OCD – Artesia – REC'D 6/11/2020

Form 3160-3
(June 2015)

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMNM089057

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other

1c. Type of Completion: ☐ Hydraulic Fracturing ☑ Single Zone ☐ Multiple Zone

7. If Unit or CA Agreement, Name and No.

8. Lease Name and Well No.
SHETLAND 11-2 FED STATE COM
731H

2. Name of Operator
DEVON ENERGY PRODUCTION COMPANY LP

9. API Well No.
30-015-47173

3a. Address
333 West Sheridan Avenue, Oklahoma City, OK 73102

3b. Phone No. *(include area code)*
(800) 583-3866

10. Field and Pool, or Exploratory
PURPLE SAGE-WOLFCAMP

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface SWSW / 15 FSL / 535 FWL / LAT 32.0501938 / LONG -103.7556911
At proposed prod. zone NWNW / 330 FNL / 990 FWL / LAT 32.0785662 / LONG -103.7542405

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 11/T26S/R31E/NMP

14. Distance in miles and direction from nearest town or post office*

12. County or Parish
EDDY

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)
15 feet

16. No of acres in lease
2160

17. Spacing Unit dedicated to this well
320.0

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.
691 feet

19. Proposed Depth
12796 feet / 22850 feet

20. BLM/BIA Bond No. in file
FED: NMB000801

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3208 feet

22. Approximate date work will start*
12/01/2020

23. Estimated duration
45 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be requested by the BLM.

25. Signature
(Electronic Submission)

Name *(Printed/Typed)*
JENNY HARMS / Ph: (800) 583-3866

Date
11/21/2019

Title
Regulatory Compliance Professional

Approved by *(Signature)*
(Electronic Submission)

Name *(Printed/Typed)*
Christopher Walls / Ph: (575) 234-2234

Date
06/09/2020

Title
Petroleum Engineer

Office
Carlsbad Field Office

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Entered 6/11/2020 - JAG OCD

APPROVED WITH CONDITIONS

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 06/09/2020

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 Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 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
30-015-47173	98220	PURPLE SAGE WOLFCAMP

[4] Property Code	[5] Property Name	[6] Well Number
328257	SHETLAND 11-2 FED STATE COM	731H

[7] OGRID No.	[8] Operator Name	[9] Elevation
6137	DEVON ENERGY PRODUCTION COMPANY, L.P.	3208.3

[10] Surface Location

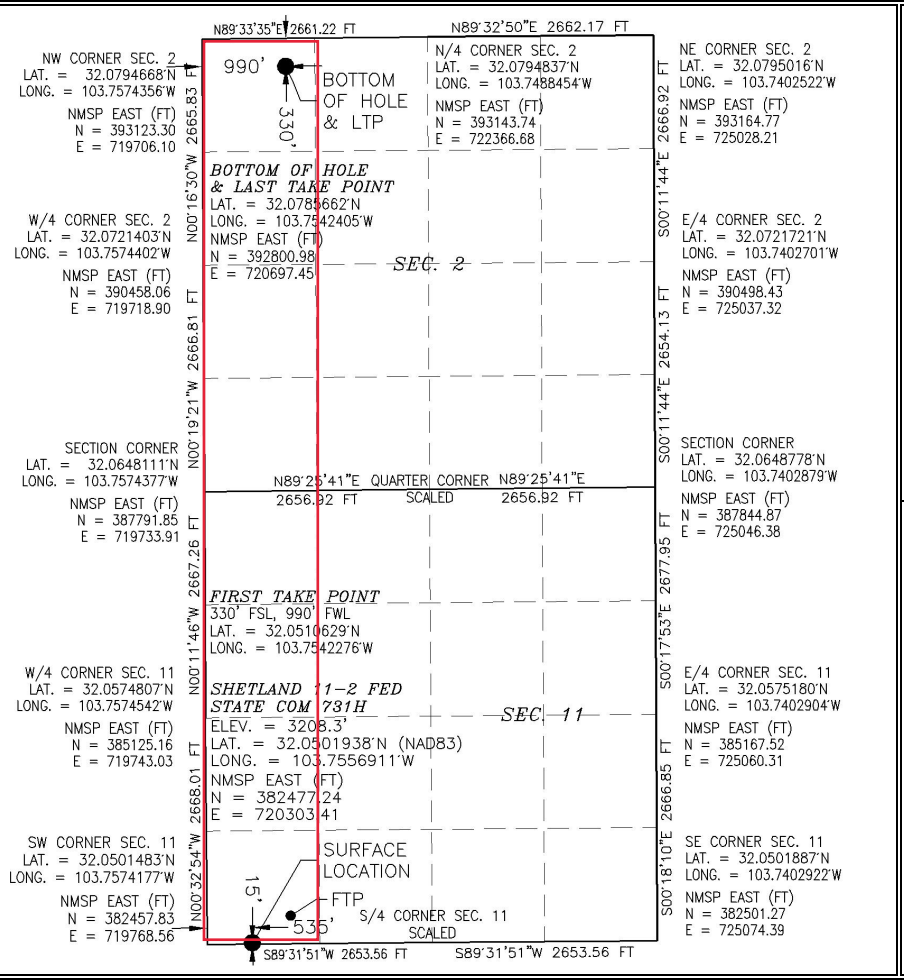
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	11	26 S	31 E		15	SOUTH	535	WEST	EDDY

[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
D	2	26 S	31 E		330	NORTH	990	WEST	EDDY

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
320			

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.



[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.

Jenny Harms 5-4-2020

Signature Date

JENNY HARMS

Printed Name

JENNY.HARMS@DVN.COM

E-mail 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.

APRIL 24, 2020

Date of Survey

Signature and Seal of Professional Surveyor:

Certificate Number: FILIMON F. JARAMILLO, PLS 12797

SURVEY NO. 7470A

INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM I: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the wen, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionany drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

ITEM 24: If the proposal will involve hydraulic fracturing operations, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160

PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service wen or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

ROUTINE USE: Information from the record and/or the record win be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM conects this information to anow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Conection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

(Continued on page 3)

Additional Operator Remarks

Location of Well

0. SHL: SWSW / 15 FSL / 535 FWL / TWSP: 26S / RANGE: 31E / SECTION: 11 / LAT: 32.0501938 / LONG: -103.7556911 (TVD: 0 feet, MD: 0 feet)

PPP: SWSW / 330 FSL / 990 FWL / TWSP: 26S / RANGE: 31E / SECTION: 11 / LAT: 32.0510629 / LONG: -103.7542276 (TVD: 12715 feet, MD: 12826 feet)

BHL: NWNW / 330 FNL / 990 FWL / TWSP: 26S / RANGE: 31E / SECTION: 2 / LAT: 32.0785662 / LONG: -103.7542405 (TVD: 12796 feet, MD: 22850 feet)

BLM Point of Contact

Name: Candy Vigil
Title: LIE
Phone: (575) 234-5982
Email: cvigil@blm.gov

Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

Intent [X] As Drilled [ ]

API #

Operator Name:	Property Name:	Well Number
DEVON ENERGY PRODUCTION COMPANY, L.P.	SHETLAND 11-2 FED STATE COM	731H

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
M	11	26S	31E		50 FSL		990 FWL		EDDY

Latitude	Longitude	NAD
32.05028300	-103.75422200	83

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
M	11	26S	31E		330	SOUTH	990	WEST	EDDY

Latitude	Longitude	NAD
32.0510629	103.7542276	83

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
D	2	26S	31E		330	NORTH	990	WEST	EDDY

Latitude	Longitude	NAD
32.0785662	103.7542405	83

Is this well the defining well for the Horizontal Spacing Unit? [NO]

Is this well an infill well? [YES]

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

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

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

Submit Original
to Appropriate
District Office

GAS CAPTURE PLAN

Date: November 8, 2019

☒ Original Devon & OGRID No.: Devon Energy Production Co., L.P. 6137

☐ Amended - Reason for Amendment: _____

This Gas Capture Plan outlines actions to be taken by the Devon to reduce well/production facility flaring/venting for new completion (new drill, recomplete to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
SHETLAND 11 FED 332H		LOT N, SEC 11, 26S, 31E	350 FSL 2110 FWL			THOROUGHBRED 10 CTB 3
SHETLAND 11-2 FED STATE COM 711H		LOT N, SEC 11, 26S, 31E	15 FSL 475 FWL			SHETLAND 11 CTB 2
SHETLAND 11-2 FED STATE COM 611H		LOT M, SEC 11, 26S, 31E	15 FSL 505 FWL			SHETLAND 11 CTB 2
SHETLAND 11-2 FED STATE COM 731H		LOT M, SEC 11, 26S, 31E	15 FSL 535 FWL			SHETLAND 11 CTB 2
SHETLAND 11-2 FED STATE COM 712H		LOT N, SEC 11, 26S, 31E	350 FSL 2080 FWL			SHETLAND 11 CTB 2
SHETLAND 11-2 FED STATE COM 732H		LOT N, SEC 11, 26S, 31E	350 FSL 2140 FWL			SHETLAND 11 CTB 2
SHETLAND 2-11 FED STATE COM 613H		LOT A, SEC 2, 26S, 31E	170 FNL 1130 FEL			SHETLAND 11 CTB 2
SHETLAND 2-11 FED STATE COM 713H		LOT A, SEC 2, 26S, 31E	170 FNL 1160 FEL			SHETLAND 11 CTB 2
SHETLAND 2-11 FED STATE COM 733H		LOT A, SEC 2, 26S, 31E	170 FNL 1100 FEL			SHETLAND 11 CTB 2
SHETLAND 2-11 FED STATE COM 333H		LOT A, SEC 2, 26S, 31E	170 FNL 1070 FEL			SHETLAND 11 CTB 2
SHETLAND 11 FED 714H		LOT A, SEC 11, 26S, 31E	445 FNL 930 FEL			SNAPPING 12 CTB 2
SHETLAND 11 FED 734H		LOT A, SEC 11, 26S, 31E	445 FNL 900 FEL			SNAPPING 12 CTB 2

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if DCP system is in place. The gas produced from production facility is dedicated to DCP and will be connected to DCP low/high pressure gathering system located in Lea County, New Mexico. It will require 0' of pipeline to connect the facility to low/high pressure gathering system. Devon provides (periodically) to DCP a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, Devon and DCP have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at DCP Processing Plant located in the reference table. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities.

Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on DCP system at that time. Based on current information, it is Devon's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
  - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
  - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
  - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

Reference Table:

DCP Plant locations
Artesia Sec. 7, T18S, R28E,
Eunice Sec. 5, T21S, R36E
Linam Sec. 6, T19S, R37E
Zia II Sec. 19, T19S, R32E

1. Geologic Formations

TVD of target	12796	Pilot hole depth	N/A
MD at TD:	22850	Deepest expected fresh water	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone?	Hazards*
Rustler	850		
Salt	1205		
Base of Salt	4185		
Delaware	4335		
Bell Canyon	4485		
Cherry Canyon	5195		
Brushy Canyon	6545		
Bone Spring 1st	8160		
Bone Spring 2nd	9835		
Bone Spring 3rd	10330		
Wolfcamp	11480		

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

2. Casing Program (Primary Design)

Hole Size	Casing Interval		Csg. Size	Wt (PPF)	Grade	Conn	Min SF Collapse	Min SF Burst	Min SF Tension
	From	To							
17 1/2	0	875 TVD	13 3/8	48.0	H40	STC	1.125	1.25	1.6
9 7/8	0	11480 TVD	7 5/8	29.7	P110	Flushmax III	1.125	1.25	1.6
6 3/4	0	TD	5 1/2	20.0	P110	Vam SG	1.125	1.25	1.6
				BLM Minimum Safety Factor			1.125	1	1.6 Dry 1.8 Wet

• All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 IILB.1.h Must have table for continengcy casing.
• Rustler top will be validated via drilling parameters (i.e. reduction in ROP) and surface casing setting depth revised accordingly if needed.
• A variance is requested for collapse rating on intermediate casing. Operator will keep pipe full while running casing.

• Int casing shoe will be selected based on drilling data/gamma, setting depth with be revised accordingly if needed.

• A variance is requested to wave the centralizer requirement for the Intermediate casing and production casing.

• A variance is requested to set intermediate casing in the curve if hole conditions dictate that a higher shoe strength is required.

Casing Program (Alternative Design)

Hole Size	Casing Interval		Csg. Size	Wt (PPF)	Grade	Conn	Min SF Collapse	Min SF Burst	Min SF Tension
	From	To							
17 1/2	0	875 TVD	13 3/8	48.0	H40	STC	1.125	1.25	1.6
9 7/8	0	11480 TVD	8 5/8	32.0	P110	TLW	1.125	1.25	1.6
7 7/8	0	TD	5 1/2	17.0	P110	BTC	1.125	1.25	1.6
				BLM Minimum Safety Factor			1.125	1	1.6 Dry 1.8 Wet

• All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 IILB.1.h Must have table for continengcy casing.
• Rustler top will be validated via drilling parameters (i.e. reduction in ROP) and surface casing setting depth revised accordingly if needed.
• A variance is requested for collapse rating on intermediate casing. Operator will keep pipe full while running casing.
• Int casing shoe will be selected based on drilling data/gamma, setting depth with be revised accordingly if needed.
• A variance is requested to wave the centralizer requirement for the Intermediate casing and production casing.
•Variance requested to drill 10.625" hole instead of 9.875" for intermediate 1, the 8.625" connection will change from TLW to BTC.
• A variance is requested to set intermediate casing in the curve if hole conditions dictate that a higher shoe strength is required.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specficition sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

3. Cementing Program (Primary Design)

Casing	# Sks	TOC	Wt. (lb/gal)	Yld (ft3/sack)	Slurry Description
Surface	672	Surf	13.2	1.44	Lead: Class C Cement + additives
Int 1	715	Surf	9	3.27	Lead: Class C Cement + additives
	783	4000' above shoe	13.2	1.44	Tail: Class H / C + additives
Int 1 Two Stage w/ DV @ TVD of Delaware	901	Surf	9	3.27	1st stage Lead: Class C Cement + additives
	93	500' above shoe	13.2	1.44	1st stage Tail: Class H / C + additives
	394	Surf	9	3.27	2nd stage Lead: Class C Cement + additives
	93	500' above DV	13.2	1.44	2nd stage Tail: Class H / C + additives
Int 1 Intermediate Squeeze	As Needed	Surf	9	1.44	Squeeze Lead: Class C Cement + additives
	715	Surf	9	3.27	Lead: Class C Cement + additives
	783	4000' above shoe	13.2	1.44	Tail: Class H / C + additives
Production	60	10234	9.0	3.3	Lead: Class H /C + additives
	677	12234	13.2	1.4	Tail: Class H / C + additives

If a DV tool is ran the depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. Slurry weights will be adjusted based on estimated fracture gradient of the formation. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. If cement is not returned to surface during the primary cement job on the surface casing string, a planned top job will be conducted immediately after completion of the primary job.

Casing String	% Excess
Surface	50%
Intermediate 1	30%
Intermediate 1 (Two Stage)	25%
Prod	10%

3. Cementing Program (Alternative Design)

Casing	# Sks	TOC	Wt. ppg	Yld (ft3/sack)	Slurry Description
Surface	672	Surf	13.2	1.44	Lead: Class C Cement + additives
Int 1	459	Surf	9	3.27	Lead: Class C Cement + additives
	465	4000' above shoe	13.2	1.44	Tail: Class H / C + additives
Int 1 Two Stage w DV @ ~4500	529	Surf	9	3.27	1st stage Lead: Class C Cement + additives
	55	500' above shoe	13.2	1.44	1st stage Tail: Class H / C + additives
	270	Surf	9	3.27	2nd stage Lead: Class C Cement + additives
	55	500' above DV	13.2	1.44	2nd stage Tail: Class H / C + additives
Int 1 Intermediate Squeeze	As Needed	Surf	13.2	1.44	Squeeze Lead: Class C Cement + additives
	459	Surf	9	3.27	Lead: Class C Cement + additives
	465	4000' above shoe	13.2	1.44	Tail: Class H / C + additives
Int 1 (10.625" Hole Size)	679	Surf	9	3.27	Lead: Class C Cement + additives
	768	4000' above shoe	13.2	1.44	Tail: Class H / C + additives
Production	117	10234	9.0	3.3	Lead: Class H /C + additives
	1405	12234	13.2	1.4	Tail: Class H / C + additives

If a DV tool is ran the depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. Slurry weights will be adjusted based on estimated fracture gradient of the formation. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. If cement is not returned to surface during the primary cement job on the surface casing string, a planned top job will be conducted immediately after completion of the primary job.

Casing String	% Excess
Surface	50%
Intermediate 1	30%
Intermediate 1 (Two Stage)	25%
Prod	10%

4. Pressure Control Equipment (Three String Design)

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
Int 1	13-58"	5M	Annular	X	50% of rated working pressure
			Blind Ram	X	5M
			Pipe Ram		
			Double Ram	X	
			Other*		
Production	13-5/8"	10M	Annular (5M)	X	100% of rated working pressure
			Blind Ram	X	10M
			Pipe Ram		
			Double Ram	X	
			Other*		
			Annular (5M)		
			Blind Ram		
			Pipe Ram		
			Double Ram		
			Other*		

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.
Y	A variance is requested to run a 5 M annular on a 10M system

5. Mud Program (Three String Design)

Section	Type	Weight (ppg)
Surface	FW Gel	8.5-9
Intermediate	DBE / Cut Brine	10-10.5
Production	OBM	10-10.5

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 Rpeort 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	Int. shoe to KOP
	Density	Int. shoe to KOP
X	CBL	Production casing
X	Mud log	Intermediate shoe to TD
	PEX	

7. Drilling Conditions

Condition	Specfiy what type and where?
BH pressure at deepest TVD	6987
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 Onshore Oil and Gas Order #6. 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 (OnShore Order 2, 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 pa.
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. A 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

WCDSC Permian NM

Eddy County (NAD 83 NM Eastern)
Sec 11-T26S-R31E
Shetland 11-2 Fed State Com 731H

Wellbore #1

Plan: Permit Plan 1

Standard Planning Report - Geographic

30 October, 2019

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Shetland 11-2 Fed State Com 731H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3233.30ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3233.30ft
Site:	Sec 11-T26S-R31E	**North Reference:**	Grid
Well:	Shetland 11-2 Fed State Com 731H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Project Eddy County (NAD 83 NM Eastern)

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site Sec 11-T26S-R31E

Site Position:		**Northing:**	382,457.83 usft	**Latitude:**	32.050148
From:	Map	**Easting:**	719,768.56 usft	**Longitude:**	-103.757418
Position Uncertainty:	0.00 ft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.31 °

Well Shetland 11-2 Fed State Com 731H

Well Position	**+N/-S**	0.00 ft	**Northing:**	382,477.24 usft	**Latitude:**	32.050194
	+E/-W	0.00 ft	**Easting:**	720,303.41 usft	**Longitude:**	-103.755691
Position Uncertainty		0.50 ft	**Wellhead Elevation:**		**Ground Level:**	3,208.30 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/29/2019	6.77	59.84	47,574.41490361

Design Permit Plan 1

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	2.19

Plan Survey Tool Program **Date** 10/30/2019

	Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	22,849.51	Permit Plan 1 (Wellbore #1)	MWD+HDGM	
				OWSG MWD + HDGM	

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,270.82	2.71	85.60	2,270.72	0.49	6.38	1.00	1.00	0.00	85.60	
11,703.15	2.71	85.60	11,692.52	34.67	450.75	0.00	0.00	0.00	0.00	
11,883.70	0.00	0.00	11,873.00	35.00	455.00	1.50	-1.50	0.00	180.00	
12,233.74	0.00	0.00	12,223.04	35.00	455.00	0.00	0.00	0.00	0.00	
13,133.75	90.00	359.66	12,796.00	607.95	451.61	10.00	10.00	0.00	359.66	PBHL - Shetland 11-2
22,849.73	90.00	359.66	12,796.00	10,323.76	394.04	0.00	0.00	0.00	0.00	PBHL - Shetland 11-2

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Shetland 11-2 Fed State Com 731H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3233.30ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3233.30ft
Site:	Sec 11-T26S-R31E	**North Reference:**	Grid
Well:	Shetland 11-2 Fed State Com 731H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	382,477.24	720,303.41	32.050194	-103.755691
100.00	0.00	0.00	100.00	0.00	0.00	382,477.24	720,303.41	32.050194	-103.755691
200.00	0.00	0.00	200.00	0.00	0.00	382,477.24	720,303.41	32.050194	-103.755691
300.00	0.00	0.00	300.00	0.00	0.00	382,477.24	720,303.41	32.050194	-103.755691
400.00	0.00	0.00	400.00	0.00	0.00	382,477.24	720,303.41	32.050194	-103.755691
500.00	0.00	0.00	500.00	0.00	0.00	382,477.24	720,303.41	32.050194	-103.755691
600.00	0.00	0.00	600.00	0.00	0.00	382,477.24	720,303.41	32.050194	-103.755691
700.00	0.00	0.00	700.00	0.00	0.00	382,477.24	720,303.41	32.050194	-103.755691
800.00	0.00	0.00	800.00	0.00	0.00	382,477.24	720,303.41	32.050194	-103.755691
900.00	0.00	0.00	900.00	0.00	0.00	382,477.24	720,303.41	32.050194	-103.755691
1,000.00	0.00	0.00	1,000.00	0.00	0.00	382,477.24	720,303.41	32.050194	-103.755691
1,100.00	0.00	0.00	1,100.00	0.00	0.00	382,477.24	720,303.41	32.050194	-103.755691
1,200.00	0.00	0.00	1,200.00	0.00	0.00	382,477.24	720,303.41	32.050194	-103.755691
1,300.00	0.00	0.00	1,300.00	0.00	0.00	382,477.24	720,303.41	32.050194	-103.755691
1,400.00	0.00	0.00	1,400.00	0.00	0.00	382,477.24	720,303.41	32.050194	-103.755691
1,500.00	0.00	0.00	1,500.00	0.00	0.00	382,477.24	720,303.41	32.050194	-103.755691
1,600.00	0.00	0.00	1,600.00	0.00	0.00	382,477.24	720,303.41	32.050194	-103.755691
1,700.00	0.00	0.00	1,700.00	0.00	0.00	382,477.24	720,303.41	32.050194	-103.755691
1,800.00	0.00	0.00	1,800.00	0.00	0.00	382,477.24	720,303.41	32.050194	-103.755691
1,900.00	0.00	0.00	1,900.00	0.00	0.00	382,477.24	720,303.41	32.050194	-103.755691
2,000.00	0.00	0.00	2,000.00	0.00	0.00	382,477.24	720,303.41	32.050194	-103.755691
2,100.00	1.00	85.60	2,099.99	0.07	0.87	382,477.31	720,304.28	32.050194	-103.755689
2,200.00	2.00	85.60	2,199.96	0.27	3.48	382,477.51	720,306.89	32.050195	-103.755680
2,270.82	2.71	85.60	2,270.72	0.49	6.38	382,477.73	720,309.79	32.050195	-103.755671
2,300.00	2.71	85.60	2,299.87	0.60	7.76	382,477.84	720,311.16	32.050195	-103.755666
2,400.00	2.71	85.60	2,399.75	0.96	12.47	382,478.20	720,315.87	32.050196	-103.755651
2,500.00	2.71	85.60	2,499.64	1.32	17.18	382,478.56	720,320.58	32.050197	-103.755636
2,600.00	2.71	85.60	2,599.53	1.68	21.89	382,478.92	720,325.29	32.050198	-103.755621
2,700.00	2.71	85.60	2,699.42	2.05	26.60	382,479.28	720,330.01	32.050199	-103.755605
2,800.00	2.71	85.60	2,799.31	2.41	31.31	382,479.65	720,334.72	32.050200	-103.755590
2,900.00	2.71	85.60	2,899.20	2.77	36.02	382,480.01	720,339.43	32.050201	-103.755575
3,000.00	2.71	85.60	2,999.08	3.13	40.73	382,480.37	720,344.14	32.050202	-103.755560
3,100.00	2.71	85.60	3,098.97	3.50	45.44	382,480.73	720,348.85	32.050203	-103.755545
3,200.00	2.71	85.60	3,198.86	3.86	50.15	382,481.10	720,353.56	32.050204	-103.755529
3,300.00	2.71	85.60	3,298.75	4.22	54.87	382,481.46	720,358.27	32.050205	-103.755514
3,400.00	2.71	85.60	3,398.64	4.58	59.58	382,481.82	720,362.98	32.050206	-103.755499
3,500.00	2.71	85.60	3,498.53	4.95	64.29	382,482.18	720,367.69	32.050207	-103.755484
3,600.00	2.71	85.60	3,598.41	5.31	69.00	382,482.55	720,372.41	32.050207	-103.755469
3,700.00	2.71	85.60	3,698.30	5.67	73.71	382,482.91	720,377.12	32.050208	-103.755453
3,800.00	2.71	85.60	3,798.19	6.03	78.42	382,483.27	720,381.83	32.050209	-103.755438
3,900.00	2.71	85.60	3,898.08	6.39	83.13	382,483.63	720,386.54	32.050210	-103.755423
4,000.00	2.71	85.60	3,997.97	6.76	87.84	382,484.00	720,391.25	32.050211	-103.755408
4,100.00	2.71	85.60	4,097.86	7.12	92.55	382,484.36	720,395.96	32.050212	-103.755393
4,200.00	2.71	85.60	4,197.74	7.48	97.27	382,484.72	720,400.67	32.050213	-103.755377
4,300.00	2.71	85.60	4,297.63	7.84	101.98	382,485.08	720,405.38	32.050214	-103.755362
4,400.00	2.71	85.60	4,397.52	8.21	106.69	382,485.45	720,410.09	32.050215	-103.755347
4,500.00	2.71	85.60	4,497.41	8.57	111.40	382,485.81	720,414.80	32.050216	-103.755332
4,600.00	2.71	85.60	4,597.30	8.93	116.11	382,486.17	720,419.52	32.050217	-103.755316
4,700.00	2.71	85.60	4,697.19	9.29	120.82	382,486.53	720,424.23	32.050218	-103.755301
4,800.00	2.71	85.60	4,797.07	9.66	125.53	382,486.89	720,428.94	32.050219	-103.755286
4,900.00	2.71	85.60	4,896.96	10.02	130.24	382,487.26	720,433.65	32.050219	-103.755271
5,000.00	2.71	85.60	4,996.85	10.38	134.95	382,487.62	720,438.36	32.050220	-103.755256
5,100.00	2.71	85.60	5,096.74	10.74	139.67	382,487.98	720,443.07	32.050221	-103.755240
5,200.00	2.71	85.60	5,196.63	11.11	144.38	382,488.34	720,447.78	32.050222	-103.755225
5,300.00	2.71	85.60	5,296.52	11.47	149.09	382,488.71	720,452.49	32.050223	-103.755210

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Shetland 11-2 Fed State Com 731H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3233.30ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3233.30ft
Site:	Sec 11-T26S-R31E	**North Reference:**	Grid
Well:	Shetland 11-2 Fed State Com 731H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,400.00	2.71	85.60	5,396.40	11.83	153.80	382,489.07	720,457.20	32.050224	-103.755195
5,500.00	2.71	85.60	5,496.29	12.19	158.51	382,489.43	720,461.92	32.050225	-103.755180
5,600.00	2.71	85.60	5,596.18	12.56	163.22	382,489.79	720,466.63	32.050226	-103.755164
5,700.00	2.71	85.60	5,696.07	12.92	167.93	382,490.16	720,471.34	32.050227	-103.755149
5,800.00	2.71	85.60	5,795.96	13.28	172.64	382,490.52	720,476.05	32.050228	-103.755134
5,900.00	2.71	85.60	5,895.85	13.64	177.35	382,490.88	720,480.76	32.050229	-103.755119
6,000.00	2.71	85.60	5,995.73	14.01	182.07	382,491.24	720,485.47	32.050230	-103.755104
6,100.00	2.71	85.60	6,095.62	14.37	186.78	382,491.61	720,490.18	32.050231	-103.755088
6,200.00	2.71	85.60	6,195.51	14.73	191.49	382,491.97	720,494.89	32.050232	-103.755073
6,300.00	2.71	85.60	6,295.40	15.09	196.20	382,492.33	720,499.60	32.050232	-103.755058
6,400.00	2.71	85.60	6,395.29	15.45	200.91	382,492.69	720,504.32	32.050233	-103.755043
6,500.00	2.71	85.60	6,495.18	15.82	205.62	382,493.06	720,509.03	32.050234	-103.755027
6,600.00	2.71	85.60	6,595.06	16.18	210.33	382,493.42	720,513.74	32.050235	-103.755012
6,700.00	2.71	85.60	6,694.95	16.54	215.04	382,493.78	720,518.45	32.050236	-103.754997
6,800.00	2.71	85.60	6,794.84	16.90	219.75	382,494.14	720,523.16	32.050237	-103.754982
6,900.00	2.71	85.60	6,894.73	17.27	224.47	382,494.51	720,527.87	32.050238	-103.754967
7,000.00	2.71	85.60	6,994.62	17.63	229.18	382,494.87	720,532.58	32.050239	-103.754951
7,100.00	2.71	85.60	7,094.51	17.99	233.89	382,495.23	720,537.29	32.050240	-103.754936
7,200.00	2.71	85.60	7,194.39	18.35	238.60	382,495.59	720,542.00	32.050241	-103.754921
7,300.00	2.71	85.60	7,294.28	18.72	243.31	382,495.95	720,546.72	32.050242	-103.754906
7,400.00	2.71	85.60	7,394.17	19.08	248.02	382,496.32	720,551.43	32.050243	-103.754891
7,500.00	2.71	85.60	7,494.06	19.44	252.73	382,496.68	720,556.14	32.050244	-103.754875
7,600.00	2.71	85.60	7,593.95	19.80	257.44	382,497.04	720,560.85	32.050245	-103.754860
7,700.00	2.71	85.60	7,693.84	20.17	262.15	382,497.40	720,565.56	32.050245	-103.754845
7,800.00	2.71	85.60	7,793.72	20.53	266.87	382,497.77	720,570.27	32.050246	-103.754830
7,900.00	2.71	85.60	7,893.61	20.89	271.58	382,498.13	720,574.98	32.050247	-103.754815
8,000.00	2.71	85.60	7,993.50	21.25	276.29	382,498.49	720,579.69	32.050248	-103.754799
8,100.00	2.71	85.60	8,093.39	21.62	281.00	382,498.85	720,584.40	32.050249	-103.754784
8,200.00	2.71	85.60	8,193.28	21.98	285.71	382,499.22	720,589.12	32.050250	-103.754769
8,300.00	2.71	85.60	8,293.17	22.34	290.42	382,499.58	720,593.83	32.050251	-103.754754
8,400.00	2.71	85.60	8,393.05	22.70	295.13	382,499.94	720,598.54	32.050252	-103.754738
8,500.00	2.71	85.60	8,492.94	23.06	299.84	382,500.30	720,603.25	32.050253	-103.754723
8,600.00	2.71	85.60	8,592.83	23.43	304.55	382,500.67	720,607.96	32.050254	-103.754708
8,700.00	2.71	85.60	8,692.72	23.79	309.26	382,501.03	720,612.67	32.050255	-103.754693
8,800.00	2.71	85.60	8,792.61	24.15	313.98	382,501.39	720,617.38	32.050256	-103.754678
8,900.00	2.71	85.60	8,892.50	24.51	318.69	382,501.75	720,622.09	32.050257	-103.754662
9,000.00	2.71	85.60	8,992.38	24.88	323.40	382,502.12	720,626.80	32.050257	-103.754647
9,100.00	2.71	85.60	9,092.27	25.24	328.11	382,502.48	720,631.51	32.050258	-103.754632
9,200.00	2.71	85.60	9,192.16	25.60	332.82	382,502.84	720,636.23	32.050259	-103.754617
9,300.00	2.71	85.60	9,292.05	25.96	337.53	382,503.20	720,640.94	32.050260	-103.754602
9,400.00	2.71	85.60	9,391.94	26.33	342.24	382,503.56	720,645.65	32.050261	-103.754586
9,500.00	2.71	85.60	9,491.83	26.69	346.95	382,503.93	720,650.36	32.050262	-103.754571
9,600.00	2.71	85.60	9,591.71	27.05	351.66	382,504.29	720,655.07	32.050263	-103.754556
9,700.00	2.71	85.60	9,691.60	27.41	356.38	382,504.65	720,659.78	32.050264	-103.754541
9,800.00	2.71	85.60	9,791.49	27.78	361.09	382,505.01	720,664.49	32.050265	-103.754525
9,900.00	2.71	85.60	9,891.38	28.14	365.80	382,505.38	720,669.20	32.050266	-103.754510
10,000.00	2.71	85.60	9,991.27	28.50	370.51	382,505.74	720,673.91	32.050267	-103.754495
10,100.00	2.71	85.60	10,091.15	28.86	375.22	382,506.10	720,678.63	32.050268	-103.754480
10,200.00	2.71	85.60	10,191.04	29.23	379.93	382,506.46	720,683.34	32.050269	-103.754465
10,300.00	2.71	85.60	10,290.93	29.59	384.64	382,506.83	720,688.05	32.050270	-103.754449
10,400.00	2.71	85.60	10,390.82	29.95	389.35	382,507.19	720,692.76	32.050270	-103.754434
10,500.00	2.71	85.60	10,490.71	30.31	394.06	382,507.55	720,697.47	32.050271	-103.754419
10,600.00	2.71	85.60	10,590.60	30.68	398.78	382,507.91	720,702.18	32.050272	-103.754404
10,700.00	2.71	85.60	10,690.48	31.04	403.49	382,508.28	720,706.89	32.050273	-103.754389
10,800.00	2.71	85.60	10,790.37	31.40	408.20	382,508.64	720,711.60	32.050274	-103.754373

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Shetland 11-2 Fed State Com 731H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3233.30ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3233.30ft
Site:	Sec 11-T26S-R31E	**North Reference:**	Grid
Well:	Shetland 11-2 Fed State Com 731H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,900.00	2.71	85.60	10,890.26	31.76	412.91	382,509.00	720,716.31	32.050275	-103.754358
11,000.00	2.71	85.60	10,990.15	32.12	417.62	382,509.36	720,721.03	32.050276	-103.754343
11,100.00	2.71	85.60	11,090.04	32.49	422.33	382,509.73	720,725.74	32.050277	-103.754328
11,200.00	2.71	85.60	11,189.93	32.85	427.04	382,510.09	720,730.45	32.050278	-103.754313
11,300.00	2.71	85.60	11,289.81	33.21	431.75	382,510.45	720,735.16	32.050279	-103.754297
11,400.00	2.71	85.60	11,389.70	33.57	436.46	382,510.81	720,739.87	32.050280	-103.754282
11,500.00	2.71	85.60	11,489.59	33.94	441.18	382,511.18	720,744.58	32.050281	-103.754267
11,600.00	2.71	85.60	11,589.48	34.30	445.89	382,511.54	720,749.29	32.050282	-103.754252
11,700.00	2.71	85.60	11,689.37	34.66	450.60	382,511.90	720,754.00	32.050282	-103.754236
11,703.15	2.71	85.60	11,692.52	34.67	450.75	382,511.91	720,754.15	32.050283	-103.754236
11,800.00	1.26	85.60	11,789.30	34.93	454.09	382,512.17	720,757.49	32.050283	-103.754225
11,883.70	0.00	0.00	11,873.00	35.00	455.00	382,512.24	720,758.41	32.050283	-103.754222
11,900.00	0.00	0.00	11,889.30	35.00	455.00	382,512.24	720,758.41	32.050283	-103.754222
12,000.00	0.00	0.00	11,989.30	35.00	455.00	382,512.24	720,758.41	32.050283	-103.754222
12,100.00	0.00	0.00	12,089.30	35.00	455.00	382,512.24	720,758.41	32.050283	-103.754222
12,200.00	0.00	0.00	12,189.30	35.00	455.00	382,512.24	720,758.41	32.050283	-103.754222
12,233.74	0.00	0.00	12,223.04	35.00	455.00	382,512.24	720,758.41	32.050283	-103.754222
KOP @ 12234' MD, 50' FSL, 990' FWL									
12,300.00	6.63	359.66	12,289.15	38.83	454.98	382,516.07	720,758.38	32.050294	-103.754222
12,400.00	16.63	359.66	12,386.97	58.95	454.86	382,536.19	720,758.26	32.050349	-103.754222
12,500.00	26.63	359.66	12,479.82	95.76	454.64	382,573.00	720,758.05	32.050450	-103.754222
12,600.00	36.63	359.66	12,564.86	148.13	454.33	382,625.37	720,757.73	32.050594	-103.754222
12,700.00	46.63	359.66	12,639.51	214.47	453.94	382,691.71	720,757.34	32.050777	-103.754223
12,800.00	56.63	359.66	12,701.51	292.77	453.47	382,770.00	720,756.88	32.050992	-103.754223
12,826.00	59.23	359.66	12,715.32	314.79	453.34	382,792.03	720,756.75	32.051052	-103.754223
FTP @ 12826' MD, 330' FSL, 990' FWL									
12,900.00	66.63	359.66	12,748.98	380.64	452.95	382,857.88	720,756.36	32.051233	-103.754223
13,000.00	76.63	359.66	12,780.46	475.42	452.39	382,952.66	720,755.80	32.051494	-103.754223
13,100.00	86.63	359.66	12,795.01	574.22	451.81	383,051.46	720,755.21	32.051766	-103.754223
13,133.75	90.00	359.66	12,796.00	607.95	451.61	383,085.19	720,755.01	32.051858	-103.754223
13,200.00	90.00	359.66	12,796.00	674.20	451.21	383,151.44	720,754.62	32.052040	-103.754223
13,300.00	90.00	359.66	12,796.00	774.20	450.62	383,251.44	720,754.03	32.052315	-103.754224
13,400.00	90.00	359.66	12,796.00	874.20	450.03	383,351.44	720,753.43	32.052590	-103.754224
13,500.00	90.00	359.66	12,796.00	974.20	449.44	383,451.43	720,752.84	32.052865	-103.754224
13,600.00	90.00	359.66	12,796.00	1,074.20	448.84	383,551.43	720,752.25	32.053140	-103.754224
13,700.00	90.00	359.66	12,796.00	1,174.19	448.25	383,651.43	720,751.66	32.053415	-103.754224
13,800.00	90.00	359.66	12,796.00	1,274.19	447.66	383,751.43	720,751.06	32.053690	-103.754224
13,900.00	90.00	359.66	12,796.00	1,374.19	447.07	383,851.43	720,750.47	32.053965	-103.754225
14,000.00	90.00	359.66	12,796.00	1,474.19	446.47	383,951.42	720,749.88	32.054240	-103.754225
14,100.00	90.00	359.66	12,796.00	1,574.19	445.88	384,051.42	720,749.29	32.054514	-103.754225
14,200.00	90.00	359.66	12,796.00	1,674.19	445.29	384,151.42	720,748.69	32.054789	-103.754225
14,300.00	90.00	359.66	12,796.00	1,774.18	444.70	384,251.42	720,748.10	32.055064	-103.754225
14,400.00	90.00	359.66	12,796.00	1,874.18	444.10	384,351.42	720,747.51	32.055339	-103.754226
14,500.00	90.00	359.66	12,796.00	1,974.18	443.51	384,451.41	720,746.92	32.055614	-103.754226
14,600.00	90.00	359.66	12,796.00	2,074.18	442.92	384,551.41	720,746.32	32.055889	-103.754226
14,700.00	90.00	359.66	12,796.00	2,174.18	442.33	384,651.41	720,745.73	32.056164	-103.754226
14,800.00	90.00	359.66	12,796.00	2,274.17	441.73	384,751.41	720,745.14	32.056439	-103.754226
14,900.00	90.00	359.66	12,796.00	2,374.17	441.14	384,851.41	720,744.55	32.056714	-103.754226
15,000.00	90.00	359.66	12,796.00	2,474.17	440.55	384,951.40	720,743.95	32.056988	-103.754227
15,100.00	90.00	359.66	12,796.00	2,574.17	439.96	385,051.40	720,743.36	32.057263	-103.754227
15,200.00	90.00	359.66	12,796.00	2,674.17	439.36	385,151.40	720,742.77	32.057538	-103.754227
15,300.00	90.00	359.66	12,796.00	2,774.17	438.77	385,251.40	720,742.18	32.057813	-103.754227
15,400.00	90.00	359.66	12,796.00	2,874.16	438.18	385,351.40	720,741.58	32.058088	-103.754227
15,500.00	90.00	359.66	12,796.00	2,974.16	437.59	385,451.40	720,740.99	32.058363	-103.754228

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Shetland 11-2 Fed State Com 731H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3233.30ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3233.30ft
Site:	Sec 11-T26S-R31E	**North Reference:**	Grid
Well:	Shetland 11-2 Fed State Com 731H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
15,600.00	90.00	359.66	12,796.00	3,074.16	436.99	385,551.39	720,740.40	32.058638	-103.754228
15,700.00	90.00	359.66	12,796.00	3,174.16	436.40	385,651.39	720,739.81	32.058913	-103.754228
15,800.00	90.00	359.66	12,796.00	3,274.16	435.81	385,751.39	720,739.21	32.059188	-103.754228
15,900.00	90.00	359.66	12,796.00	3,374.16	435.22	385,851.39	720,738.62	32.059462	-103.754228
16,000.00	90.00	359.66	12,796.00	3,474.15	434.62	385,951.39	720,738.03	32.059737	-103.754228
16,100.00	90.00	359.66	12,796.00	3,574.15	434.03	386,051.38	720,737.44	32.060012	-103.754229
16,200.00	90.00	359.66	12,796.00	3,674.15	433.44	386,151.38	720,736.84	32.060287	-103.754229
16,300.00	90.00	359.66	12,796.00	3,774.15	432.85	386,251.38	720,736.25	32.060562	-103.754229
16,400.00	90.00	359.66	12,796.00	3,874.15	432.25	386,351.38	720,735.66	32.060837	-103.754229
16,500.00	90.00	359.66	12,796.00	3,974.14	431.66	386,451.38	720,735.07	32.061112	-103.754229
16,600.00	90.00	359.66	12,796.00	4,074.14	431.07	386,551.37	720,734.47	32.061387	-103.754230
16,700.00	90.00	359.66	12,796.00	4,174.14	430.48	386,651.37	720,733.88	32.061662	-103.754230
16,800.00	90.00	359.66	12,796.00	4,274.14	429.88	386,751.37	720,733.29	32.061936	-103.754230
16,900.00	90.00	359.66	12,796.00	4,374.14	429.29	386,851.37	720,732.70	32.062211	-103.754230
17,000.00	90.00	359.66	12,796.00	4,474.14	428.70	386,951.37	720,732.10	32.062486	-103.754230
17,100.00	90.00	359.66	12,796.00	4,574.13	428.11	387,051.36	720,731.51	32.062761	-103.754230
17,200.00	90.00	359.66	12,796.00	4,674.13	427.51	387,151.36	720,730.92	32.063036	-103.754231
17,300.00	90.00	359.66	12,796.00	4,774.13	426.92	387,251.36	720,730.33	32.063311	-103.754231
17,400.00	90.00	359.66	12,796.00	4,874.13	426.33	387,351.36	720,729.73	32.063586	-103.754231
17,500.00	90.00	359.66	12,796.00	4,974.13	425.74	387,451.36	720,729.14	32.063861	-103.754231
17,600.00	90.00	359.66	12,796.00	5,074.13	425.14	387,551.35	720,728.55	32.064136	-103.754231
17,700.00	90.00	359.66	12,796.00	5,174.12	424.55	387,651.35	720,727.96	32.064410	-103.754232
17,800.00	90.00	359.66	12,796.00	5,274.12	423.96	387,751.35	720,727.36	32.064685	-103.754232
17,856.00	90.00	359.66	12,796.00	5,330.12	423.63	387,807.35	720,727.03	32.064839	-103.754232
Cross section @ 17856' MD, 0' FSL, 990' FWL									
17,900.00	90.00	359.66	12,796.00	5,374.12	423.37	387,851.35	720,726.77	32.064960	-103.754232
18,000.00	90.00	359.66	12,796.00	5,474.12	422.77	387,951.35	720,726.18	32.065235	-103.754232
18,100.00	90.00	359.66	12,796.00	5,574.12	422.18	388,051.34	720,725.59	32.065510	-103.754232
18,200.00	90.00	359.66	12,796.00	5,674.12	421.59	388,151.34	720,724.99	32.065785	-103.754232
18,300.00	90.00	359.66	12,796.00	5,774.11	421.00	388,251.34	720,724.40	32.066060	-103.754233
18,400.00	90.00	359.66	12,796.00	5,874.11	420.40	388,351.34	720,723.81	32.066335	-103.754233
18,500.00	90.00	359.66	12,796.00	5,974.11	419.81	388,451.34	720,723.22	32.066610	-103.754233
18,600.00	90.00	359.66	12,796.00	6,074.11	419.22	388,551.33	720,722.62	32.066884	-103.754233
18,700.00	90.00	359.66	12,796.00	6,174.11	418.63	388,651.33	720,722.03	32.067159	-103.754233
18,800.00	90.00	359.66	12,796.00	6,274.10	418.03	388,751.33	720,721.44	32.067434	-103.754234
18,900.00	90.00	359.66	12,796.00	6,374.10	417.44	388,851.33	720,720.85	32.067709	-103.754234
19,000.00	90.00	359.66	12,796.00	6,474.10	416.85	388,951.33	720,720.25	32.067984	-103.754234
19,100.00	90.00	359.66	12,796.00	6,574.10	416.26	389,051.32	720,719.66	32.068259	-103.754234
19,200.00	90.00	359.66	12,796.00	6,674.10	415.66	389,151.32	720,719.07	32.068534	-103.754234
19,300.00	90.00	359.66	12,796.00	6,774.10	415.07	389,251.32	720,718.48	32.068809	-103.754234
19,400.00	90.00	359.66	12,796.00	6,874.09	414.48	389,351.32	720,717.88	32.069083	-103.754235
19,500.00	90.00	359.66	12,796.00	6,974.09	413.89	389,451.32	720,717.29	32.069358	-103.754235
19,600.00	90.00	359.66	12,796.00	7,074.09	413.29	389,551.31	720,716.70	32.069633	-103.754235
19,700.00	90.00	359.66	12,796.00	7,174.09	412.70	389,651.31	720,716.11	32.069908	-103.754235
19,800.00	90.00	359.66	12,796.00	7,274.09	412.11	389,751.31	720,715.51	32.070183	-103.754235
19,900.00	90.00	359.66	12,796.00	7,374.09	411.52	389,851.31	720,714.92	32.070458	-103.754236
20,000.00	90.00	359.66	12,796.00	7,474.08	410.92	389,951.31	720,714.33	32.070733	-103.754236
20,100.00	90.00	359.66	12,796.00	7,574.08	410.33	390,051.31	720,713.74	32.071008	-103.754236
20,200.00	90.00	359.66	12,796.00	7,674.08	409.74	390,151.30	720,713.14	32.071283	-103.754236
20,300.00	90.00	359.66	12,796.00	7,774.08	409.15	390,251.30	720,712.55	32.071557	-103.754236
20,400.00	90.00	359.66	12,796.00	7,874.08	408.55	390,351.30	720,711.96	32.071832	-103.754236
20,500.00	90.00	359.66	12,796.00	7,974.07	407.96	390,451.30	720,711.37	32.072107	-103.754237
20,600.00	90.00	359.66	12,796.00	8,074.07	407.37	390,551.30	720,710.78	32.072382	-103.754237
20,700.00	90.00	359.66	12,796.00	8,174.07	406.78	390,651.29	720,710.18	32.072657	-103.754237

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Shetland 11-2 Fed State Com 731H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3233.30ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3233.30ft
Site:	Sec 11-T26S-R31E	**North Reference:**	Grid
Well:	Shetland 11-2 Fed State Com 731H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
20,800.00	90.00	359.66	12,796.00	8,274.07	406.18	390,751.29	720,709.59	32.072932	-103.754237
20,900.00	90.00	359.66	12,796.00	8,374.07	405.59	390,851.29	720,709.00	32.073207	-103.754237
21,000.00	90.00	359.66	12,796.00	8,474.07	405.00	390,951.29	720,708.41	32.073482	-103.754237
21,100.00	90.00	359.66	12,796.00	8,574.06	404.41	391,051.29	720,707.81	32.073757	-103.754238
21,200.00	90.00	359.66	12,796.00	8,674.06	403.81	391,151.28	720,707.22	32.074031	-103.754238
21,300.00	90.00	359.66	12,796.00	8,774.06	403.22	391,251.28	720,706.63	32.074306	-103.754238
21,400.00	90.00	359.66	12,796.00	8,874.06	402.63	391,351.28	720,706.04	32.074581	-103.754238
21,500.00	90.00	359.66	12,796.00	8,974.06	402.04	391,451.28	720,705.44	32.074856	-103.754238
21,600.00	90.00	359.66	12,796.00	9,074.06	401.45	391,551.28	720,704.85	32.075131	-103.754239
21,700.00	90.00	359.66	12,796.00	9,174.05	400.85	391,651.27	720,704.26	32.075406	-103.754239
21,800.00	90.00	359.66	12,796.00	9,274.05	400.26	391,751.27	720,703.67	32.075681	-103.754239
21,900.00	90.00	359.66	12,796.00	9,374.05	399.67	391,851.27	720,703.07	32.075956	-103.754239
22,000.00	90.00	359.66	12,796.00	9,474.05	399.08	391,951.27	720,702.48	32.076231	-103.754239
22,100.00	90.00	359.66	12,796.00	9,574.05	398.48	392,051.27	720,701.89	32.076505	-103.754239
22,200.00	90.00	359.66	12,796.00	9,674.04	397.89	392,151.26	720,701.30	32.076780	-103.754240
22,300.00	90.00	359.66	12,796.00	9,774.04	397.30	392,251.26	720,700.70	32.077055	-103.754240
22,400.00	90.00	359.66	12,796.00	9,874.04	396.71	392,351.26	720,700.11	32.077330	-103.754240
22,500.00	90.00	359.66	12,796.00	9,974.04	396.11	392,451.26	720,699.52	32.077605	-103.754240
22,600.00	90.00	359.66	12,796.00	10,074.04	395.52	392,551.26	720,698.93	32.077880	-103.754240
22,700.00	90.00	359.66	12,796.00	10,174.04	394.93	392,651.25	720,698.33	32.078155	-103.754241
22,800.00	90.00	359.66	12,796.00	10,274.03	394.34	392,751.25	720,697.74	32.078430	-103.754241
22,849.72	90.00	359.66	12,796.00	10,323.75	394.04	392,800.97	720,697.45	32.078566	-103.754241
PBHL & LTP @ 22850' MD, 330' FNL, 990' FWL									
22,849.73	90.00	359.66	12,796.00	10,323.76	394.04	392,800.98	720,697.45	32.078566	-103.754241

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL - Shetland 11-2 Fe	0.00	0.00	0.00	10,323.76	394.04	392,800.98	720,697.45	32.078566	-103.754241
- plan misses target center by 10331.28ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Point									

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
12,233.74	12,223.04	35.00	455.00	KOP @ 12234' MD, 50' FSL, 990' FWL
12,826.00	12,715.32	314.79	453.34	FTP @ 12826' MD, 330' FSL, 990' FWL
17,856.00	12,796.00	5,330.12	423.63	Cross section @ 17856' MD, 0' FSL, 990' FWL
22,849.72	12,796.00	10,323.75	394.04	PBHL & LTP @ 22850' MD, 330' FNL, 990' FWL

Devon Energy

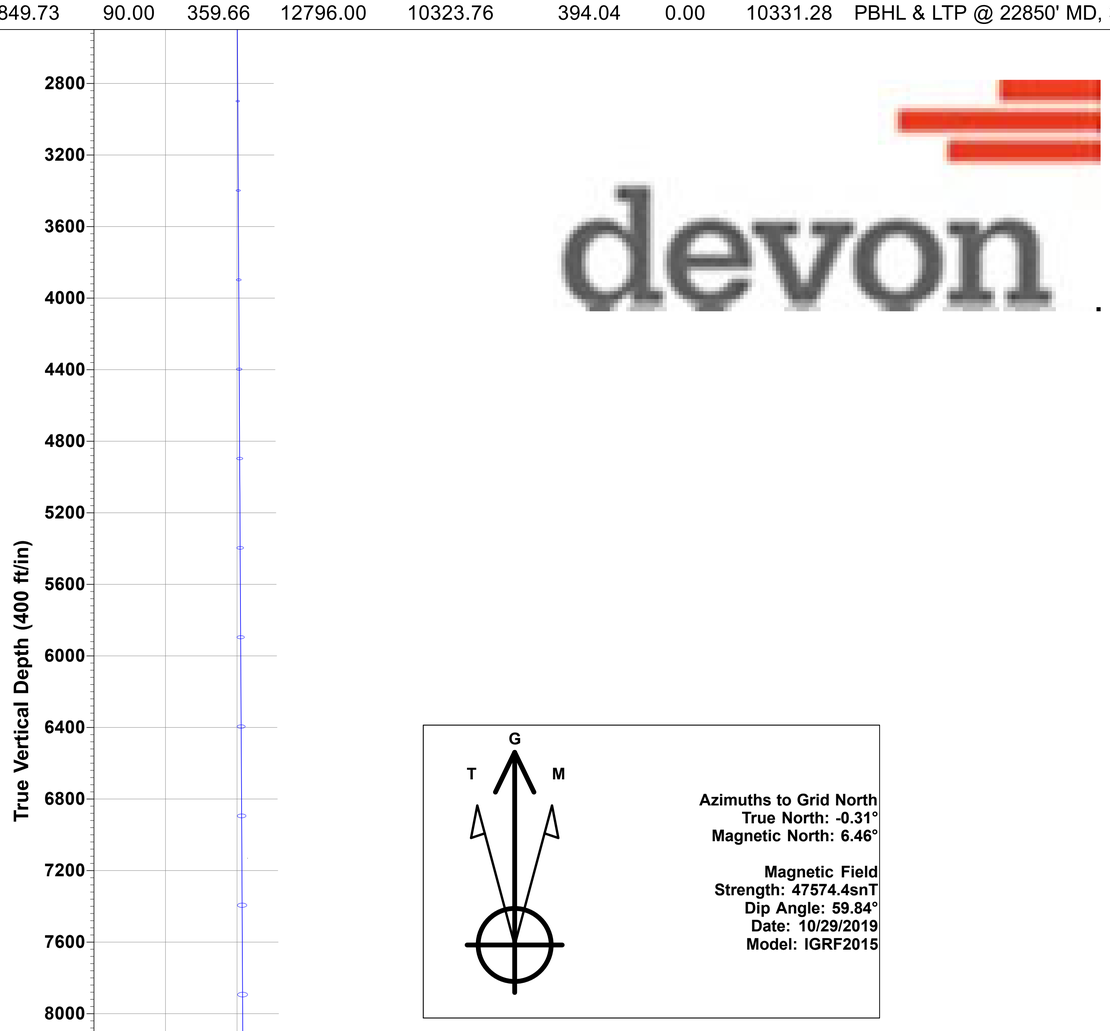
WELL DETAILS: Shetland 11-2 Fed State Com 731H

RKB @ 3233.30ft
3208.30

Northing	Easting	Latittude	Longitude
382477.24	720303.41	32.050194	-103.755691

SECTION DETAILS Permit Plan 1

	MD	Inc	Azi	TVD	+N/-S	+E/-W	DIeg	VSect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	
3	2270.82	2.71	85.60	2270.72	0.49	6.38	1.00	0.73	
4	11703.15	2.71	85.60	11692.52	34.67	450.75	0.00	51.84	
5	11883.70	0.00	0.00	11873.00	35.00	455.00	1.50	52.33	
6	12233.74	0.00	0.00	12223.04	35.00	455.00	0.00	52.33	KOP @ 12234' MD, 50' FSL, 990' FWL
7	13133.74	90.00	359.66	12796.00	607.95	451.61	10.00	624.73	
8	22849.73	90.00	359.66	12796.00	10323.76	394.04	0.00	10331.28	PBHL & LTP @ 22850' MD, 330' FNL, 990' FWL



PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

Shetland 11-2	**FED-State**		**611H**	**Well Pad 1**					
Surface	Section	**11**	T26S,	R31E	15	FSL,	505	FWL,	Eddy County
Bottom Hole	Section	**2**	T26S,	R31E	330	FNL,	890	FWL,	Eddy County
Shetland 11-2	**FED-State**		**711H**	**Well Pad 1**					
Surface	Section	**11**	T26S,	R31E	15	FSL,	475	FWL,	Eddy County
Bottom Hole	Section	**2**	T26S,	R31E	330	FNL,	330	FWL,	Eddy County
Shetland 11-2	**FED-State**		**731H**	**Well Pad 1**					
Surface	Section	**11**	T26S,	R31E	15	FSL,	535	FWL,	Eddy County
Bottom Hole	Section	**2**	T26S,	R31E	330	FNL,	990	FWL,	Eddy County
Shetland 11-2	**FED-State**		**712H**	**Well Pad 2**					
Surface	Section	**11**	T26S,	R31E	350	FSL,	2080	FWL,	Eddy County
Bottom Hole	Section	**2**	T26S,	R31E	330	FNL,	1660	FWL,	Eddy County
Shetland 11-2	**FED-State**		**712H**	**Well Pad 2**					
Surface	Section	**11**	T26S,	R31E	350	FSL,	2080	FWL,	Eddy County
Bottom Hole	Section	**2**	T26S,	R31E	330	FNL,	1660	FWL,	Eddy County
Shetland 11-2	**FED-State**		**732H**	**Well Pad 2**					
Surface	Section	**11**	T26S,	R31E	350	FSL,	2140	FWL,	Eddy County
Bottom Hole	Section	**2**	T26S,	R31E	330	FNL,	2310	FWL,	Eddy County
Shetland 11-2	**FED-State**		**332H**	**Well Pad 2**					
Surface	Section	**11**	T26S,	R31E	350	FSL,	2110	FWL,	Eddy County
Bottom Hole	Section	**11**	T26S,	R31E	20	FNL,	2210	FWL,	Eddy County
Shetland 11	**FED**		**714H**	**Well Pad 3**					
Surface	Section	**11**	T26S,	R31E	445	FNL,	930	FEL,	Eddy County
Bottom Hole	Section	**11**	T26S,	R31E	330	FSL,	990	FEL,	Eddy County
Shetland 11	**FED**		**734H**	**Well Pad 3**					
Surface	Section	**11**	T26S,	R31E	445	FNL,	900	FEL,	Eddy County
Bottom Hole	Section	**11**	T26S,	R31E	330	FSL,	330	FEL,	Eddy County
Shetland 2-11	**State-Fed**		**333H**	**Shetland 2 WP 2**					
Surface	Section	**2**	T26S,	R31E	170	FNL,	1070	FEL,	Eddy County
Bottom Hole	Section	**11**	T26S,	R31E	20	FSL,	630	FEL,	Eddy County
Shetland 2-11	**State-Fed**		**613H**	**Shetland 2 WP 2**					
Surface	Section	**2**	T26S,	R31E	170	FNL,	1130	FEL,	Eddy County

Bottom Hole	Section	**11**	T26S,	R31E	330	FSL,	1750	FEL,	Eddy County

Shetland 2-11	**State-Fed**		**713H**	**Shetland 2 WP 2**					
Surface	Section	**2**	T26S,	R31E	170	FNL,	1160	FEL,	Eddy County
Bottom Hole	Section	**11**	T26S,	R31E	330	FSL,	2310	FEL,	Eddy County

Shetland 2-11	**State-Fed**		**733H**	**Shetland 2 WP 2**					
Surface	Section	**2**	T26S,	R31E	170	FNL,	1100	FEL,	Eddy County
Bottom Hole	Section	**11**	T26S,	R31E	330	FSL,	1650	FEL,	Eddy County

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Build as you go no grading all of pad at once!!

- Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006. The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all power line structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. The holder without liability or expense shall make such modifications and/or additions to the United States.

Phantom Banks SMA
Surface disturbance will not be allowed within up to 200 meters of active heronries or by delaying activity for up to 120 days, or a combination of both.

Exhaust noise from engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

Hydrology:
The entire well pad(s) will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. The compacted berm shall be constructed at a minimum of 12 inches with impermeable mineral material (e.g. caliche). Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed. Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion. Stockpiling of topsoil is required. The top soil shall be stockpiled in an appropriate location to prevent loss of soil

due to water or wind erosion and not used for berming or erosion control. If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility. The berm would be maintained through the life of the wells and after interim reclamation has been completed.

Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank or 24 hour production, whichever is greater. Automatic shut off, check valves, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.

When crossing ephemeral drainages the pipeline(s) will be buried to a minimum depth of 48 inches from the top of pipe to ground level. Erosion control methods such as gabions and/or rock aprons should be placed on both up and downstream sides of the pipeline crossing. In addition, curled (weed free) wood/straw fiber wattles/logs and/or silt fences should be placed on the downstream side for sediment control during construction and maintained until soils and vegetation have stabilized. Water bars should be placed within the ROW to divert and dissipate surface runoff. A pipeline access road is not permitted to cross these ephemeral drainages. Traffic should be diverted to a preexisting route. Additional seeding may be required in floodplains and drainages to restore energy dissipating vegetation.

Any water erosion that may occur due to the construction of overhead electric line and during the life of the power line will be quickly corrected and proper measures will be taken to prevent future erosion. A power pole should not be placed in drainages, playas, wetlands, riparian areas, or floodplains and must span across the features at a distance away that would not promote further erosion.

Livestock Watering Requirement

Any damage to structures that provide water to livestock throughout the life of the well, caused by operations from the well site, must be immediately corrected by the operator. The operator must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

CONSTRUCTION MITIGATION

In order to mitigate the impacts from construction activities on cave and karst resources, the following Conditions of Approval will apply to this APD or project:

- In the event that any underground voids are encountered during construction activities, construction activities will be halted and the BLM will be notified immediately.
- No blasting – the pad and roads will be constructed and leveled by adding the necessary fill and caliche.
- All pads will be bermed to minimize the impact of any spilled contaminates

DRILLING MITIGATION

Federal regulations and standard Conditions of Approval applied to all APDs require that adequate measures are taken to prevent contamination to the environment. Due to the extreme sensitivity of the cave and karst resources in this project area, the following additional Conditions of Approval will be added to this APD.

To prevent cave and karst resource contamination the following will be required.

- Closed mud system using steel tanks - all fluids and cuttings will be hauled off-site and disposed of properly
- Rotary drilling with fresh water where cave or karst features are expected to prevent contamination of freshwater aquifers.
- Directional drilling is only allowed at depths greater than 100 feet below the cave occurrence zone to prevent additional impacts resulting from directional drilling.
- Lost circulation zones will be logged and reported in the drilling report so BLM can assess the situation and work with the operator on corrective actions.
- Additional drilling, casing, and cementing procedures to protect cave zones and fresh water aquifers. See drilling COAs.

PRODUCTION MITIGATION

In order to mitigate the impacts from production activities and due to the nature of karst terrane, the following Conditions of Approval will apply to this APD:

- Tank battery locations and facilities will be bermed and lined with a 20 mil thick permanent liner that has a 4 oz. felt backing, or equivalent, to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.
- Development and implementation of a leak detection system to provide an early alert to operators when a leak has occurred.
- Automatic shut off, check values, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

RESIDUAL AND CUMULATIVE MITIGATION

- The operator will perform annual pressure monitoring on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be taken to correct the problem to the BLM's approval.

PLUGGING AND ABANDONMENT MITIGATION

- Upon well abandonment in high cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing
The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

G. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

Surfacing
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching
Ditching shall be required on both sides of the road.

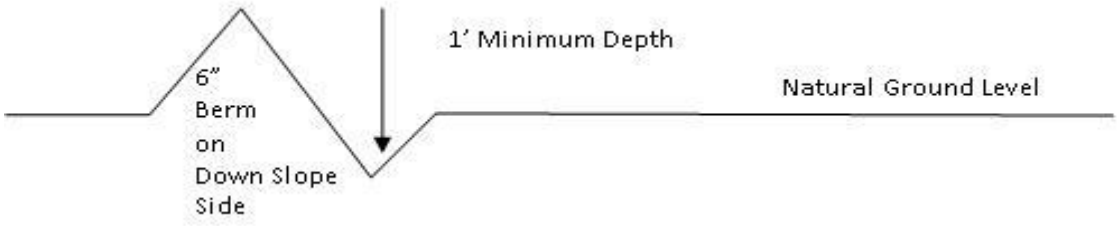
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

400 foot road with 4% road slope: $\frac{400'}{4\%} + 100' = 200'$ lead-off ditch interval

Cattle guards

An appropriately sized cattle guard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattle guards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattle guards that are in place and are utilized during lease operations.

Fence Requirement

Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Construction Steps

1. Salvage topsoil
2. Construct road
3. Redistribute topsoil
4. Revegetate slopes

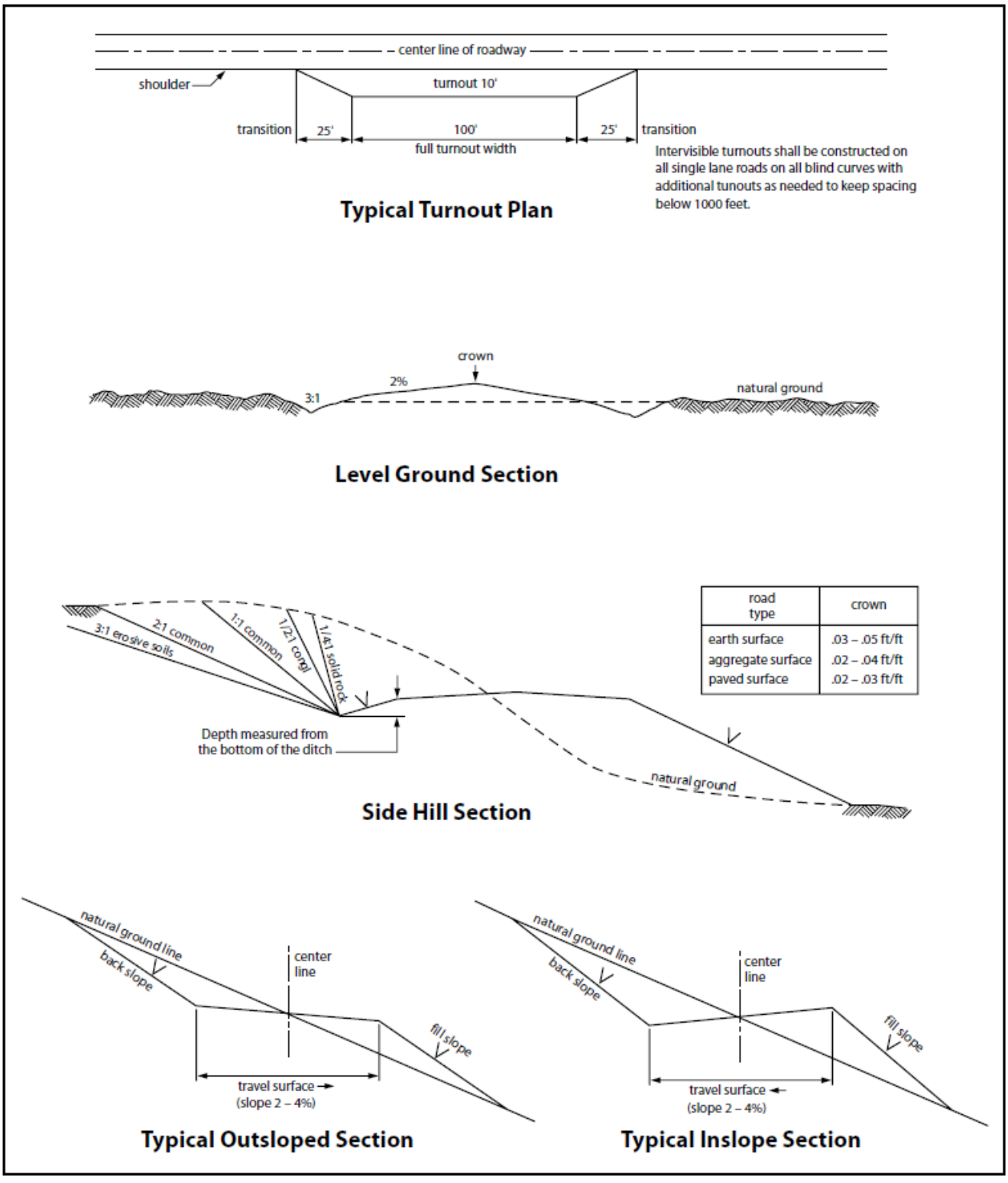


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Exclosure Netting (Open-top Tanks)
Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

Chemical and Fuel Secondary Containment and Exclosure Screening
The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

Open-Vent Exhaust Stack Exclosures
The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone*.) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

Containment Structures

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

B. PIPELINES

BURIED PIPELINE STIPULATIONS

A copy of the application (Grant, APD, or Sundry Notice) and attachments, including conditions of approval, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C.6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of holder, regardless of fault. Upon failure of holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve holder of any responsibility as provided herein.

5. All construction and maintenance activity will be confined to the authorized right-of-way.

6. The pipeline will be buried with a minimum cover of **36** inches between the top of the pipe and ground level.

7. The maximum allowable disturbance for construction in this right-of-way will be **30** feet:

- Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed **20** feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation*.)

- Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed **30** feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)

- The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)

8. The holder shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately ___6___ inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.

9. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

( ) seed mixture 1	( ) seed mixture 3
(X) seed mixture 2	( ) seed mixture 4
( ) seed mixture 2/LPC	( ) Aplomado Falcon Mixture

13. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2.

14. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. All signs and information thereon will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the life of the pipeline.

15. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder before maintenance begins. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during the life of the pipeline, the Authorized Officer may ask the holder to construct temporary deterrence structures.

16. Any cultural and/or paleontological resources (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

17. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes associated roads, pipeline corridor and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

18. Escape Ramps - The operator will construct and maintain pipeline/utility trenches that are not otherwise fenced, screened, or netted to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or

other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

a. Any trench left open for eight (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them at least 100 yards from the trench.
b. For trenches left open for eight (8) hours or more, earthen escape ramps (built at no more than a 30 degree slope and spaced no more than 500 feet apart) shall be placed in the trench.

19. Special Stipulations:

Cave/Karst Surface Mitigation

Construction:

In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

C. ELECTRIC LINES

STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES

A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the

Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.

5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching deterrence shall be placed on all vertical poles that extend past the cross arms.

6. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures as prescribed by the Authorized Officer.

9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.

10. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

11. Special Stipulations:

- For reclamation remove poles, lines, transformer, etc. and dispose of properly.
- Fill in any holes from the poles removed.
- **Cave/Karst Surface Mitigation**
- **Construction:**
- In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

VIII. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

IX. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

Seed Mixture 2, for Sandy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Sand dropseed (Sporobolus cryptandrus)	1.0
Sand love grass (Eragrostis trichodes)	1.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Devon Energy Production Company LP**
LEASE NO.:	**NMNM089057**
LOCATION:	Section 11, T.26 S., R.31 E., NMPM
COUNTY:	Eddy County, New Mexico

WELL NAME & NO.:	Shetland 11-2 Fed State Com 731H
SURFACE HOLE FOOTAGE:	15'/S & 535'/W
BOTTOM HOLE FOOTAGE	330'/N & 990'/W

COA

H2S	☉ Yes	○ No	
Potash	☉ None	○ Secretary	○ R-111-P
Cave/Karst Potential	○ Low	☉ Medium	○ High
Cave/Karst Potential	○ Critical		
Variance	○ None	☉ Flex Hose	○ Other
Wellhead	○ Conventional	☉ Multibowl	○ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP
Other	☑ Fluid Filled	☑ Cement Squeeze	☐ Pilot Hole
Special Requirements	☐ Water Disposal	☑ COM	☐ Unit

OPERATOR IS ONLY APPROVED FOR THE FOLLOWING DESIGN, OTHER DESIGNS SUBMITTED WILL BE VOID.

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **North Mason** play. As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

Alternate Casing Design:

1. The **13-3/8** inch surface casing shall be set at approximately **1155 feet** (a minimum of **70 feet (Eddy County)** into the Rustler Anhydrite and above the salt) and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall

be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.

2. The minimum required fill of cement behind the **8-5/8** inch intermediate casing is:

- Cement to surface. If cement does not circulate see B.1.a, c-d above.
  Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.
  Cement excess is less than 25%, more cement might be required.

❖ In Medium Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

Operator has proposed to pump down 13-3/8" X 8-5/8" annulus. Operator must run a CBL from TD of the 8-5/8" casing to surface. Submit results to BLM.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:

- Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.
  Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.
  Cement excess is less than 25%, more cement might be required

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'

2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout

preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **10,000 (10M)** psi. **Variance is approved to use a 5000 (5M) Annular which shall be tested to 5000 (5M) psi.**

a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
c. Manufacturer representative shall install the test plug for the initial BOP test.
d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

☒ Eddy County
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

☒ Lea County
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575) 393-3612

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
   b. When the operator proposes to set surface casing with Spudder Rig
      - Notify the BLM when moving in and removing the Spudder Rig.
      - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
      - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.

2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:

    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    c. Manufacturer representative shall install the test plug for the initial BOP test.
    d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
    e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not

hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).

c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

e. The results of the test shall be reported to the appropriate BLM office.

f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

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

Hydrogen Sulfide (H_2S) Contingency Plan

For

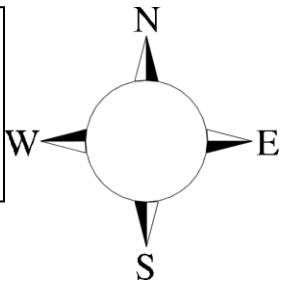
Shetland 11-2 Fed State Com 731H

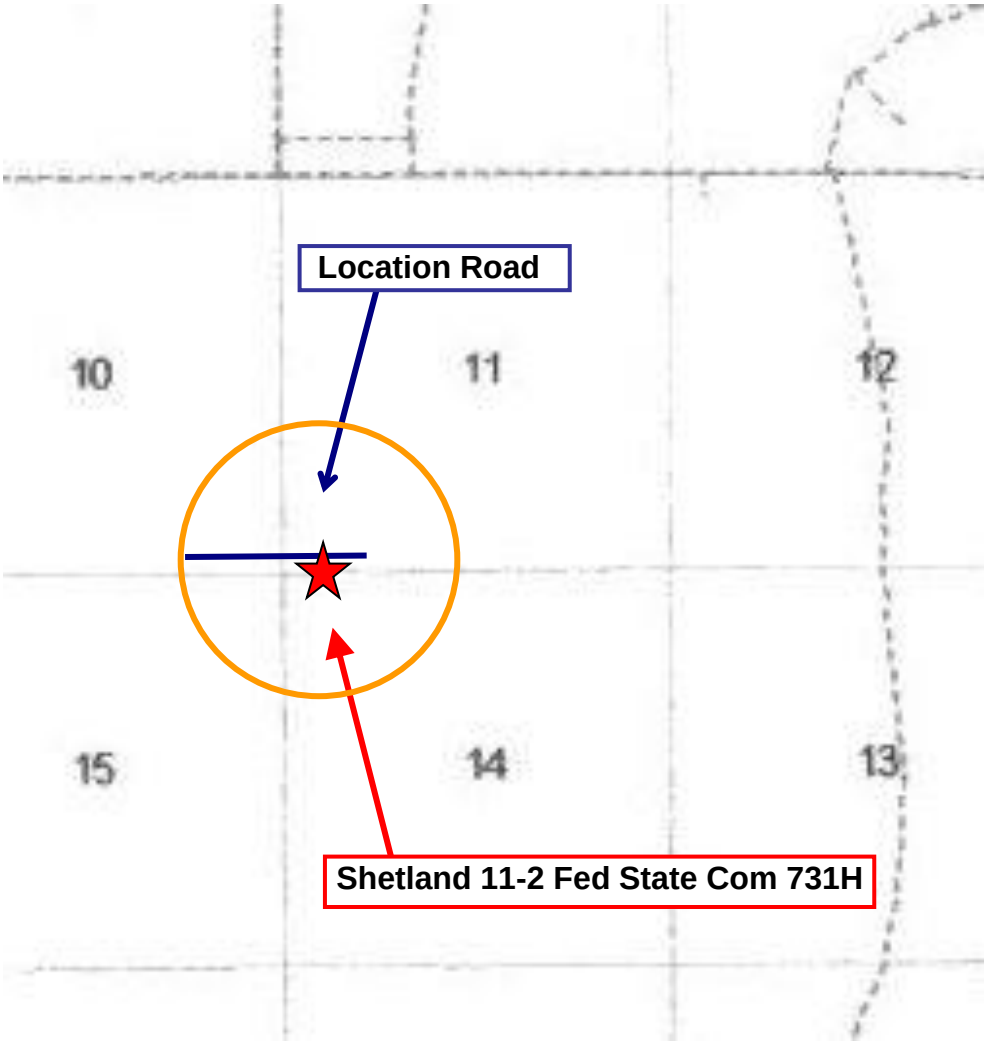
Sec-11 T-26S R-31E
15 FSL & 535' FWL
LAT. = 32.0511938' N (NAD83)
LONG = 103.7556911' W

Eddy County NM

Shetland 11-2 Fed State Com 731H

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 and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H_2S zone (within 3 days or 500 feet) and weekly H_2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H_2S Drilling Operations Plan and the Public Protection Plan.

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

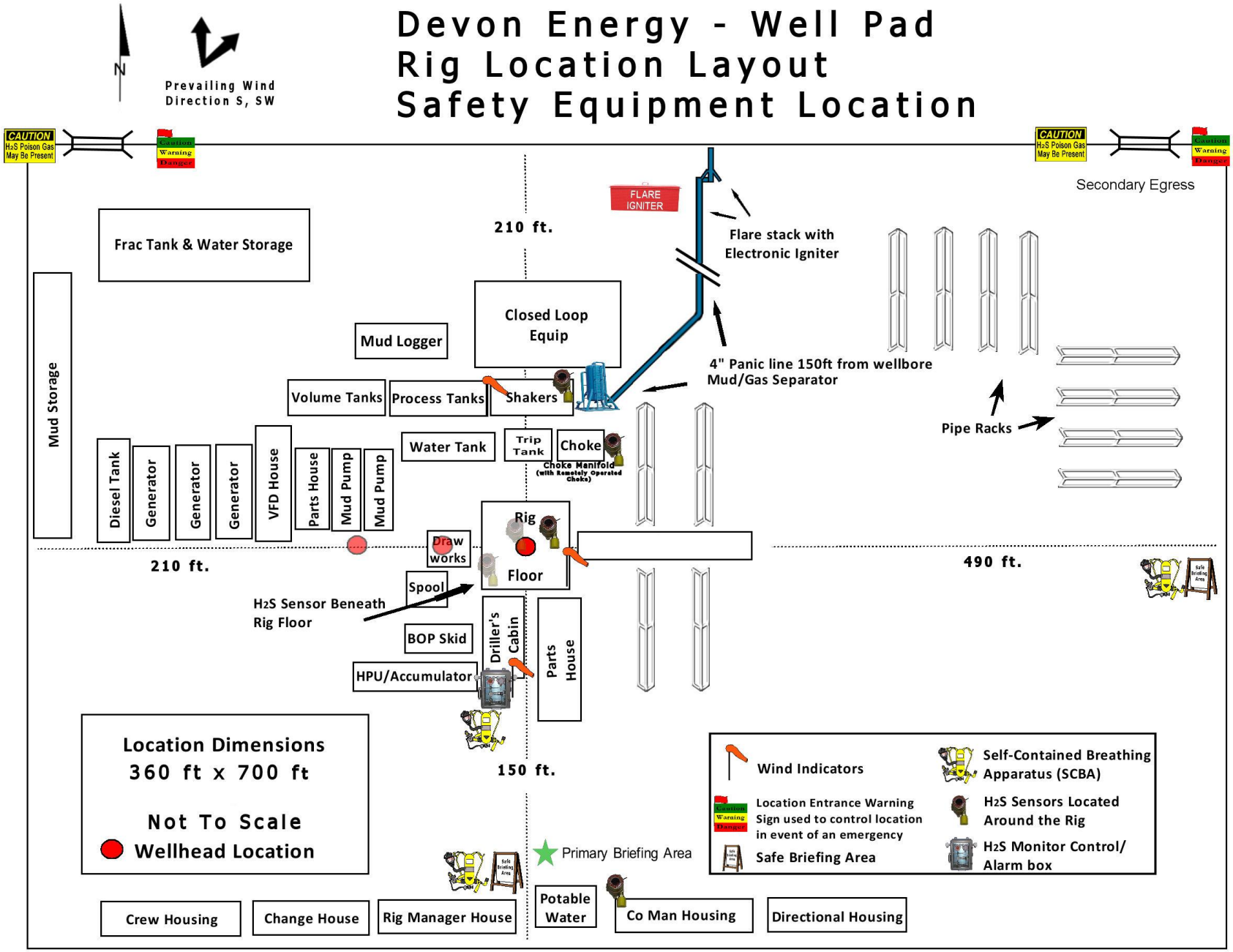
7. **Well testing:**

   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			
Drilling Supervisor – Basin – Mark Kramer			405-823-4796
EHS Professional – Laura Wright			405-439-8129
Agency Call List			
Lea County (575)	**Hobbs**		
	Lea County Communication Authority		393-3981
	State Police		392-5588
	City Police		397-9265
	Sheriff's Office		393-2515
	Ambulance		**911**
	Fire Department		397-9308
	LEPC (Local Emergency Planning Committee)		393-2870
	NMOCD		393-6161
	US Bureau of Land Management		393-3612
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		887-6544
	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 (NM and TX)		(800)642-7828
	Flight For Life - Lubbock, TX		(806) 743-9911
	Aerocare - Lubbock, TX		(806) 747-8923
	Med Flight Air Amb - Albuquerque, NM		(575) 842-4433
	Lifeguard Air Med Svc. Albuquerque, NM		(800) 222-1222
	Poison Control (24/7)		(575) 272-3115
	Oil & Gas Pipeline 24 Hour Service		(800) 364-4366
	NOAA – Website - www.nhc.noaa.gov		

Prepared in conjunction with
Dave Small


Devon Energy - Well Pad
Rig Location Layout
Safety Equipment Location
N
Prevailing Wind Direction S, SW
CAUTION H2S Poison Gas May Be Present
Caution Warning Danger
Secondary Egress
FLARE IGNITER
Flare stack with Electronic Igniter
210 ft.
Frac Tank & Water Storage
Closed Loop Equip
Mud Logger
4" Panic line 150ft from wellbore Mud/Gas Separator
Mud Storage
Volume Tanks
Process Tanks
Shakers
Pipe Racks
Water Tank
Trip Tank
Choke
Choke Manifold (with Remotely Operated Choke)
Diesel Tank
Generator
Generator
Generator
VFD House
Parts House
Mud Pump
Mud Pump
Rig Floor
Draw works
Spool
210 ft.
490 ft.
H2S Sensor Beneath Rig Floor
BOP Skid
HPU/Accumulator
Driller's Cabin
Parts House
150 ft.
Location Dimensions
360 ft x 700 ft
Not To Scale
Wellhead Location
Wind Indicators
Location Entrance Warning Sign used to control location in event of an emergency
Safe Briefing Area
Self-Contained Breathing Apparatus (SCBA)
H2S Sensors Located Around the Rig
H2S Monitor Control/ Alarm box
Primary Briefing Area
Crew Housing
Change House
Rig Manager House
Potable Water
Co Man Housing
Directional Housing