.50	100.00	0.00	0.00	0.00	0.00	
200.00	0.00	126.50	200.00	0.00	0.00	0.00	0.00	
300.00	0.00	126.50	300.00	0.00	0.00	0.00	0.00	
400.00	0.00	126.50	400.00	0.00	0.00	0.00	0.00	
485.00	0.00	126.50	485.00	0.00	0.00	0.00	0.00	Rustler
500.00	0.00	126.50	500.00	0.00	0.00	0.00	0.00	
600.00	0.00	126.50	600.00	0.00	0.00	0.00	0.00	
700.00	0.00	126.50	700.00	0.00	0.00	0.00	0.00	
800.00	0.00	126.50	800.00	0.00	0.00	0.00	0.00	
815.00	0.00	126.50	815.00	0.00	0.00	0.00	0.00	Salt
900.00	0.00	126.50	900.00	0.00	0.00	0.00	0.00	
1000.00	0.00	126.50	1000.00	0.00	0.00	0.00	0.00	
1100.00	0.00	126.50	1100.00	0.00	0.00	0.00	0.00	
1200.00	0.00	126.50	1200.00	0.00	0.00	0.00	0.00	
1300.00	0.00	126.50	1300.00	0.00	0.00	0.00	0.00	
1400.00	0.00	126.50	1400.00	0.00	0.00	0.00	0.00	
1500.00	0.00	126.50	1500.00	0.00	0.00	0.00	0.00	
1600.00	0.00	126.50	1600.00	0.00	0.00	0.00	0.00	
1700.00	0.00	126.50	1700.00	0.00	0.00	0.00	0.00	
1800.00	0.00	126.50	1800.00	0.00	0.00	0.00	0.00	
1900.00	0.00	126.50	1900.00	0.00	0.00	0.00	0.00	
2000.00	0.00	126.50	2000.00	0.00	0.00	0.00	0.00	Start Tangent
2100.00	2.00	126.50	2099.98	-1.04	1.40	-0.86	2.00	
2200.00	4.00	126.50	2199.84	-4.15	5.61	-3.45	2.00	
2300.00	6.00	126.50	2299.45	-9.33	12.62	-7.76	2.00	
2400.00	8.00	126.50	2398.70	-16.58	22.41	-13.78	2.00	
2500.00	10.00	126.50	2497.47	-25.89	34.99	-21.52	2.00	Hold Tangent
2600.00	10.00	126.50	2595.95	-36.22	48.94	-30.10	0.00	
2700.00	10.00	126.50	2694.43	-46.55	62.90	-38.69	0.00	
2800.00	10.00	126.50	2792.91	-56.88	76.86	-47.28	0.00	
2900.00	10.00	126.50	2891.39	-67.20	90.82	-55.86	0.00	
3000.00	10.00	126.50	2989.87	-77.53	104.78	-64.45	0.00	
3100.00	10.00	126.50	3088.35	-87.86	118.74	-73.03	0.00	
3200.00	10.00	126.50	3186.83	-98.19	132.70	-81.62	0.00	
3300.00	10.00	126.50	3285.31	-108.52	146.66	-90.20	0.00	
3400.00	10.00	126.50	3383.79	-118.85	160.62	-98.79	0.00	
3500.00	10.00	126.50	3482.27	-129.18	174.57	-107.37	0.00	
3600.00	10.00	126.50	3580.75	-139.51	188.53	-115.96	0.00	
3700.00	10.00	126.50	3679.23	-149.84	202.49	-124.55	0.00	
3800.00	10.00	126.50	3777.72	-160.16	216.45	-133.13	0.00	
3900.00	10.00	126.50	3876.20	-170.49	230.41	-141.72	0.00	
3990.17	10.00	126.50	3965.00	-179.81	243.00	-149.46	0.00	Base of Salt
4000.00	10.00	126.50	3974.68	-180.82	244.37	-150.30	0.00	
4100.00	10.00	126.50	4073.16	-191.15	258.33	-158.89	0.00	
4200.00	10.00	126.50	4171.64	-201.48	272.29	-167.47	0.00	
4223.72	10.00	126.50	4195.00	-203.93	275.60	-169.51	0.00	Delaware
4300.00	10.00	126.50	4270.12	-211.81	286.24	-176.06	0.00	
4400.00	10.00	126.50	4368.60	-222.14	300.20	-184.65	0.00	
4500.00	10.00	126.50	4467.08	-232.47	314.16	-193.23	0.00	
4600.00	10.00	126.50	4565.56	-242.80	328.12	-201.82	0.00	
4700.00	10.00	126.50	4664.04	-253.13	342.08	-210.40	0.00	
4800.00	10.00	126.50	4762.52	-263.45	356.04	-218.99	0.00	
4900.00	10.00	126.50	4861.00	-273.78	370.00	-227.57	0.00	
5000.00	10.00	126.50	4959.48	-284.11	383.96	-236.16	0.00	
5100.00	10.00	126.50	5057.97	-294.44	397.92	-244.74	0.00	
5137.61	10.00	126.50	5095.00	-298.33	403.16	-247.97	0.00	Cherry Canyon
5200.00	10.00	126.50	5156.45	-304.77	411.87	-253.33	0.00	
5300.00	10.00	126.50	5254.93	-315.10	425.83	-261.92	0.00	
5400.00	10.00	126.50	5353.41	-325.43	439.79	-270.50	0.00	
5500.00	10.00	126.50	5451.89	-335.76	453.75	-279.09	0.00	
5600.00	10.00	126.50	5550.37	-346.09	467.71	-287.67	0.00	
5700.00	10.00	126.50	5648.85	-356.41	481.67	-296.26	0.00	
5800.00	10.00	126.50	5747.33	-366.74	495.63	-304.84	0.00	
5900.00	10.00	126.50	5845.81	-377.07	509.59	-313.43	0.00	
6000.00	10.00	126.50	5944.29	-387.40	523.55	-322.02	0.00	
6100.00	10.00	126.50	6042.77	-397.73	537.50	-330.60	0.00	
6200.00	10.00	126.50	6141.25	-408.06	551.46	-339.19	0.00	
6300.00	10.00	126.50	6239.73	-418.39	565.42	-347.77	0.00	
6322.56	10.00	126.50	6261.95	-420.72	568.57	-349.71	0.00	Drop to Vertical

devon

Well: CAT ISLAND 16 STATE 233H
County: Eddy
Wellbore: Permit Plan
Design: Permit Plan #1

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Ellipsoid: Clarke 1866
Zone: 3001 - NM East (NAD83)

MD (ft)	INC (°)	AZI (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Comment
6400.00	8.45	126.50	6338.39	-428.10	578.55	-355.85	2.00	
6497.44	6.50	126.50	6435.00	-435.65	588.74	-362.12	2.00	Brushy Canyon
6500.00	6.45	126.50	6437.54	-435.82	588.97	-362.26	2.00	
6600.00	4.45	126.50	6537.08	-441.47	596.61	-366.96	2.00	
6700.00	2.45	126.50	6636.89	-445.05	601.45	-369.93	2.00	
6800.00	0.45	126.50	6736.86	-446.56	603.48	-371.18	2.00	
6822.56	0.00	126.50	6759.41	-446.61	603.56	-371.23	2.00	Hold Vertical
6900.00	0.00	359.66	6836.86	-446.61	603.56	-371.23	0.00	
7000.00	0.00	359.66	6936.86	-446.61	603.56	-371.23	0.00	
7100.00	0.00	359.66	7036.86	-446.61	603.56	-371.23	0.00	
7200.00	0.00	359.66	7136.86	-446.61	603.56	-371.23	0.00	
7300.00	0.00	359.66	7236.86	-446.61	603.56	-371.23	0.00	
7400.00	0.00	359.66	7336.86	-446.61	603.56	-371.23	0.00	
7500.00	0.00	359.66	7436.86	-446.61	603.56	-371.23	0.00	
7600.00	0.00	359.66	7536.86	-446.61	603.56	-371.23	0.00	
7700.00	0.00	359.66	7636.86	-446.61	603.56	-371.23	0.00	
7800.00	0.00	359.66	7736.86	-446.61	603.56	-371.23	0.00	
7900.00	0.00	359.66	7836.86	-446.61	603.56	-371.23	0.00	
8000.00	0.00	359.66	7936.86	-446.61	603.56	-371.23	0.00	
8100.00	0.00	359.66	8036.86	-446.61	603.56	-371.23	0.00	
8200.00	0.00	359.66	8136.86	-446.61	603.56	-371.23	0.00	
8300.00	0.00	359.66	8236.86	-446.61	603.56	-371.23	0.00	
8400.00	0.00	359.66	8336.86	-446.61	603.56	-371.23	0.00	
8500.00	0.00	359.66	8436.86	-446.61	603.56	-371.23	0.00	
8600.00	0.00	359.66	8536.86	-446.61	603.56	-371.23	0.00	
8700.00	0.00	359.66	8636.86	-446.61	603.56	-371.23	0.00	
8800.00	0.00	359.66	8736.86	-446.61	603.56	-371.23	0.00	
8900.00	0.00	359.66	8836.86	-446.61	603.56	-371.23	0.00	
9000.00	0.00	359.66	8936.86	-446.61	603.56	-371.23	0.00	
9100.00	0.00	359.66	9036.86	-446.61	603.56	-371.23	0.00	
9200.00	0.00	359.66	9136.86	-446.61	603.56	-371.23	0.00	
9211.14	0.00	359.66	9148.00	-446.61	603.56	-371.23	0.00	Bone Spring 1st
9300.00	0.00	359.66	9236.86	-446.61	603.56	-371.23	0.00	
9400.00	0.00	359.66	9336.86	-446.61	603.56	-371.23	0.00	
9500.00	0.00	359.66	9436.86	-446.61	603.56	-371.23	0.00	
9590.18	0.00	359.66	9527.04	-446.61	603.56	-371.23	0.00	KOP
9600.00	0.98	359.66	9536.86	-446.52	603.56	-371.15	10.00	
9700.00	10.98	359.66	9636.19	-436.12	603.49	-360.82	10.00	
9747.10	15.69	359.66	9682.00	-425.26	603.43	-350.05	10.00	Bone Spring 2nd / Point of Penetration
9800.00	20.98	359.66	9732.20	-408.62	603.33	-333.54	10.00	
9900.00	30.98	359.66	9821.98	-364.87	603.07	-290.13	10.00	
10000.00	40.98	359.66	9902.80	-306.19	602.72	-231.92	10.00	
10100.00	50.98	359.66	9972.20	-234.37	602.30	-160.67	10.00	
10200.00	60.98	359.66	10028.07	-151.59	601.80	-78.54	10.00	
10300.00	70.98	359.66	10068.72	-60.37	601.26	11.97	10.00	
10400.00	80.98	359.66	10092.92	36.53	600.69	108.10	10.00	
10490.18	90.00	359.66	10100.00	126.34	600.16	197.20	10.00	Landing Point
10500.00	90.00	359.66	10100.00	136.16	600.10	206.94	0.00	
10600.00	90.00	359.66	10100.00	236.15	599.50	306.15	0.00	
10700.00	90.00	359.66	10100.00	336.15	598.91	405.36	0.00	
10800.00	90.00	359.66	10100.00	436.15	598.32	504.57	0.00	
10900.00	90.00	359.66	10100.00	536.15	597.72	603.78	0.00	
11000.00	90.00	359.66	10100.00	636.15	597.13	702.99	0.00	
11100.00	90.00	359.66	10100.00	736.14	596.53	802.20	0.00	
11200.00	90.00	359.66	10100.00	836.14	595.94	901.41	0.00	
11300.00	90.00	359.66	10100.00	936.14	595.35	1000.62	0.00	
11400.00	90.00	359.66	10100.00	1036.14	594.75	1099.83	0.00	
11500.00	90.00	359.66	10100.00	1136.14	594.16	1199.04	0.00	
11600.00	90.00	359.66	10100.00	1236.14	593.56	1298.25	0.00	
11700.00	90.00	359.66	10100.00	1336.13	592.97	1397.46	0.00	
11800.00	90.00	359.66	10100.00	1436.13	592.38	1496.66	0.00	
11900.00	90.00	359.66	10100.00	1536.13	591.78	1595.87	0.00	
12000.00	90.00	359.66	10100.00	1636.13	591.19	1695.08	0.00	
12100.00	90.00	359.66	10100.00	1736.13	590.59	1794.29	0.00	
12200.00	90.00	359.66	10100.00	1836.13	590.00	1893.50	0.00	
12300.00	90.00	359.66	10100.00	1936.12	589.41	1992.71	0.00	
12400.00	90.00	359.66	10100.00	2036.12	588.81	2091.92	0.00	
12500.00	90.00	359.66	10100.00	2136.12	588.22	2191.13	0.00	
12600.00	90.00	359.66	10100.00	2236.12	587.62	2290.34	0.00	
12700.00	90.00	359.66	10100.00	2336.12	587.03	2389.55	0.00	

devon

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MD (ft)	INC (°)	AZI (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Comment
12800.00	90.00	359.66	10100.00	2436.11	586.44	2488.76	0.00	
12900.00	90.00	359.66	10100.00	2536.11	585.84	2587.97	0.00	
13000.00	90.00	359.66	10100.00	2636.11	585.25	2687.18	0.00	
13100.00	90.00	359.66	10100.00	2736.11	584.66	2786.39	0.00	
13200.00	90.00	359.66	10100.00	2836.11	584.06	2885.60	0.00	
13300.00	90.00	359.66	10100.00	2936.11	583.47	2984.81	0.00	
13400.00	90.00	359.66	10100.00	3036.10	582.87	3084.02	0.00	
13500.00	90.00	359.66	10100.00	3136.10	582.28	3183.23	0.00	
13600.00	90.00	359.66	10100.00	3236.10	581.69	3282.44	0.00	
13700.00	90.00	359.66	10100.00	3336.10	581.09	3381.65	0.00	
13800.00	90.00	359.66	10100.00	3436.10	580.50	3480.86	0.00	
13900.00	90.00	359.66	10100.00	3536.10	579.90	3580.07	0.00	
14000.00	90.00	359.66	10100.00	3636.09	579.31	3679.28	0.00	
14100.00	90.00	359.66	10100.00	3736.09	578.72	3778.49	0.00	
14200.00	90.00	359.66	10100.00	3836.09	578.12	3877.70	0.00	
14300.00	90.00	359.66	10100.01	3936.09	577.53	3976.91	0.00	
14400.00	90.00	359.66	10100.01	4036.09	576.93	4076.12	0.00	
14500.00	90.00	359.66	10100.01	4136.08	576.34	4175.33	0.00	
14600.00	90.00	359.66	10100.01	4236.08	575.75	4274.54	0.00	
14700.00	90.00	359.66	10100.01	4336.08	575.15	4373.74	0.00	
14800.00	90.00	359.66	10100.01	4436.08	574.56	4472.95	0.00	
14900.00	90.00	359.66	10100.01	4536.08	573.96	4572.16	0.00	
15000.00	90.00	359.66	10100.01	4636.08	573.37	4671.37	0.00	
15038.70	90.00	359.66	10100.01	4674.77	573.14	4709.76	0.00	exit
15100.00	90.00	359.66	10100.01	4736.07	572.78	4770.58	0.00	
15118.70	90.00	359.66	10100.00	4754.77	572.69	4789.13	0.00	BHL

CAT ISLAND 16 STATE 233H

1. Geologic Formations

TVD of target	10100	Pilot hole depth	N/A
MD at TD:	15119	Deepest expected fresh water	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone?	Hazards*
Rustler	485		
Salt	815		
Base of Salt	3965		
Delaware	4195		
Cherry Canyon	5095		
Brushy Canyon	6435		
Bone Spring 1st	9148		
Bone Spring 2nd	9682		

*H2S, water flows, loss of circulation, abnormal pressures, etc.

2. Casing Program

Hole Size	Csg. Size	Wt (PPF)	Grade	Conn	Casing Interval		Casing Interval	
					From (MD)	To (MD)	From (TVD)	To (TVD)
17 1/2	13 3/8	54 1/2	J-55	BTC	0	510	0	510
11	8 5/8	32	J-55	BTC	0	4065	0	4065
7 7/8 x 6 3/4	5 1/2	20	P110EC	Sprint SF & DWC/C-IS	0	15119	0	10100

**7 7/8" Hole to KOP x 6 ¾" Curve/Lateral

•All casing strings will be tested in accordance with 43 CFR 3172. Must have table for contingency casing.

Variance Approval -
o 5-1/2" production casing will include Sprint SF connection from base of curve to 100 ft. above KOP
o All other 5-1/2" Production Casing will run DWC/C IS (6.05")

3. Cementing Program (3-String Primary Design)

Casing	# Sks	TOC	Wt. (lb/gal)	Yld (ft3/sack)	Slurry Description
Surface	407	Surf	13.2	1.4	Lead: Class C Cement + additives
Int 1	381	Surf	9.0	3.3	Lead: Class C Cement + additives
	124	3565	13.2	1.4	Tail: Class H / C + additives
Production	350	3565	10.0	3.3	Lead: Class H /C + additives
	353	9590	13.2	1.4	Tail: Class H / C + additives

Devon Energy requests to offline cement on intermediate strings that are set in formations shallower than the Wolfcamp. Prior to commencing offline cementing operations, the well will be monitored for any abnormal pressures and confirmed to be static. A dual manifold system (equipped with chokes) for the returns will also be utilized as a redundancy. All equipment used for offline cementing will have a minimum 5M rating to match intermediate sections' 5M BOPE requirements.

Casing String	% Excess
Surface	50%
Intermediate	30%
Production	10%

CAT ISLAND 16 STATE 233H

4. Pressure Control Equipment (Three String Design)

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
Int 1	13-5/8"	5M	Annular	X	50% of rated working pressure
			Blind Ram	X	5M
			Pipe Ram		
			Double Ram	X	
			Other*		
Production	13-5/8"	5M	Annular	X	50% of rated working pressure
			Blind Ram	X	5M
			Pipe Ram		
			Double Ram	X	
			Other*		
			Annular (5M)		
			Blind Ram		
			Pipe Ram		
			Double Ram		
			Other*		

Blowout Preventer Testing Procedure

Variance Request

Devon Energy requests to only test BOP connection breaks after drilling out of surface casing and while skidding between wells which conforms to API Standard 53 and industry standards. This test will include the Top Pipe Rams, HCR, Kill Line Check Valve, QDC (quick disconnect to wellhead) and Shell of the 10M BOPE to 5M for 10 minutes. If a break to the flex hose that runs to the choke manifold is required due to repositioning from a skid, the HCR will remain open during the shell test to include that additional break. The variance only pertains to intermediate hole-sections and no deeper than the Bone Springs Formation where 5M BOP tests are required. The initial BOP test will follow 43 CFR 3172, and subsequent tests following a skid will only test connections that are broken. The annular preventer will be tested to 100% working pressure. This variance will meet or exceed 43 CFR 3172 per the following: Devon Energy will perform a full BOP test per 43 CFR 3172 before drilling out of the intermediate casing string(s) and starting the production hole, before starting any hole section that requires a 10M test, before the expiration of the allotted 14-days for 5M intermediate batch drilling or when the drilling rig is fully mobilized to a new well pad, whichever is sooner. We will utilize a 200' TVD tolerance between intermediate shoes as the cutoff for a full BOP test. The BLM will be contacted 4hrs prior to a BOPE test. The BLM will be notified if and when a well control event is encountered. Break test will be a 14 day interval and not a 30 day full BOPE test interval. If in the event break testing is not utilized, then a full BOPE test would be conducted.

1. Well Control Response:

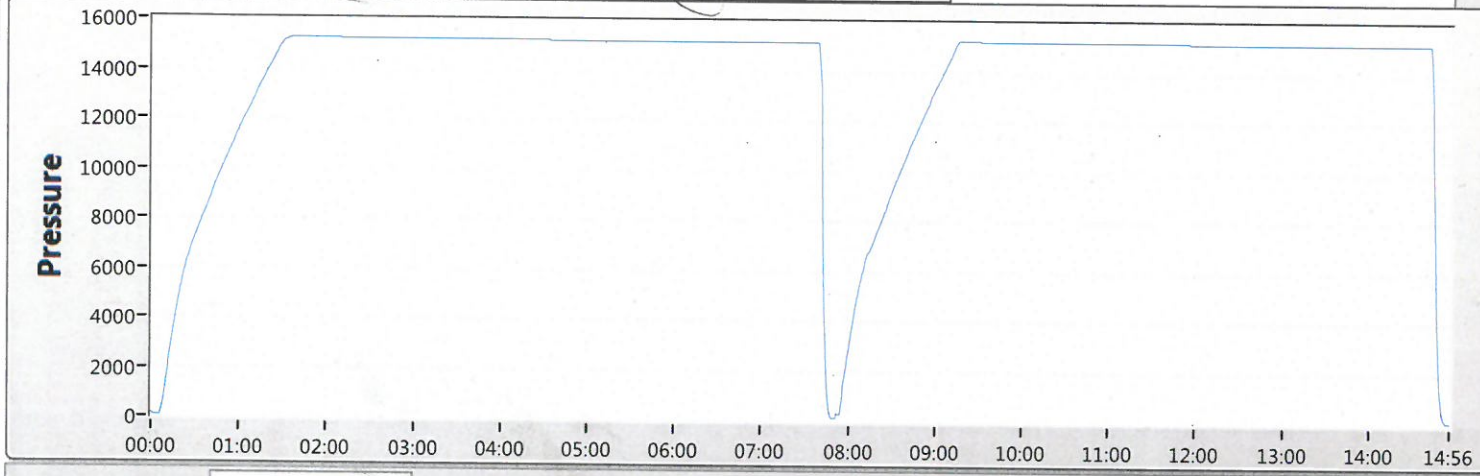
1. Primary barrier remains fluid
2. In the event of an influx due to being underbalanced and after a realized gain or flow, the order of closing BOPE is as follows:
   a) Annular first
   b) If annular were to not hold, Upper pipe rams second (which were tested on the skid BOP test)
   c) If the Upper Pipe Rams were to not hold, Lower Pipe Rams would be third

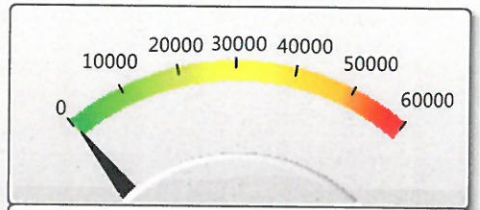
Cactus Wellhead

2-9-17 EBell

80.7 °F

15:49





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Date 02-09-17

Tested By E.BELL

Transducer bay2

Transducer Serial 181504

Calibration Date 9/6/15

	Job#	Part#	Serial#	Description	Test Pressure
1	TRJ0006341-0007	116966	TRJ6341-7-1	ADPT,DRLG,CW,MBU-3T,13-5/8 10M	15000
2					
3					
4					
5				TRANSDUCER CALIBRATION DUE 03/13/2017	
6					
7					
8					

Start | Stop | Zero | Config | Save | Print | EXIT

CAT ISLAND 16 STATE 233H

5. Mud Program (Three String Design)

Section	Type	Weight (ppg)
Surface	FW Gel	8.5-9
Intermediate	Brine	10-10.5
Production	WBM	8.5-9

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring

6. Logging and Testing Procedures

Logging, Coring and Testing	
X	Will run GR/CNL from TD to surface (horizontal well - vertical portion of hole). Stated logs run will be in the Completion Report and sbumitted to the BLM.
	No logs are planned based on well control or offset log information.
	Drill stem test? If yes, explain.
	Coring? If yes, explain.

Additional logs planned		Interval
	Resistivity	
	Density	
X	CBL	Production casing
X	Mud log	KOP to TD
	PEX	

7. Drilling Conditions

Condition	Specfiy what type and where?
BH pressure at deepest TVD	4727
Abnormal temperature	No

Mitigation measure for abnormal conditions. Describe. Lost circulation material/sweeps/mud scavengers.

Hydrogren Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of 43 CFR 3176. If Hydrogen Sulfide is encountered measured values and formations will be provided to the BLM.	
N	H2S is present
Y	H2S plan attached.

8. Other facets of operation

Is this a walking operation? Potentially

1 If operator elects, drilling rig will batch drill the surface holes and run/cement surface casing; walking the rig to next wells on the pad.
2 The drilling rig will then batch drill the intermediate sections and run/cement intermediate casing; the wellbore will be isolated with a blind flange and pressure gauge installed for monitoring the well before walking to the next well.
3 The drilling rig will then batch drill the production hole sections on the wells with OBM, run/cement production casing, and install TA caps or tubing heads for completions.

NOTE: During batch operations the drilling rig will be moved from well to well however, it will not be removed from the pad until all wells have production casing run/cemented.

Will be pre-setting casing? Potentially

1 Spudder rig will move in and batch drill surface hole.
    a. Rig will utilize fresh water based mud to drill surface hole to TD. Solids control will be handled entirely on a closed loop basis.
2 After drilling the surface hole section, the spudder rig will run casing and cement following all of the applicable rules and regulations (43 CFR 3172, all COAs and NMOCD regulations).
3 The wellhead will be installed and tested once the surface casing is cut off and the WOC time has been reached.
4 A blind flange with the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with a pressure gauge installed on the wellhead.
5 Spudder rig operations is expected to take 4-5 days per well on a multi-well pad.
6 The NMOCD will be contacted and notified 24 hours prior to commencing spudder rig operations.
7 Drilling operations will be performed with drilling rig. At that time an approved BOP stack will be nippled up and tested on the wellhead before drilling operations commences on each well.
    a. The NMOCD will be contacted / notified 24 hours before the drilling rig moves back on to the pad with the pre-set surface casing.

Attachments

X Directional Plan
_____ Other, describe

Devon Energy Center
333 West Sheridan Avenue
Oklahoma City, Oklahoma 73102-5015

Hydrogen Sulfide (H_2S) Contingency Plan

For

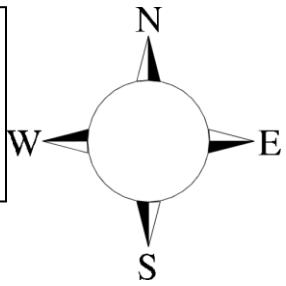
Cat Island 16 State 233H

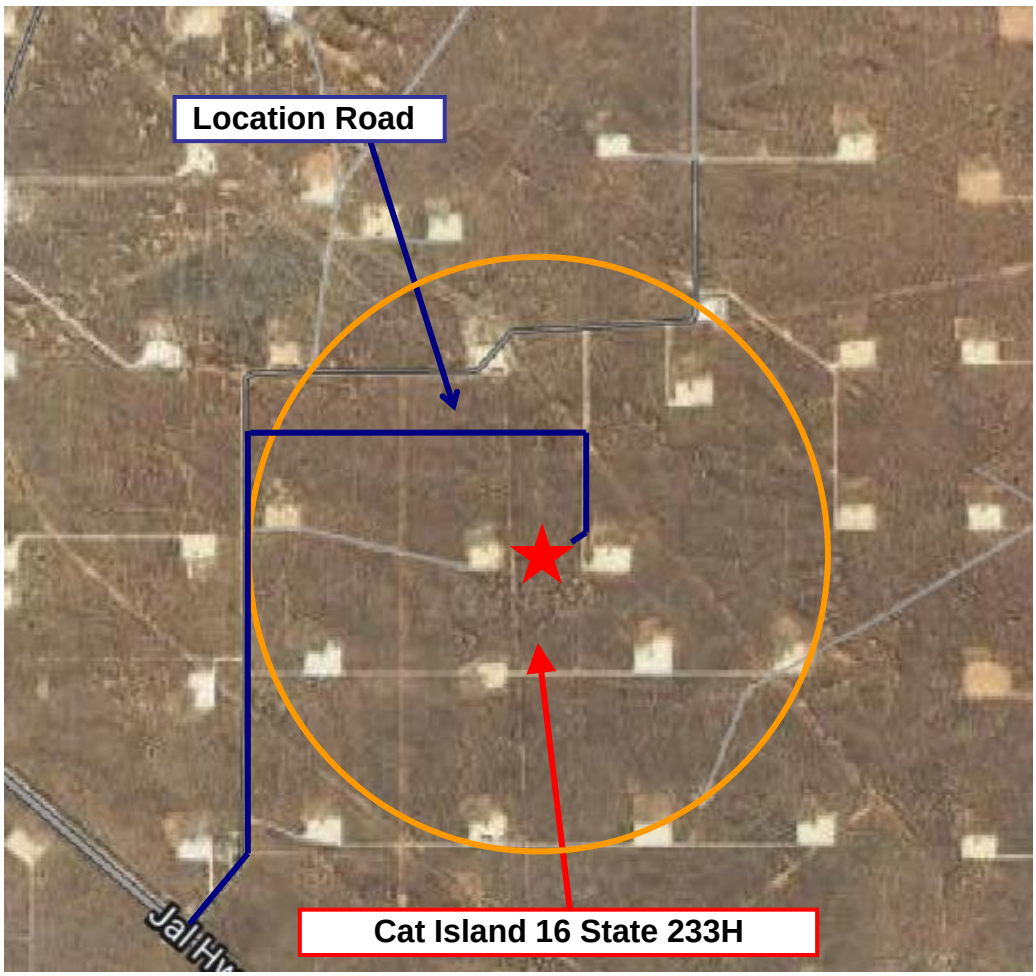
Sec-16 T-23S R-31E
510’ FSL & 2467’ FWL
LAT. = 32.29862141º N (NAD83)
LONG = 103.78334978º W

Eddy County NM

Cat Island 16 State 233H

This is an open drilling site. H_2S monitoring equipment and emergency response equipment will be used within 500' of zones known to contain H_2S, including warning signs, wind indicators and H_2S monitor.





Assumed 100 ppm ROE = 3000' (Radius of Exposure)
100 ppm H2S concentration shall trigger activation of this plan.

Escape

Crews shall escape upwind of escaping gas in the event of an emergency release of gas. Escape can be facilitated from the location entrance road. Crews should then block the entrance to the location from the lease road so as not to allow anyone traversing into a hazardous area. The blockade should be at a safe distance outside of the ROE. There are no homes or buildings in or near the ROE.

Assumed 100 ppm ROE = 3000'

100 ppm H_2S concentration shall trigger activation of this plan.

Emergency Procedures

In the event of a release of gas containing H_2S, the first responder(s) must

- **Isolate the area and prevent entry by other persons into the 100 ppm ROE.**
- **Evacuate any public places encompassed by the 100 ppm ROE.**
- **Be equipped with H_2S monitors and air packs in order to control the release.**
- **Use the "buddy system" to ensure no injuries occur during the response**
- **Take precautions to avoid personal injury during this operation.**
- **Contact operator and/or local officials to aid in operation. See list of phone numbers attached.**
- **Have received training in the**
  - **Detection of H_2S, and**
  - **Measures for protection against the gas,**
  - **Equipment used for protection and emergency response.**

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO_2). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas

Characteristics of H_2S and SO_2

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H_2S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO_2	2.21 Air = 1	2 ppm	N/A	1000 ppm

Contacting Authorities

Devon Energy Corp. personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available. The following call list of essential and potential responders has been prepared for use during a release. Devon Energy Corp. Company response must be in coordination with the State of New Mexico's 'Hazardous Materials Emergency Response Plan' (HMER)

Hydrogen Sulfide Drilling Operation Plan

I. HYDROGEN SULFIDE (H_2S) TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide (H_2S)
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H_2S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H_2S metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H_2S Drilling Operations Plan.

There will be weekly H_2S and well control drills for all personnel in each crew.

II. HYDROGEN SULFIDE TRAINING

Note: All H_2S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonably expected to contain H_2S.

1. Well Control Equipment

A. Flare line

B. Choke manifold – Remotely Operated

C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit

D. Auxiliary equipment may include if applicable: annular preventer and rotating head.

E. Mud/Gas Separator

2. **Protective equipment for essential personnel:**

   30-minute SCBA units located at briefing areas, as indicated on well site diagram, with escape units available in the top doghouse. As it may be difficult to communicate audibly while wearing these units, hand signals shall be utilized.

3. **H_2S detection and monitoring equipment:**

   Portable H_2S monitors positioned on location for best coverage and response. These units have warning lights which activate when H_2S levels reach 10 ppm and audible sirens which activate at 15 ppm. Sensor locations:

   - **Bell nipple**
   - **Rig floor**
   - **Cellar**
   - **Possum Belly/Shale shaker**
   - **Choke manifold**

   Visual warning systems:

   A. Wind direction indicators as shown on well site diagram

   B. Caution/ Danger signs shall be posted on roads providing direct access to locations. Signs will be painted a high visibility yellow with black lettering of sufficient size to be reasonable distance from the immediate location. Bilingual signs will be used when appropriate.

4. **Mud program:**

   The mud program has been designed to minimize the volume of H_2S circulated to surface. Proper mud weight, safe drilling practices and the use of H_2S scavengers will minimize hazards when penetrating H_2S bearing zones.

5. **Metallurgy:**

   A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold lines, and valves shall be H_2S trim.

   B. All elastomers used for packing and seals shall be H_2S trim.

6. **Communication:**

   A. Company personnel have/use cellular telephones in the field.

   B. Land line (telephone) communications at Office

7. **Well testing:**

   A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safety and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H_2S environment will use the closed chamber method of testing.

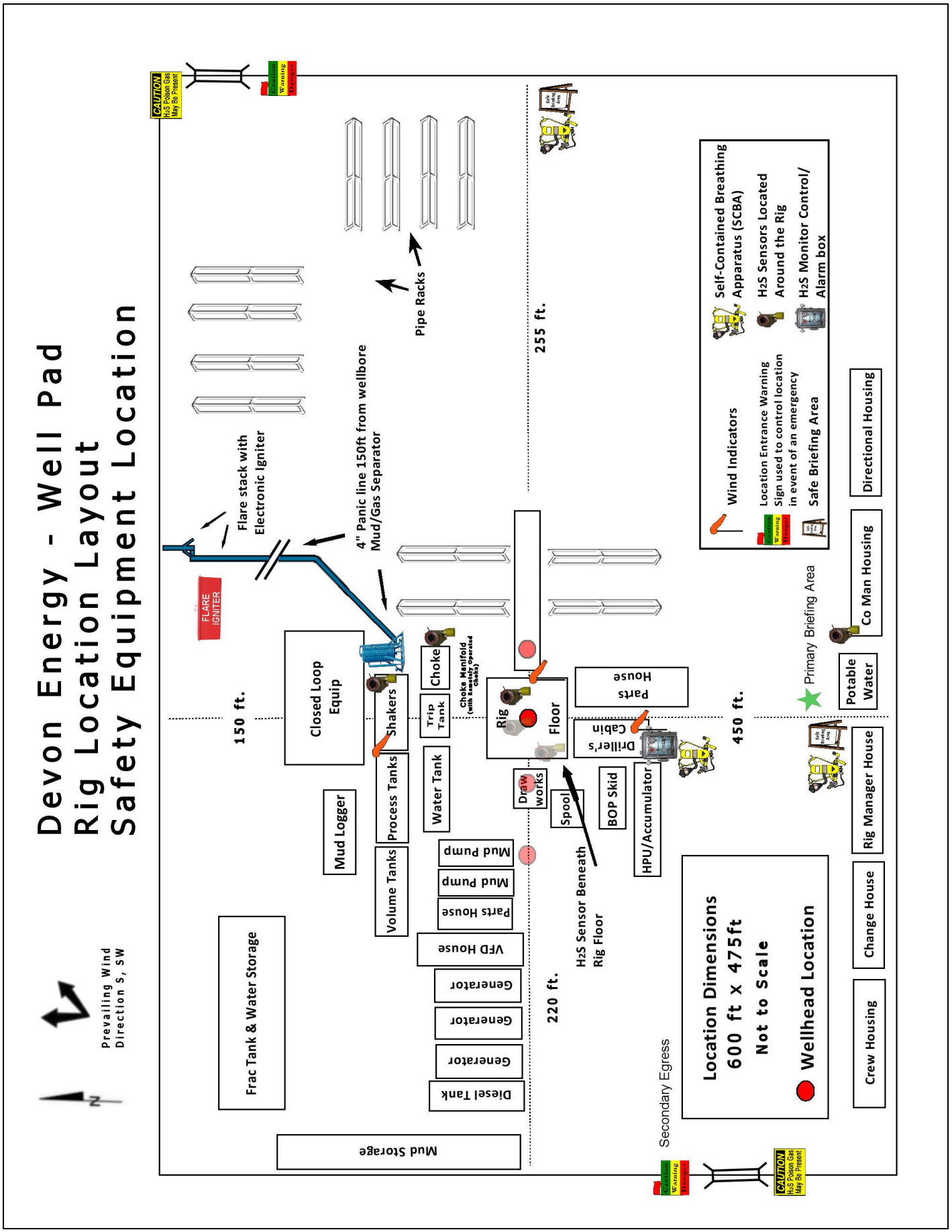
   B. There will be no drill stem testing.

Devon Energy Corp. Company Call List

Employee/Company Contact Representative	Position	Phone Number	After Hours Number
Jonathan Fisher (North)	Drilling Manager	832-967-7912	
Jason Hildebrand (South)	Drilling Manager	405-552-6514	
Rich Downey	Drilling VP	405-228-2415	
Josh Harvey	EHS Manager	405-228-2440	918-500-5536
Laura Wright	EHS Supervisor	405-552-5334	832-969-8145
Robert Glover	EHS Professional	575-703-5712	575-703-5712
Lane Frank	Lead EHS	580-579-7052	580-579-7052
Rickey Porter	Lead EHS	903-720-8315	903-720-8315
Ronnie Handy	Lead EHS	918-839-2046	918-839-2046
Brock Vise	Lead EHS	918-413-3291	918-413-3291

Agency Call List		
Lea County (575)	**Hobbs**	
	Lea County Communication Authority	397-9265
	State Police	885-3138
	City Police	397-9265
	Sheriff's Office	396-3611
	Ambulance	**911**
	Fire Department	397-9308
	LEPC (Local Emergency Planning Committee)	393-2870
	NMOCD	393-6161
	US Bureau of Land Management (Closed)	393-0002
Eddy County (575)	**Carlsbad**	
	State Police	885-3137
	City Police	885-2111
	Sheriff's Office	887-7551
	Ambulance	**911**
	Fire Department	885-3125
	LEPC (Local Emergency Planning Committee)	887-3798
	US Bureau of Land Management	234-5972
	NM Emergency Response Commission (Santa Fe)	(505) 476-9600
	24 HR	(505) 827-9126
	National Emergency Response Center	(800) 424-8802
	National Pollution Control Center: Direct	(703) 872-6000
	For Oil Spills	(800) 280-7118
	Emergency Services	
	Wild Well Control	(281) 784-4700
	Cudd Pressure Control (915) 699-0139	(915) 563-3356
	Halliburton	(575) 746-2757
	B. J. Services	(575) 746-3569
Give GPS position:	Native Air – Emergency Helicopter – Hobbs	(575) 347-9836
	For Air Ambulance - **Eddy County** Dispatch	(575)-616-7155
	For Air Ambulance - **Lea County** (LCCA)	(575)-397-9265
	Poison Control (24/7)	(800) 222-1222
	Oil & Gas Pipeline 24 Hour Service	(800) 364-4366
	NOAA – Website - www.nhc.noaa.gov	
	National Pollution Control Center	202-795-6958
	NPCC – Oil Spills	800-280-7118

Prepared in conjunction with
Dave Small SHARP communications and consulting


Devon Energy - Well Pad
Rig Location Layout
Safety Equipment Location
Prevailing Wind
Direction S, SW
N
CAUTION
H2S Poison Gas
May Be Present
Caution
Warning
Danger
Flare stack with
Electronic Igniter
FLARE
IGNITER
4" Panic line 150ft from wellbore
Mud/Gas Separator
Pipe Racks
255 ft.
150 ft.
Closed Loop
Equip
Shakers
Choke
Choke Manifold
(with Remotely Operated
Choke)
Trip
Tank
Rig
Floor
Parts
House
Driller's
Cabin
450 ft.
Primary Briefing Area
Potable
Water
Co Man Housing
Directional Housing
Self-Contained Breathing
Apparatus (SCBA)
H2S Sensors Located
Around the Rig
H2S Monitor Control/
Alarm box
Wind Indicators
Location Entrance Warning
Sign used to control location
in event of an emergency
Safe Briefing Area
Mud Logger
Process Tanks
Water Tank
Volume Tanks
Mud Pump
Mud Pump
Parts House
VFD House
Generator
Generator
Generator
Diesel Tank
Frac Tank & Water Storage
Mud Storage
Draw
works
Spool
BOP Skid
HPU/Accumulator
H2S Sensor Beneath
Rig Floor
220 ft.
Secondary Egress
Location Dimensions
600 ft x 475ft
Not to Scale
Wellhead Location
Crew Housing
Change House
Rig Manager House