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.

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.

[315247]

2. Name of Operator **[6137]**

9. API Well No. **30-025-49126**

3a. Address

3b. Phone No. *(include area code)*

10. Field and Pool, or Exploratory **[98347]**

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface

At proposed prod. zone

11. Sec., T. R. M. or Blk. and Survey or Area

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

12. County or Parish

13. State

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration

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	Name *(Printed/Typed)*	Date
Title		
Approved by *(Signature)*	Name *(Printed/Typed)*	Date
Title	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.

Rec NGMP 06/16/2021

SL

KZ
07/01/2021

APPROVED WITH CONDITIONS

Approval Date: 05/26/2021

(Continued on page 2)

*(Instructions on page 2)

Additional Operator Remarks

Location of Well

0. SHL: SWSE / 580 FSL / 1819 FEL / TWSP: 26S / RANGE: 33E / SECTION: 12 / LAT: 32.052293 / LONG: -103.523406 (TVD: 0 feet, MD: 0 feet)

PPP: SWSE / 100 FSL / 2108 FEL / TWSP: 26S / RANGE: 33E / SECTION: 12 / LAT: 32.050974 / LONG: -103.524339 (TVD: 12996 feet, MD: 13024 feet)

BHL: NWNE / 20 FNL / 2108 FEL / TWSP: 26S / RANGE: 33E / SECTION: 1 / LAT: 32.079682 / LONG: -103.524337 (TVD: 13335 feet, MD: 23602 feet)

BLM Point of Contact

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

DISTRICT I
1625 N. FRENCH DR., HOBBS, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
DISTRICT II
811 S. FIRST ST., ARTESIA, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
DISTRICT III
1000 RIO BRAZOS RD., AZTEC, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
DISTRICT IV
1220 S. ST. FRANCIS DR., SANTA FE, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-025-49126	98347	WC-025 G-10 S263418C;LWR WOLFCAMP

Property Code	Property Name	Well Number
315247	SEAWOLF 12-1 FED	4H

OGRID No.	Operator Name	Elevation
6137	DEVON ENERGY PRODUCTION COMPANY, L.P.	3351.3'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	12	26-S	33-E		580	SOUTH	1819	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	1	26-S	33-E		20	NORTH	2108	EAST	LEA

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
320			

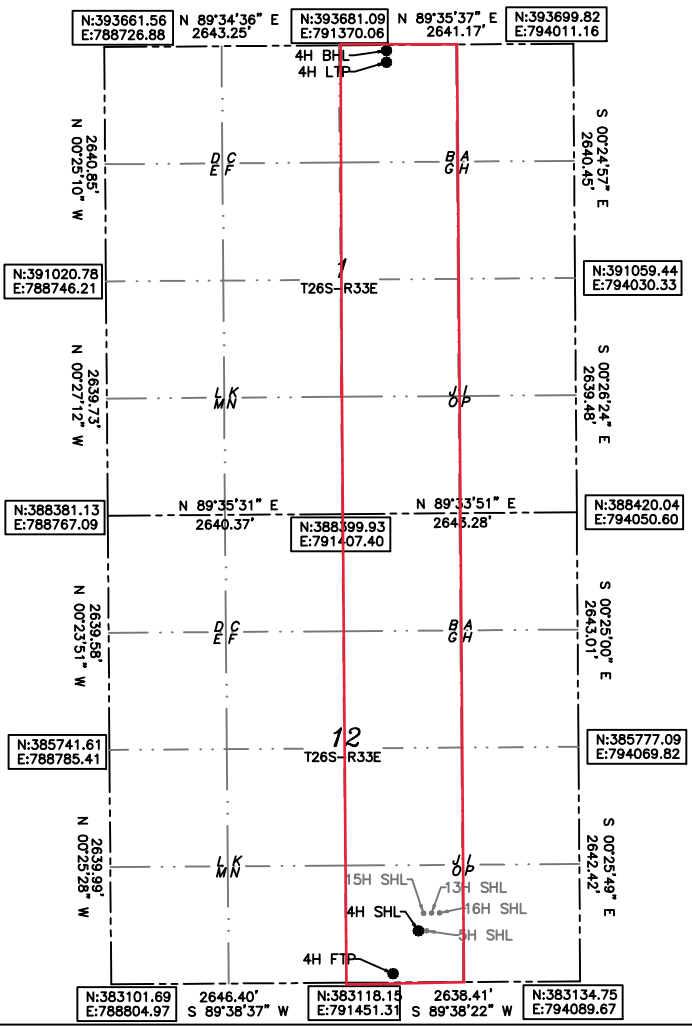
NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

SEAWOLF 12-1 FED 4H
EL: 3351.3'
LAT:32.052293
LON:103.523406
N:383703.29
E:79266.34

FIRST TAKE POINT
100' FSL 2108' FEL SEC. 12
LAT:32.050974
LON:103.524339
N:383221.48
E:791980.96

LAST TAKE POINT
100' FNL 2108' FEL SEC. 1
LAT:32.079462
LON:103.524337
N:393584.87
E:791903.94

BOTTOM OF HOLE
LAT:32.079682
LON:103.524337
N:393664.87
E:791903.36



Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83,New Mexico East Zone 3001, US Survey Feet, all distances are grid.

OPERATOR CERTIFICATION

I hereby certify that the information 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 mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Rebecca Deal 6/19/2020
Signature Date

Rebecca Deal, Regulatory Analyst
Printed Name

rebecca.deal@dvn.com
E-mail Address

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.

05/22/2020
Date of Survey

Signature & Seal of Professional Surveyor

B. L. LAMAN
NEW MEXICO
22404
PROFESSIONAL SURVEYOR

06/10/20
Certificate No. 22404 B.L. LAMAN
DRAWN BY: CM

Intent ☐ As Drilled ☐

API # 30-025-49126		
Operator Name:	Property Name:	Well Number

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

Is this well the defining well for the Horizontal Spacing Unit? ☐

Is this well an infill well? ☐

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

State of New Mexico
Energy, Minerals and Natural Resources Department

Submit Electronically
Via E-permitting

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

NATURAL GAS MANAGEMENT PLAN

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

Section 1 – Plan Description
Effective May 25, 2021

I. Operator: Devon Energy Production Company, L.P. **OGRID:** 6137 **Date:** 5 /26 / 2021

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

If Other, please describe: _____

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

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

IV. Central Delivery Point Name: Seawolf 12 CTB 1 [See 19.15.27.9(D)(1) NMAC]

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

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

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

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

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

Section 2 – Enhanced Plan
EFFECTIVE APRIL 1, 2022

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

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

IX. Anticipated Natural Gas Production:

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

X. Natural Gas Gathering System (NGGS):

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

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

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

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

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

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

Section 3 - Certifications

Effective May 25, 2021

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

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

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

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

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

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

Section 4 - Notices

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

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

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

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

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

Signature:	Catherine Lebsack JW
Printed Name:	Catherine Lebsack
Title:	Vice President
E-mail Address:	
Date:	6-12-2021
Phone:	

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

Well Name	API	ULSTR	N/S Footage	Call	E/W Footage	Call	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
Seawolf 12-1 Fed 20H		12-26S-33E	370	FSL	410	FWL	1200	3200	4000
Seawolf 12-1 Fed 11H		12-26S-33E	562	FSL	2271	FWL	1200	3200	4000
Seawolf 12-1 Fed 15H		12-26S-33E	780	FSL	1759	FEL	2000	4000	4000
Seawolf 12-1 Fed 4H		12-26S-33E	580	FSL	1819	FEL	1200	3200	4000
Seawolf 12-1 Fed 13H		12-26S-33E	780	FSL	1729	FEL	2000	4000	4000
Seawolf 12-1 Fed 17H		12-26S-33E	780	FSL	1669	FEL	2000	4000	4000
Seawolf 12-1 Fed 5H		12-26S-33E	580	FSL	1789	FEL	1200	3200	4000
Seawolf 12-1 Fed 16H		12-26S-33E	780	FSL	1699	FEL	2000	4000	4000

30-025-49126

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
Seawolf 12-1 Fed 20H		4/26/2022	5/26/2022	9/23/2022	9/23/2022	9/23/2022
Seawolf 12-1 Fed 11H		4/1/2022	5/1/2022	8/29/2022	8/29/2022	8/29/2022
Seawolf 12-1 Fed 15H		10/19/2021	11/19/2021	3/19/2022	3/19/2022	3/19/2022
Seawolf 12-1 Fed 4H		9/20/2021	10/20/2021	2/17/2022	2/17/2022	2/17/2022
Seawolf 12-1 Fed 13H		4/1/2022	5/1/2022	8/29/2022	8/29/2022	8/29/2022
Seawolf 12-1 Fed 17H		4/1/2022	5/1/2022	8/29/2022	8/29/2022	8/29/2022
Seawolf 12-1 Fed 5H		11/17/2021	12/17/2021	4/16/2022	4/16/2022	4/16/2022
Seawolf 12-1 Fed 16H		4/1/2022	5/1/2022	8/29/2022	8/29/2022	8/29/2022

30-025-49126

VI. Separation Equipment

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

VII. Operational Practices

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

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

VIII. Best Management Practices during Maintenance

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

AFMSS
U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Drilling Plan Data Report
06/16/2021

APD ID: 10400058194 **Submission Date:** 06/19/2020

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: SEAWOLF 12-1 FED **Well Number:** 4H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
763791	---	3351	0	0	OTHER : Surface	NONE	N
763792	RUSTLER	2371	980	980	SANDSTONE	NONE	N
763793	TOP SALT	2071	1280	1280	SALT	NONE	N
763801	BASE OF SALT	-1649	5000	5000	ANHYDRITE	NONE	N
763802	BELL CANYON	-1784	5135	5135	SANDSTONE	NATURAL GAS, OIL	N
763804	CHERRY CANYON	-2866	6217	6217	SANDSTONE	NATURAL GAS, OIL	N
763805	BRUSHY CANYON	-4464	7815	7815	SANDSTONE	NATURAL GAS, OIL	N
763790	BONE SPRING 1ST	-5939	9290	9290	LIMESTONE	NATURAL GAS, OIL	N
763806	BONE SPRING 1ST	-6894	10245	10245	SANDSTONE	NATURAL GAS, OIL	N
763799	BONE SPRING 2ND	-7444	10795	10795	SANDSTONE	NATURAL GAS, OIL	N
763797	BONE SPRING 3RD	-7915	11266	11266	LIMESTONE	NATURAL GAS, OIL	N
763807	BONE SPRING 3RD	-8529	11880	11880	SANDSTONE	NATURAL GAS, OIL	N
763800	WOLFCAMP	-8989	12340	12340	SHALE	NATURAL GAS, OIL	Y
763808	STRAWN	-11279	14630	14630	SHALE	NATURAL GAS, OIL	N

Section 2 - Blowout Prevention

Seawolf 12-1 Fed 4H

1. Geologic Formations

TVD of target	13335	Pilot hole depth	N/A
MD at TD:	23602	Deepest expected fresh water	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone?	Hazards*
Rustler	980		
Salt	1280		
Base of Salt	5000		
Delaware	5135		
Bone Spring 1st	6217		
Bone Spring 2nd	10795		
Bone Spring 3rd	11880		
Wolfcamp	12340		

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

Seawolf 12-1 Fed 4H

2. Casing Program (Primary Design)

Hole Size	Csg. Size	Wt (PPF)	Grade	Conn	Casing Interval		Casing Interval	
					From (MD)	To (MD)	From (TVD)	To (TVD)
17 1/2	13 3/8	48.0	H40	STC	0	1005	0	1005
9 7/8	8 5/8	32.0	P110	TLW	0	12340	0	12340
7 7/8	5 1/2	17.0	P110	BTC	0	23602	0	13335

• All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 IILB.1.h Must have table for continengcy casing.

3. Cementing Program (Primary Design)

Casing	# Sks	TOC	Wt. ppg	Yld (ft3/sack)	Slurry Description
Surface	766	Surf	13.2	1.44	Lead: Class C Cement + additives
Int 1	514	Surf	9	3.27	Lead: Class C Cement + additives
	465	4000' above	13.2	1.44	Tail: Class H / C + additives
Int 1 Intermediate Squeeze	As Needed	Surf	13.2	1.44	Squeeze Lead: Class C Cement + additives
	514	Surf	9	3.27	Lead: Class C Cement + additives
	465	4000' above	13.2	1.44	Tail: Class H / C + additives
Production	117	10783	9.0	3.3	Lead: Class H /C + additives
	1432	12783	13.2	1.4	Tail: Class H / C + additives

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	7281
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

Devon Energy
APD VARIANCE DATA

OPERATOR NAME: Devon Energy

1. SUMMARY OF Variance:

Devon Energy respectfully requests approval for the following additions to the drilling plan:

1. Potential utilization of a spudder rig to pre-set surface casing.

2. Description of Operations

1. A spudder rig contractor may move in their rig to drill the surface hole section and pre-set surface casing on this well.
   - **a.** After drilling the surface hole section, the rig will run casing and cement following all of the applicable rules and regulations (OnShore Order 2, all COAs and NMOCD regulations).
   - **b.** Rig will utilize fresh water based mud to drill surface hole to TD.

2. The wellhead will be installed and tested once the surface casing is cut off and the WOC time has been reached.

3. A blind flange with the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with needle valves installed on two wingvalves.
   - **a.** A means for intervention will be maintained while the drilling rig is not over the well.

4. The BLM will be contacted and notified 24 hours prior to commencing spudder rig operations.

5. Drilling operation will be performed with the big rig. At that time an approved BOP stack will be nippled up and tested on the wellhead before drilling operations commences on each well.
   - **a.** The BLM will be contacted / notified 24 hours before the big rig moves back on to the pad with the pre-set surface casing.

6. Devon Energy will have supervision on the rig to ensure compliance with all BLM and NMOCD regulations and to oversee operations.

7. Once the rig is removed, Devon Energy will secure the wellhead area by placing a guard rail around the cellar area.

devon

Commitment Runs Deep

Design Plan
Operation and Maintenance Plan
Closure Plan

SENM – Closed Loop Systems
June 2010

I. Design Plan

Devon uses MI SWACO closed loop system (CLS). The MI SWACO CLS is designed to maintain drill solids at or below 5%. The equipment is arranged to progressively remove solids from the largest to the smallest size. Drilling fluids can thus be reused and savings is realized on mud and disposal costs. Dewatering may be required with the centrifuges to insure removal of ultra fine solids.

The drilling location is constructed to allow storm water to flow to a central sump normally the cellar. This insures no contamination leaves the drilling pad in the event of a spill. Storm water is reused in the mud system or stored in a reserve fluid tank farm until it can be reused. All lubricants, oils, or chemicals are removed immediately from the ground to prevent the contamination of storm water. An oil trap is normally installed on the sump if an oil spill occurs during a storm.

A tank farm is utilized to store drilling fluids including fresh water and brine fluids. The tank farm is constructed on a 20 ml plastic lined, bermed pad to prevent the contamination of the drilling site during a spill. Fluids from other sites may be stored in these tanks for processing by the solids control equipment and reused in the mud system. At the end of the well the fluids are transported from the tank farm to an adjoining well or to the next well for the rig.

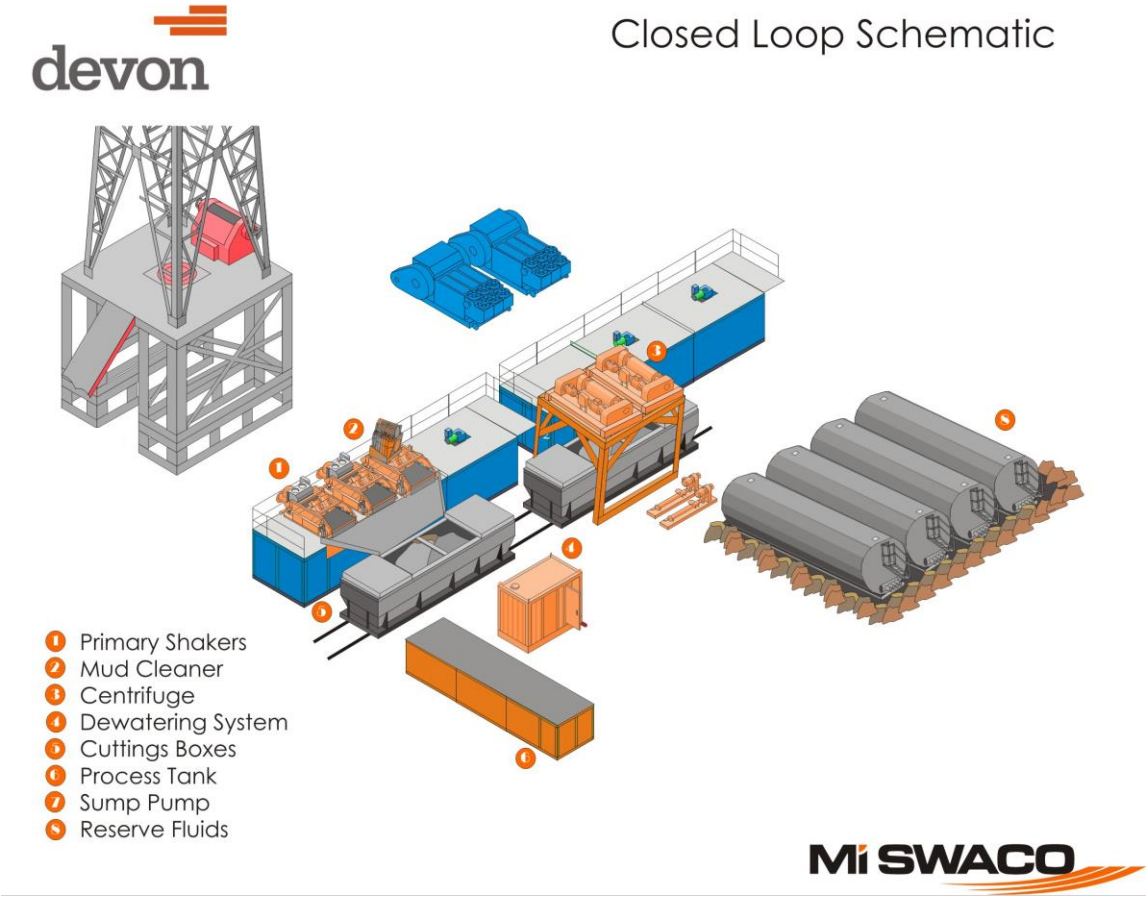
Prior to installing a closed-loop system on site, the topsoil, if present, will be stripped and stockpiled for use as the final cover or fill at the time of closure.

Signs will be posted on the fence surrounding the closed-loop system unless the closed-loop system is located on a site where there is an existing well, that is operated by Devon.

II. Operations and Maintenance Plan

Primary Shakers: The primary shakers make the first removal of drill solids from the drilling mud as it leaves the well bore. The shakers are sized to handle maximum drilling rate at optimal screen size. The shakers normally remove solids down to 74 microns.

Mud Cleaner: The Mud Cleaner cleans the fluid after it leaves the shakers. A set of hydrocyclones are sized to handle 1.25 to 1.5 times the maximum circulating rate. This ensures all the fluid is being processed to an average cut point of 25 microns. The wet discharged is dewatered on a shaker equipped with ultra fine mesh screens and generally cut at 40 microns.



Centrifuges: The centrifuges can be one or two in number depending on the well geometry or depth of well. The centrifuges are sized to maintain low gravity solids at 5% or below. They may or may not need a dewatering system to enhance the removal rates. The centrifuges can make a cut point of 8-10 microns depending on bowl speed, feed rate, solids loading and other factors.

The centrifuge system is designed to work on the active system and be flexible to process incoming fluids from other locations. This set-up is also dependant on well factors.

Dewatering System: The dewatering system is a chemical mixing and dosing system designed to enhance the solids removal of the centrifuge. Not commonly used in shallow wells. It may contain pH adjustment, coagulant mixing and dosing, and polymer mixing and dosing. Chemical flocculation binds ultra fine solids into a mass that is within the centrifuge operating design. The

dewatering system improves the centrifuge cut point to infinity or allows for the return of clear water or brine fluid. This ability allows for the ultimate control of low gravity solids.

Cuttings Boxes: Cuttings boxes are utilized to capture drill solids that are discarded from the solids control equipment. These boxes are set upon a rail system that allows for the removal and replacement of a full box of cuttings with an empty one. They are equipped with a cover that insures no product is spilled into the environment during the transportation phase.

Process Tank: (Optional) The process tank allows for the holding and process of fluids that are being transferred into the mud system. Additionally, during times of lost circulation the process tank may hold active fluids that are removed for additional treatment. It can further be used as a mixing tank during well control conditions.

Sump and Sump Pump: The sump is used to collect storm water and the pump is used to transfer this fluid to the active system or to the tank for to hold in reserve. It can also be used to collect fluids that may escape during spills. The location contains drainage ditches that allow the location fluids to drain to the sump.

Reserve Fluids (Tank Farm): A series of frac tanks are used to replace the reserve pit. These are steel tanks that are equipped with a manifold system and a transfer pump. These tanks can contain any number of fluids used during the drilling process. These can include fresh water, cut brine, and saturated salt fluid. The fluid can be from the active well or reclaimed fluid from other locations. A 20 ml liner and berm system is employed to ensure the fluids do not migrate to the environment during a spill.

If a leak develops, the appropriate division district office will be notified within 48 hours of the discovery and the leak will be addressed. Spill prevention is accomplished by maintaining pump packing, hoses, and pipe fittings to insure no leaks are occurring. During an upset condition the source of the spill is isolated and repaired as soon as it is discovered. Free liquid is removed by a diaphragm pump and returned to the mud system. Loose topsoil may be used to stabilize the spill and the contaminated soil is excavated and placed in the cuttings boxes. After the well is finished and the rig has moved, the entire location is scrapped and testing will be performed to determine if a release has occurred.

All trash is kept in a wire mesh enclosure and removed to an approved landfill when full. All spent motor oils are kept in separate containers and they are removed and sent to an approved recycling center. Any spilled lubricants, pipe

dope, or regulated chemicals are removed from soil and sent to landfills approved for these products.

These operations are monitored by Mi Swaco service technicians. Daily logs are maintained to ensure optimal equipment operation and maintenance. Screen and chemical use is logged to maintain inventory control. Fluid properties are monitored and recorded and drilling mud volumes are accounted for in the mud storage farm. This data is kept for end of well review to insure performance goals are met. Lessons learned are logged and used to help with continuous improvement.

A MI SWACO field supervisor manages from 3-5 wells. They are responsible for training personnel, supervising installations, and inspecting sites for compliance of MI SWACO safety and operational policy.

III. Closure Plan

A maximum 340' X 340' caliche pad is built per well. All of the trucks and steel tanks fit on this pad. All fluid cuttings go to the steel tanks to be hauled by various trucking companies to an agency approved disposal.

Continental CONTITECH

Fluid Technology

ContiTech Beattie Corp.
Website: www.contitechbeattie.com

Monday, June 14, 2010

RE: Drilling & Production Hoses
Lifting & Safety Equipment

To Helmerich & Payne,

A Continental ContiTech hose assembly can perform as intended and suitable for the application regardless of whether the hose is secured or unsecured in its configuration. As a manufacturer of High Pressure Hose Assemblies for use in Drilling & Production, we do offer the corresponding lifting and safety equipment, this has the added benefit of easing the lifting and handling of each hose assembly whilst affording hose longevity by ensuring correct handling methods and procedures as well as securing the hose in the unlikely event of a failure; but in no way does the lifting and safety equipment affect the performance of the hoses providing the hoses have been handled and installed correctly it is good practice to use lifting & safety equipment but not mandatory

Should you have any questions or require any additional information/clarifications then please do not hesitate to contact us.

ContiTech Beattie is part of the Continental AG Corporation and can offer the full support resources associated with a global organization.

Best regards,

Robin Hodgson
Sales Manager
ContiTech Beattie Corp

ContiTech Beattie Corp,
11535 Brittmoore Park Drive,
Houston, TX 77041
Phone: +1 (832) 327-0141
Fax: +1 (832) 327-0148
www.contitechbeattie.com

RIG 212

PHOENIX

QUALITY DOCUMENT

PHOENIX RUBBER INDUSTRIAL LTD.

6728 Szeged, Budapesti út 10. Hungary • H-6701 Szeged, P. O. Box 152
Phone: (3662) 566-737 • Fax: (3662) 566-738

SALES & MARKETING: H-1092 Budapest, Ráday u. 42-44. Hungary • H-1440 Budapest, P. O. Box 26
Phone: (361) 456-4200 • Fax: (361) 217-2972, 456-4273 • www.taurusemerge.hu

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE					CERT. N°: 552
PURCHASER: Phoenix Beattie Co.					P.O. N°: 1519FA-871
PHOENIX RUBBER order N°: 170466		HOSE TYPE: 3" ID		Choke and Kill Hose	
HOSE SERIAL N°: 34128		NOMINAL / ACTUAL LENGTH:		11,43 m	
W.P. 68,96 MPa	10000 psi	T.P. 103,4 MPa	15000 psi	Duration: 60	min.

Pressure test with water at ambient temperature

See attachment. (1 page)

↑ 10 mm = 10 Min.

→ 10 mm = 25 MPa

COUPLINGS

Type	Serial N°	Quality	Heat N°
3" coupling with	720 719	AISI 4130	C7626
4 1/16" Flange end		AISI 4130	47357

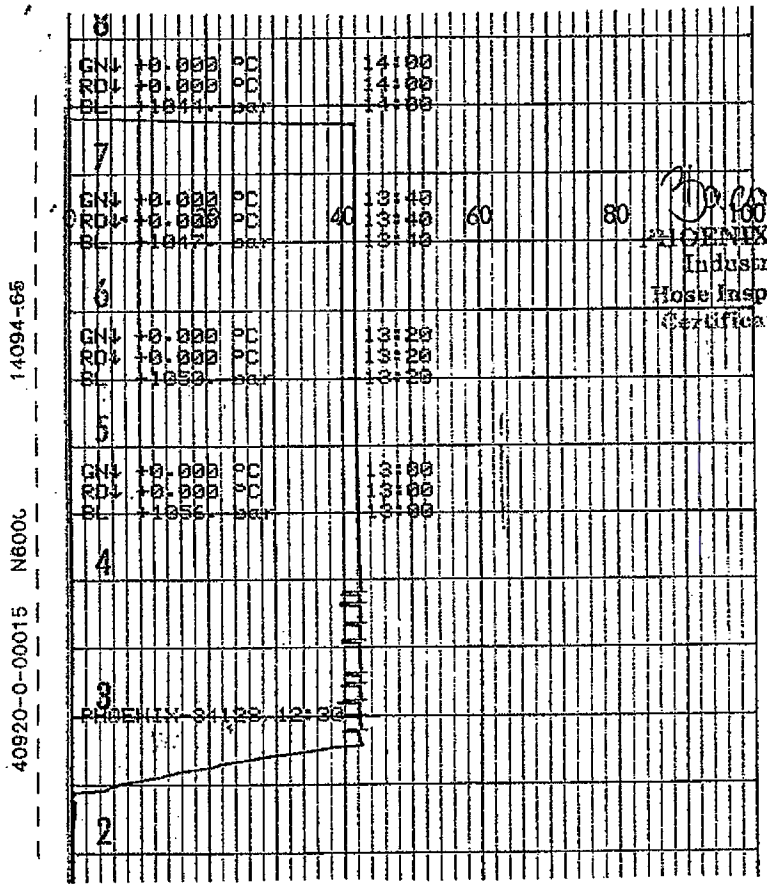
API Spec 16 C
Temperature rate:"B"

All metal parts are flawless

WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.

Date:	Inspector	Quality Control
29. April. 2002.		PHOENIX RUBBER Industrial Ltd. Hose Inspection and Verification Dept.

VERIFIED TRUE COPY
PHOENIX RUBBER Q.C.



PHOENIX RUBBER
Industrial Ltd.
Hose Inspection and
Certification Dept.

VERIFIED TRUE COPY
PHOENIX RUBBER LTD.

WCDSC Permian NM

Lea County (NAD83 New Mexico East)
Sec 12-T26S-R33E
Seawolf 12-1 Fed 4H

Wellbore #1

Plan: Permit Plan 1

Standard Planning Report - Geographic

11 June, 2020

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Seawolf 12-1 Fed 4H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3376.30ft
Project:	Lea County (NAD83 New Mexico East)	**MD Reference:**	RKB @ 3376.30ft
Site:	Sec 12-T26S-R33E	**North Reference:**	Grid
Well:	Seawolf 12-1 Fed 4H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Project	Lea County (NAD83 New Mexico East)		
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 12-T26S-R33E				
Site Position:		**Northing:**	383,134.75 usft	**Latitude:**	32.050692
From:	Map	**Easting:**	794,089.67 usft	**Longitude:**	-103.517536
Position Uncertainty:	0.00 ft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.43 °

Well	Seawolf 12-1 Fed 4H					
Well Position	**+N/-S**	0.00 ft	**Northing:**	383,703.29 usft	**Latitude:**	32.052293
	+E/-W	0.00 ft	**Easting:**	792,266.34 usft	**Longitude:**	-103.523406
Position Uncertainty		0.50 ft	**Wellhead Elevation:**		**Ground Level:**	3,351.30 ft

Wellbore	Wellbore #1				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2015	6/10/2020	6.59	59.87	47,535.65440539

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	357.91	

Plan Survey Tool Program **Date** 6/11/2020

	Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	23,601.89	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	
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,902.63	4.03	208.60	3,902.30	-12.42	-6.77	1.00	1.00	0.00	208.60	
12,164.52	4.03	208.60	12,143.80	-521.72	-284.49	0.00	0.00	0.00	0.00	
12,432.94	0.00	0.00	12,412.00	-530.00	-289.00	1.50	-1.50	0.00	180.00	
12,782.98	0.00	0.00	12,762.04	-530.00	-289.00	0.00	0.00	0.00	0.00	
13,682.99	90.00	359.60	13,335.00	42.94	-293.04	10.00	10.00	0.00	359.60	Seawolf 12-1 Fed 4H
23,601.89	90.00	359.60	13,335.00	9,961.60	-362.98	0.00	0.00	0.00	0.00	Seawolf 12-1 Fed 4H

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Seawolf 12-1 Fed 4H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3376.30ft
Project:	Lea County (NAD83 New Mexico East)	**MD Reference:**	RKB @ 3376.30ft
Site:	Sec 12-T26S-R33E	**North Reference:**	Grid
Well:	Seawolf 12-1 Fed 4H	**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	383,703.29	792,266.34	32.052293	-103.523406
100.00	0.00	0.00	100.00	0.00	0.00	383,703.29	792,266.34	32.052293	-103.523406
200.00	0.00	0.00	200.00	0.00	0.00	383,703.29	792,266.34	32.052293	-103.523406
300.00	0.00	0.00	300.00	0.00	0.00	383,703.29	792,266.34	32.052293	-103.523406
400.00	0.00	0.00	400.00	0.00	0.00	383,703.29	792,266.34	32.052293	-103.523406
500.00	0.00	0.00	500.00	0.00	0.00	383,703.29	792,266.34	32.052293	-103.523406
600.00	0.00	0.00	600.00	0.00	0.00	383,703.29	792,266.34	32.052293	-103.523406
700.00	0.00	0.00	700.00	0.00	0.00	383,703.29	792,266.34	32.052293	-103.523406
800.00	0.00	0.00	800.00	0.00	0.00	383,703.29	792,266.34	32.052293	-103.523406
900.00	0.00	0.00	900.00	0.00	0.00	383,703.29	792,266.34	32.052293	-103.523406
1,000.00	0.00	0.00	1,000.00	0.00	0.00	383,703.29	792,266.34	32.052293	-103.523406
1,100.00	0.00	0.00	1,100.00	0.00	0.00	383,703.29	792,266.34	32.052293	-103.523406
1,200.00	0.00	0.00	1,200.00	0.00	0.00	383,703.29	792,266.34	32.052293	-103.523406
1,300.00	0.00	0.00	1,300.00	0.00	0.00	383,703.29	792,266.34	32.052293	-103.523406
1,400.00	0.00	0.00	1,400.00	0.00	0.00	383,703.29	792,266.34	32.052293	-103.523406
1,500.00	0.00	0.00	1,500.00	0.00	0.00	383,703.29	792,266.34	32.052293	-103.523406
1,600.00	0.00	0.00	1,600.00	0.00	0.00	383,703.29	792,266.34	32.052293	-103.523406
1,700.00	0.00	0.00	1,700.00	0.00	0.00	383,703.29	792,266.34	32.052293	-103.523406
1,800.00	0.00	0.00	1,800.00	0.00	0.00	383,703.29	792,266.34	32.052293	-103.523406
1,900.00	0.00	0.00	1,900.00	0.00	0.00	383,703.29	792,266.34	32.052293	-103.523406
2,000.00	0.00	0.00	2,000.00	0.00	0.00	383,703.29	792,266.34	32.052293	-103.523406
2,100.00	0.00	0.00	2,100.00	0.00	0.00	383,703.29	792,266.34	32.052293	-103.523406
2,200.00	0.00	0.00	2,200.00	0.00	0.00	383,703.29	792,266.34	32.052293	-103.523406
2,300.00	0.00	0.00	2,300.00	0.00	0.00	383,703.29	792,266.34	32.052293	-103.523406
2,400.00	0.00	0.00	2,400.00	0.00	0.00	383,703.29	792,266.34	32.052293	-103.523406
2,500.00	0.00	0.00	2,500.00	0.00	0.00	383,703.29	792,266.34	32.052293	-103.523406
2,600.00	0.00	0.00	2,600.00	0.00	0.00	383,703.29	792,266.34	32.052293	-103.523406
2,700.00	0.00	0.00	2,700.00	0.00	0.00	383,703.29	792,266.34	32.052293	-103.523406
2,800.00	0.00	0.00	2,800.00	0.00	0.00	383,703.29	792,266.34	32.052293	-103.523406
2,900.00	0.00	0.00	2,900.00	0.00	0.00	383,703.29	792,266.34	32.052293	-103.523406
3,000.00	0.00	0.00	3,000.00	0.00	0.00	383,703.29	792,266.34	32.052293	-103.523406
3,100.00	0.00	0.00	3,100.00	0.00	0.00	383,703.29	792,266.34	32.052293	-103.523406
3,200.00	0.00	0.00	3,200.00	0.00	0.00	383,703.29	792,266.34	32.052293	-103.523406
3,300.00	0.00	0.00	3,300.00	0.00	0.00	383,703.29	792,266.34	32.052293	-103.523406
3,400.00	0.00	0.00	3,400.00	0.00	0.00	383,703.29	792,266.34	32.052293	-103.523406
3,500.00	0.00	0.00	3,500.00	0.00	0.00	383,703.29	792,266.34	32.052293	-103.523406
3,600.00	1.00	208.60	3,600.00	-0.77	-0.42	383,702.52	792,265.92	32.052291	-103.523408
3,700.00	2.00	208.60	3,699.96	-3.06	-1.67	383,700.22	792,264.67	32.052284	-103.523412
3,800.00	3.00	208.60	3,799.86	-6.89	-3.76	383,696.39	792,262.58	32.052274	-103.523419
3,900.00	4.00	208.60	3,899.68	-12.25	-6.68	383,691.03	792,259.66	32.052259	-103.523428
3,902.63	4.03	208.60	3,902.30	-12.42	-6.77	383,690.87	792,259.57	32.052259	-103.523429
4,000.00	4.03	208.60	3,999.43	-18.42	-10.04	383,684.87	792,256.29	32.052242	-103.523439
4,100.00	4.03	208.60	4,099.18	-24.58	-13.40	383,678.71	792,252.93	32.052226	-103.523450
4,200.00	4.03	208.60	4,198.93	-30.75	-16.77	383,672.54	792,249.57	32.052209	-103.523461
4,300.00	4.03	208.60	4,298.69	-36.91	-20.13	383,666.38	792,246.21	32.052192	-103.523472
4,400.00	4.03	208.60	4,398.44	-43.08	-23.49	383,660.21	792,242.85	32.052175	-103.523483
4,500.00	4.03	208.60	4,498.19	-49.24	-26.85	383,654.05	792,239.49	32.052158	-103.523494
4,600.00	4.03	208.60	4,597.95	-55.40	-30.21	383,647.88	792,236.13	32.052141	-103.523505
4,700.00	4.03	208.60	4,697.70	-61.57	-33.57	383,641.72	792,232.77	32.052124	-103.523516
4,800.00	4.03	208.60	4,797.45	-67.73	-36.93	383,635.55	792,229.40	32.052107	-103.523527
4,900.00	4.03	208.60	4,897.21	-73.90	-40.30	383,629.39	792,226.04	32.052091	-103.523538
5,000.00	4.03	208.60	4,996.96	-80.06	-43.66	383,623.23	792,222.68	32.052074	-103.523549
5,100.00	4.03	208.60	5,096.71	-86.23	-47.02	383,617.06	792,219.32	32.052057	-103.523560
5,200.00	4.03	208.60	5,196.47	-92.39	-50.38	383,610.90	792,215.96	32.052040	-103.523571
5,300.00	4.03	208.60	5,296.22	-98.56	-53.74	383,604.73	792,212.60	32.052023	-103.523582

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Seawolf 12-1 Fed 4H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3376.30ft
Project:	Lea County (NAD83 New Mexico East)	**MD Reference:**	RKB @ 3376.30ft
Site:	Sec 12-T26S-R33E	**North Reference:**	Grid
Well:	Seawolf 12-1 Fed 4H	**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	4.03	208.60	5,395.97	-104.72	-57.10	383,598.57	792,209.24	32.052006	-103.523593
5,500.00	4.03	208.60	5,495.73	-110.89	-60.46	383,592.40	792,205.87	32.051989	-103.523604
5,600.00	4.03	208.60	5,595.48	-117.05	-63.83	383,586.24	792,202.51	32.051972	-103.523615
5,700.00	4.03	208.60	5,695.23	-123.21	-67.19	383,580.07	792,199.15	32.051956	-103.523626
5,800.00	4.03	208.60	5,794.99	-129.38	-70.55	383,573.91	792,195.79	32.051939	-103.523637
5,900.00	4.03	208.60	5,894.74	-135.54	-73.91	383,567.74	792,192.43	32.051922	-103.523648
6,000.00	4.03	208.60	5,994.49	-141.71	-77.27	383,561.58	792,189.07	32.051905	-103.523659
6,100.00	4.03	208.60	6,094.25	-147.87	-80.63	383,555.42	792,185.71	32.051888	-103.523670
6,200.00	4.03	208.60	6,194.00	-154.04	-83.99	383,549.25	792,182.34	32.051871	-103.523681
6,300.00	4.03	208.60	6,293.75	-160.20	-87.36	383,543.09	792,178.98	32.051854	-103.523692
6,400.00	4.03	208.60	6,393.51	-166.37	-90.72	383,536.92	792,175.62	32.051837	-103.523703
6,500.00	4.03	208.60	6,493.26	-172.53	-94.08	383,530.76	792,172.26	32.051821	-103.523714
6,600.00	4.03	208.60	6,593.01	-178.70	-97.44	383,524.59	792,168.90	32.051804	-103.523725
6,700.00	4.03	208.60	6,692.76	-184.86	-100.80	383,518.43	792,165.54	32.051787	-103.523736
6,800.00	4.03	208.60	6,792.52	-191.02	-104.16	383,512.26	792,162.18	32.051770	-103.523747
6,900.00	4.03	208.60	6,892.27	-197.19	-107.52	383,506.10	792,158.81	32.051753	-103.523758
7,000.00	4.03	208.60	6,992.02	-203.35	-110.89	383,499.94	792,155.45	32.051736	-103.523769
7,100.00	4.03	208.60	7,091.78	-209.52	-114.25	383,493.77	792,152.09	32.051719	-103.523780
7,200.00	4.03	208.60	7,191.53	-215.68	-117.61	383,487.61	792,148.73	32.051702	-103.523791
7,300.00	4.03	208.60	7,291.28	-221.85	-120.97	383,481.44	792,145.37	32.051686	-103.523802
7,400.00	4.03	208.60	7,391.04	-228.01	-124.33	383,475.28	792,142.01	32.051669	-103.523813
7,500.00	4.03	208.60	7,490.79	-234.18	-127.69	383,469.11	792,138.65	32.051652	-103.523824
7,600.00	4.03	208.60	7,590.54	-240.34	-131.05	383,462.95	792,135.28	32.051635	-103.523835
7,700.00	4.03	208.60	7,690.30	-246.51	-134.42	383,456.78	792,131.92	32.051618	-103.523846
7,800.00	4.03	208.60	7,790.05	-252.67	-137.78	383,450.62	792,128.56	32.051601	-103.523857
7,900.00	4.03	208.60	7,889.80	-258.83	-141.14	383,444.45	792,125.20	32.051584	-103.523868
8,000.00	4.03	208.60	7,989.56	-265.00	-144.50	383,438.29	792,121.84	32.051567	-103.523879
8,100.00	4.03	208.60	8,089.31	-271.16	-147.86	383,432.13	792,118.48	32.051551	-103.523890
8,200.00	4.03	208.60	8,189.06	-277.33	-151.22	383,425.96	792,115.12	32.051534	-103.523901
8,300.00	4.03	208.60	8,288.82	-283.49	-154.58	383,419.80	792,111.75	32.051517	-103.523912
8,400.00	4.03	208.60	8,388.57	-289.66	-157.95	383,413.63	792,108.39	32.051500	-103.523923
8,500.00	4.03	208.60	8,488.32	-295.82	-161.31	383,407.47	792,105.03	32.051483	-103.523934
8,600.00	4.03	208.60	8,588.08	-301.99	-164.67	383,401.30	792,101.67	32.051466	-103.523945
8,700.00	4.03	208.60	8,687.83	-308.15	-168.03	383,395.14	792,098.31	32.051449	-103.523956
8,800.00	4.03	208.60	8,787.58	-314.32	-171.39	383,388.97	792,094.95	32.051432	-103.523967
8,900.00	4.03	208.60	8,887.33	-320.48	-174.75	383,382.81	792,091.59	32.051416	-103.523978
9,000.00	4.03	208.60	8,987.09	-326.64	-178.11	383,376.64	792,088.22	32.051399	-103.523989
9,100.00	4.03	208.60	9,086.84	-332.81	-181.48	383,370.48	792,084.86	32.051382	-103.524000
9,200.00	4.03	208.60	9,186.59	-338.97	-184.84	383,364.32	792,081.50	32.051365	-103.524011
9,300.00	4.03	208.60	9,286.35	-345.14	-188.20	383,358.15	792,078.14	32.051348	-103.524022
9,400.00	4.03	208.60	9,386.10	-351.30	-191.56	383,351.99	792,074.78	32.051331	-103.524033
9,500.00	4.03	208.60	9,485.85	-357.47	-194.92	383,345.82	792,071.42	32.051314	-103.524044
9,600.00	4.03	208.60	9,585.61	-363.63	-198.28	383,339.66	792,068.06	32.051297	-103.524055
9,700.00	4.03	208.60	9,685.36	-369.80	-201.64	383,333.49	792,064.69	32.051281	-103.524066
9,800.00	4.03	208.60	9,785.11	-375.96	-205.01	383,327.33	792,061.33	32.051264	-103.524077
9,900.00	4.03	208.60	9,884.87	-382.13	-208.37	383,321.16	792,057.97	32.051247	-103.524088
10,000.00	4.03	208.60	9,984.62	-388.29	-211.73	383,315.00	792,054.61	32.051230	-103.524099
10,100.00	4.03	208.60	10,084.37	-394.45	-215.09	383,308.83	792,051.25	32.051213	-103.524110
10,200.00	4.03	208.60	10,184.13	-400.62	-218.45	383,302.67	792,047.89	32.051196	-103.524121
10,300.00	4.03	208.60	10,283.88	-406.78	-221.81	383,296.51	792,044.53	32.051179	-103.524132
10,400.00	4.03	208.60	10,383.63	-412.95	-225.17	383,290.34	792,041.16	32.051162	-103.524143
10,500.00	4.03	208.60	10,483.39	-419.11	-228.54	383,284.18	792,037.80	32.051146	-103.524154
10,600.00	4.03	208.60	10,583.14	-425.28	-231.90	383,278.01	792,034.44	32.051129	-103.524165
10,700.00	4.03	208.60	10,682.89	-431.44	-235.26	383,271.85	792,031.08	32.051112	-103.524176
10,800.00	4.03	208.60	10,782.65	-437.61	-238.62	383,265.68	792,027.72	32.051095	-103.524187

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Seawolf 12-1 Fed 4H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3376.30ft
Project:	Lea County (NAD83 New Mexico East)	**MD Reference:**	RKB @ 3376.30ft
Site:	Sec 12-T26S-R33E	**North Reference:**	Grid
Well:	Seawolf 12-1 Fed 4H	**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	4.03	208.60	10,882.40	-443.77	-241.98	383,259.52	792,024.36	32.051078	-103.524198
11,000.00	4.03	208.60	10,982.15	-449.94	-245.34	383,253.35	792,021.00	32.051061	-103.524209
11,100.00	4.03	208.60	11,081.91	-456.10	-248.70	383,247.19	792,017.63	32.051044	-103.524220
11,200.00	4.03	208.60	11,181.66	-462.26	-252.07	383,241.02	792,014.27	32.051027	-103.524231
11,300.00	4.03	208.60	11,281.41	-468.43	-255.43	383,234.86	792,010.91	32.051011	-103.524242
11,400.00	4.03	208.60	11,381.16	-474.59	-258.79	383,228.70	792,007.55	32.050994	-103.524253
11,500.00	4.03	208.60	11,480.92	-480.76	-262.15	383,222.53	792,004.19	32.050977	-103.524264
11,600.00	4.03	208.60	11,580.67	-486.92	-265.51	383,216.37	792,000.83	32.050960	-103.524275
11,700.00	4.03	208.60	11,680.42	-493.09	-268.87	383,210.20	791,997.47	32.050943	-103.524286
11,800.00	4.03	208.60	11,780.18	-499.25	-272.23	383,204.04	791,994.10	32.050926	-103.524297
11,900.00	4.03	208.60	11,879.93	-505.42	-275.60	383,197.87	791,990.74	32.050909	-103.524308
12,000.00	4.03	208.60	11,979.68	-511.58	-278.96	383,191.71	791,987.38	32.050892	-103.524319
12,100.00	4.03	208.60	12,079.44	-517.75	-282.32	383,185.54	791,984.02	32.050876	-103.524330
12,164.52	4.03	208.60	12,143.80	-521.72	-284.49	383,181.57	791,981.85	32.050865	-103.524337
12,200.00	3.49	208.60	12,179.20	-523.77	-285.60	383,179.52	791,980.74	32.050859	-103.524341
12,300.00	1.99	208.60	12,279.08	-527.97	-287.89	383,175.32	791,978.45	32.050848	-103.524348
12,400.00	0.49	208.60	12,379.06	-529.88	-288.93	383,173.41	791,977.41	32.050842	-103.524352
12,432.94	0.00	0.00	12,412.00	-530.00	-289.00	383,173.29	791,977.34	32.050842	-103.524352
12,500.00	0.00	0.00	12,479.06	-530.00	-289.00	383,173.29	791,977.34	32.050842	-103.524352
12,600.00	0.00	0.00	12,579.06	-530.00	-289.00	383,173.29	791,977.34	32.050842	-103.524352
12,700.00	0.00	0.00	12,679.06	-530.00	-289.00	383,173.29	791,977.34	32.050842	-103.524352
12,782.98	0.00	0.00	12,762.04	-530.00	-289.00	383,173.29	791,977.34	32.050842	-103.524352
12,783.00	0.00	359.60	12,762.06	-530.00	-289.00	383,173.29	791,977.34	32.050842	-103.524352
KOP @ 12783' MD, 50' FSL, 2108' FEL									
12,800.00	1.70	359.60	12,779.05	-529.75	-289.00	383,173.54	791,977.34	32.050843	-103.524352
12,900.00	11.70	359.60	12,878.25	-518.09	-289.08	383,185.20	791,977.25	32.050875	-103.524352
13,000.00	21.70	359.60	12,973.91	-489.39	-289.29	383,213.90	791,977.05	32.050954	-103.524352
13,024.00	24.10	359.60	12,996.01	-480.05	-289.35	383,223.24	791,976.99	32.050979	-103.524352
FTP @ 13024' MD, 100' FSL, 2108' FEL									
13,100.00	31.70	359.60	13,063.13	-444.51	-289.60	383,258.77	791,976.74	32.051077	-103.524352
13,200.00	41.70	359.60	13,143.20	-384.83	-290.02	383,318.46	791,976.31	32.051241	-103.524352
13,300.00	51.70	359.60	13,211.69	-312.14	-290.54	383,391.15	791,975.80	32.051441	-103.524352
13,400.00	61.70	359.60	13,266.53	-228.67	-291.12	383,474.62	791,975.21	32.051670	-103.524352
13,500.00	71.70	359.60	13,306.03	-136.94	-291.77	383,566.35	791,974.57	32.051922	-103.524351
13,600.00	81.70	359.60	13,329.00	-39.75	-292.46	383,663.54	791,973.88	32.052190	-103.524351
13,682.99	90.00	359.60	13,335.00	42.94	-293.04	383,746.23	791,973.30	32.052417	-103.524351
13,700.00	90.00	359.60	13,335.00	59.96	-293.16	383,763.25	791,973.18	32.052464	-103.524351
13,800.00	90.00	359.60	13,335.00	159.96	-293.87	383,863.25	791,972.47	32.052739	-103.524351
13,900.00	90.00	359.60	13,335.00	259.95	-294.57	383,963.24	791,971.77	32.053013	-103.524351
14,000.00	90.00	359.60	13,335.00	359.95	-295.28	384,063.24	791,971.06	32.053288	-103.524351
14,100.00	90.00	359.60	13,335.00	459.95	-295.98	384,163.24	791,970.36	32.053563	-103.524351
14,200.00	90.00	359.60	13,335.00	559.95	-296.69	384,263.23	791,969.65	32.053838	-103.524350
14,300.00	90.00	359.60	13,335.00	659.94	-297.39	384,363.23	791,968.95	32.054113	-103.524350
14,400.00	90.00	359.60	13,335.00	759.94	-298.10	384,463.23	791,968.24	32.054388	-103.524350
14,500.00	90.00	359.60	13,335.00	859.94	-298.80	384,563.23	791,967.54	32.054663	-103.524350
14,600.00	90.00	359.60	13,335.00	959.94	-299.51	384,663.22	791,966.83	32.054938	-103.524350
14,700.00	90.00	359.60	13,335.00	1,059.93	-300.21	384,763.22	791,966.13	32.055212	-103.524350
14,800.00	90.00	359.60	13,335.00	1,159.93	-300.92	384,863.22	791,965.42	32.055487	-103.524350
14,900.00	90.00	359.60	13,335.00	1,259.93	-301.62	384,963.22	791,964.72	32.055762	-103.524349
15,000.00	90.00	359.60	13,335.00	1,359.93	-302.33	385,063.21	791,964.01	32.056037	-103.524349
15,100.00	90.00	359.60	13,335.00	1,459.92	-303.03	385,163.21	791,963.31	32.056312	-103.524349
15,200.00	90.00	359.60	13,335.00	1,559.92	-303.74	385,263.21	791,962.60	32.056587	-103.524349
15,300.00	90.00	359.60	13,335.00	1,659.92	-304.44	385,363.20	791,961.90	32.056862	-103.524349
15,400.00	90.00	359.60	13,335.00	1,759.92	-305.15	385,463.20	791,961.19	32.057137	-103.524349

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Seawolf 12-1 Fed 4H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3376.30ft
Project:	Lea County (NAD83 New Mexico East)	**MD Reference:**	RKB @ 3376.30ft
Site:	Sec 12-T26S-R33E	**North Reference:**	Grid
Well:	Seawolf 12-1 Fed 4H	**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
15,500.00	90.00	359.60	13,335.00	1,859.91	-305.85	385,563.20	791,960.49	32.057411	-103.524349
15,600.00	90.00	359.60	13,335.00	1,959.91	-306.56	385,663.20	791,959.78	32.057686	-103.524348
15,700.00	90.00	359.60	13,335.00	2,059.91	-307.26	385,763.19	791,959.08	32.057961	-103.524348
15,800.00	90.00	359.60	13,335.00	2,159.91	-307.97	385,863.19	791,958.37	32.058236	-103.524348
15,900.00	90.00	359.60	13,335.00	2,259.90	-308.67	385,963.19	791,957.67	32.058511	-103.524348
16,000.00	90.00	359.60	13,335.00	2,359.90	-309.38	386,063.19	791,956.96	32.058786	-103.524348
16,100.00	90.00	359.60	13,335.00	2,459.90	-310.08	386,163.18	791,956.26	32.059061	-103.524348
16,200.00	90.00	359.60	13,335.00	2,559.90	-310.79	386,263.18	791,955.55	32.059336	-103.524348
16,300.00	90.00	359.60	13,335.00	2,659.89	-311.49	386,363.18	791,954.85	32.059610	-103.524347
16,400.00	90.00	359.60	13,335.00	2,759.89	-312.20	386,463.18	791,954.14	32.059885	-103.524347
16,500.00	90.00	359.60	13,335.00	2,859.89	-312.90	386,563.17	791,953.43	32.060160	-103.524347
16,600.00	90.00	359.60	13,335.00	2,959.89	-313.61	386,663.17	791,952.73	32.060435	-103.524347
16,700.00	90.00	359.60	13,335.00	3,059.88	-314.31	386,763.17	791,952.02	32.060710	-103.524347
16,800.00	90.00	359.60	13,335.00	3,159.88	-315.02	386,863.16	791,951.32	32.060985	-103.524347
16,900.00	90.00	359.60	13,335.00	3,259.88	-315.72	386,963.16	791,950.61	32.061260	-103.524347
17,000.00	90.00	359.60	13,335.00	3,359.88	-316.43	387,063.16	791,949.91	32.061535	-103.524346
17,100.00	90.00	359.60	13,335.00	3,459.87	-317.13	387,163.16	791,949.20	32.061810	-103.524346
17,200.00	90.00	359.60	13,335.00	3,559.87	-317.84	387,263.15	791,948.50	32.062084	-103.524346
17,300.00	90.00	359.60	13,335.00	3,659.87	-318.54	387,363.15	791,947.79	32.062359	-103.524346
17,400.00	90.00	359.60	13,335.00	3,759.87	-319.25	387,463.15	791,947.09	32.062634	-103.524346
17,500.00	90.00	359.60	13,335.00	3,859.86	-319.95	387,563.15	791,946.38	32.062909	-103.524346
17,600.00	90.00	359.60	13,335.00	3,959.86	-320.66	387,663.14	791,945.68	32.063184	-103.524346
17,700.00	90.00	359.60	13,335.00	4,059.86	-321.37	387,763.14	791,944.97	32.063459	-103.524345
17,800.00	90.00	359.60	13,335.00	4,159.86	-322.07	387,863.14	791,944.27	32.063734	-103.524345
17,900.00	90.00	359.60	13,335.00	4,259.85	-322.78	387,963.13	791,943.56	32.064009	-103.524345
18,000.00	90.00	359.60	13,335.00	4,359.85	-323.48	388,063.13	791,942.86	32.064283	-103.524345
18,100.00	90.00	359.60	13,335.00	4,459.85	-324.19	388,163.13	791,942.15	32.064558	-103.524345
18,200.00	90.00	359.60	13,335.00	4,559.85	-324.89	388,263.13	791,941.45	32.064833	-103.524345
18,300.00	90.00	359.60	13,335.00	4,659.84	-325.60	388,363.12	791,940.74	32.065108	-103.524345
18,340.00	90.00	359.60	13,335.00	4,699.84	-325.88	388,403.12	791,940.46	32.065218	-103.524344
Cross section @ 18340' MD, 0' FSL, 2108' FEL									
18,400.00	90.00	359.60	13,335.00	4,759.84	-326.30	388,463.12	791,940.04	32.065383	-103.524344
18,500.00	90.00	359.60	13,335.00	4,859.84	-327.01	388,563.12	791,939.33	32.065658	-103.524344
18,600.00	90.00	359.60	13,335.00	4,959.84	-327.71	388,663.12	791,938.63	32.065933	-103.524344
18,700.00	90.00	359.60	13,335.00	5,059.84	-328.42	388,763.11	791,937.92	32.066208	-103.524344
18,800.00	90.00	359.60	13,335.00	5,159.83	-329.12	388,863.11	791,937.22	32.066482	-103.524344
18,900.00	90.00	359.60	13,335.00	5,259.83	-329.83	388,963.11	791,936.51	32.066757	-103.524344
19,000.00	90.00	359.60	13,335.00	5,359.83	-330.53	389,063.11	791,935.81	32.067032	-103.524344
19,100.00	90.00	359.60	13,335.00	5,459.83	-331.24	389,163.10	791,935.10	32.067307	-103.524343
19,200.00	90.00	359.60	13,335.00	5,559.82	-331.94	389,263.10	791,934.40	32.067582	-103.524343
19,300.00	90.00	359.60	13,335.00	5,659.82	-332.65	389,363.10	791,933.69	32.067857	-103.524343
19,400.00	90.00	359.60	13,335.00	5,759.82	-333.35	389,463.09	791,932.99	32.068132	-103.524343
19,500.00	90.00	359.60	13,335.00	5,859.82	-334.06	389,563.09	791,932.28	32.068407	-103.524343
19,600.00	90.00	359.60	13,335.00	5,959.81	-334.76	389,663.09	791,931.58	32.068681	-103.524343
19,700.00	90.00	359.60	13,335.00	6,059.81	-335.47	389,763.09	791,930.87	32.068956	-103.524343
19,800.00	90.00	359.60	13,335.00	6,159.81	-336.17	389,863.08	791,930.17	32.069231	-103.524342
19,900.00	90.00	359.60	13,335.00	6,259.81	-336.88	389,963.08	791,929.46	32.069506	-103.524342
20,000.00	90.00	359.60	13,335.00	6,359.80	-337.58	390,063.08	791,928.76	32.069781	-103.524342
20,100.00	90.00	359.60	13,335.00	6,459.80	-338.29	390,163.08	791,928.05	32.070056	-103.524342
20,200.00	90.00	359.60	13,335.00	6,559.80	-338.99	390,263.07	791,927.35	32.070331	-103.524342
20,300.00	90.00	359.60	13,335.00	6,659.80	-339.70	390,363.07	791,926.64	32.070606	-103.524342
20,400.00	90.00	359.60	13,335.00	6,759.79	-340.40	390,463.07	791,925.93	32.070880	-103.524342
20,500.00	90.00	359.60	13,335.00	6,859.79	-341.11	390,563.07	791,925.23	32.071155	-103.524341
20,600.00	90.00	359.60	13,335.00	6,959.79	-341.81	390,663.06	791,924.52	32.071430	-103.524341

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Seawolf 12-1 Fed 4H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3376.30ft
Project:	Lea County (NAD83 New Mexico East)	**MD Reference:**	RKB @ 3376.30ft
Site:	Sec 12-T26S-R33E	**North Reference:**	Grid
Well:	Seawolf 12-1 Fed 4H	**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
20,700.00	90.00	359.60	13,335.00	7,059.79	-342.52	390,763.06	791,923.82	32.071705	-103.524341
20,800.00	90.00	359.60	13,335.00	7,159.78	-343.22	390,863.06	791,923.11	32.071980	-103.524341
20,900.00	90.00	359.60	13,335.00	7,259.78	-343.93	390,963.05	791,922.41	32.072255	-103.524341
21,000.00	90.00	359.60	13,335.00	7,359.78	-344.63	391,063.05	791,921.70	32.072530	-103.524341
21,100.00	90.00	359.60	13,335.00	7,459.78	-345.34	391,163.05	791,921.00	32.072805	-103.524341
21,200.00	90.00	359.60	13,335.00	7,559.77	-346.04	391,263.05	791,920.29	32.073079	-103.524340
21,300.00	90.00	359.60	13,335.00	7,659.77	-346.75	391,363.04	791,919.59	32.073354	-103.524340
21,400.00	90.00	359.60	13,335.00	7,759.77	-347.45	391,463.04	791,918.88	32.073629	-103.524340
21,500.00	90.00	359.60	13,335.00	7,859.77	-348.16	391,563.04	791,918.18	32.073904	-103.524340
21,600.00	90.00	359.60	13,335.00	7,959.76	-348.86	391,663.04	791,917.47	32.074179	-103.524340
21,700.00	90.00	359.60	13,335.00	8,059.76	-349.57	391,763.03	791,916.77	32.074454	-103.524340
21,800.00	90.00	359.60	13,335.00	8,159.76	-350.28	391,863.03	791,916.06	32.074729	-103.524339
21,900.00	90.00	359.60	13,335.00	8,259.76	-350.98	391,963.03	791,915.36	32.075004	-103.524339
22,000.00	90.00	359.60	13,335.00	8,359.75	-351.69	392,063.02	791,914.65	32.075278	-103.524339
22,100.00	90.00	359.60	13,335.00	8,459.75	-352.39	392,163.02	791,913.95	32.075553	-103.524339
22,200.00	90.00	359.60	13,335.00	8,559.75	-353.10	392,263.02	791,913.24	32.075828	-103.524339
22,300.00	90.00	359.60	13,335.00	8,659.75	-353.80	392,363.02	791,912.54	32.076103	-103.524339
22,400.00	90.00	359.60	13,335.00	8,759.74	-354.51	392,463.01	791,911.83	32.076378	-103.524339
22,500.00	90.00	359.60	13,335.00	8,859.74	-355.21	392,563.01	791,911.13	32.076653	-103.524338
22,600.00	90.00	359.60	13,335.00	8,959.74	-355.92	392,663.01	791,910.42	32.076928	-103.524338
22,700.00	90.00	359.60	13,335.00	9,059.74	-356.62	392,763.01	791,909.72	32.077203	-103.524338
22,800.00	90.00	359.60	13,335.00	9,159.73	-357.33	392,863.00	791,909.01	32.077478	-103.524338
22,900.00	90.00	359.60	13,335.00	9,259.73	-358.03	392,963.00	791,908.31	32.077752	-103.524338
23,000.00	90.00	359.60	13,335.00	9,359.73	-358.74	393,063.00	791,907.60	32.078027	-103.524338
23,100.00	90.00	359.60	13,335.00	9,459.73	-359.44	393,163.00	791,906.90	32.078302	-103.524338
23,200.00	90.00	359.60	13,335.00	9,559.72	-360.15	393,262.99	791,906.19	32.078577	-103.524337
23,300.00	90.00	359.60	13,335.00	9,659.72	-360.85	393,362.99	791,905.49	32.078852	-103.524337
23,400.00	90.00	359.60	13,335.00	9,759.72	-361.56	393,462.99	791,904.78	32.079127	-103.524337
23,500.00	90.00	359.60	13,335.00	9,859.72	-362.26	393,562.98	791,904.08	32.079402	-103.524337
23,522.00	90.00	359.60	13,335.00	9,881.72	-362.42	393,584.98	791,903.92	32.079462	-103.524337
LTP @ 23522' MD, 100' FNL, 2108' FEL									
23,600.00	90.00	359.60	13,335.00	9,959.71	-362.97	393,662.98	791,903.37	32.079677	-103.524337
23,601.88	90.00	359.60	13,335.00	9,961.59	-362.98	393,664.86	791,903.36	32.079682	-103.524337
PBHL; 20' FNL, 2108' FEL									
23,601.89	90.00	359.60	13,335.00	9,961.60	-362.98	393,664.87	791,903.36	32.079682	-103.524337

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
Seawolf 12-1 Fed 4H	0.00	0.00	0.00	9,961.60	-362.98	393,664.87	791,903.36	32.079682	-103.524337
- plan misses target center by 9968.21ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Point									

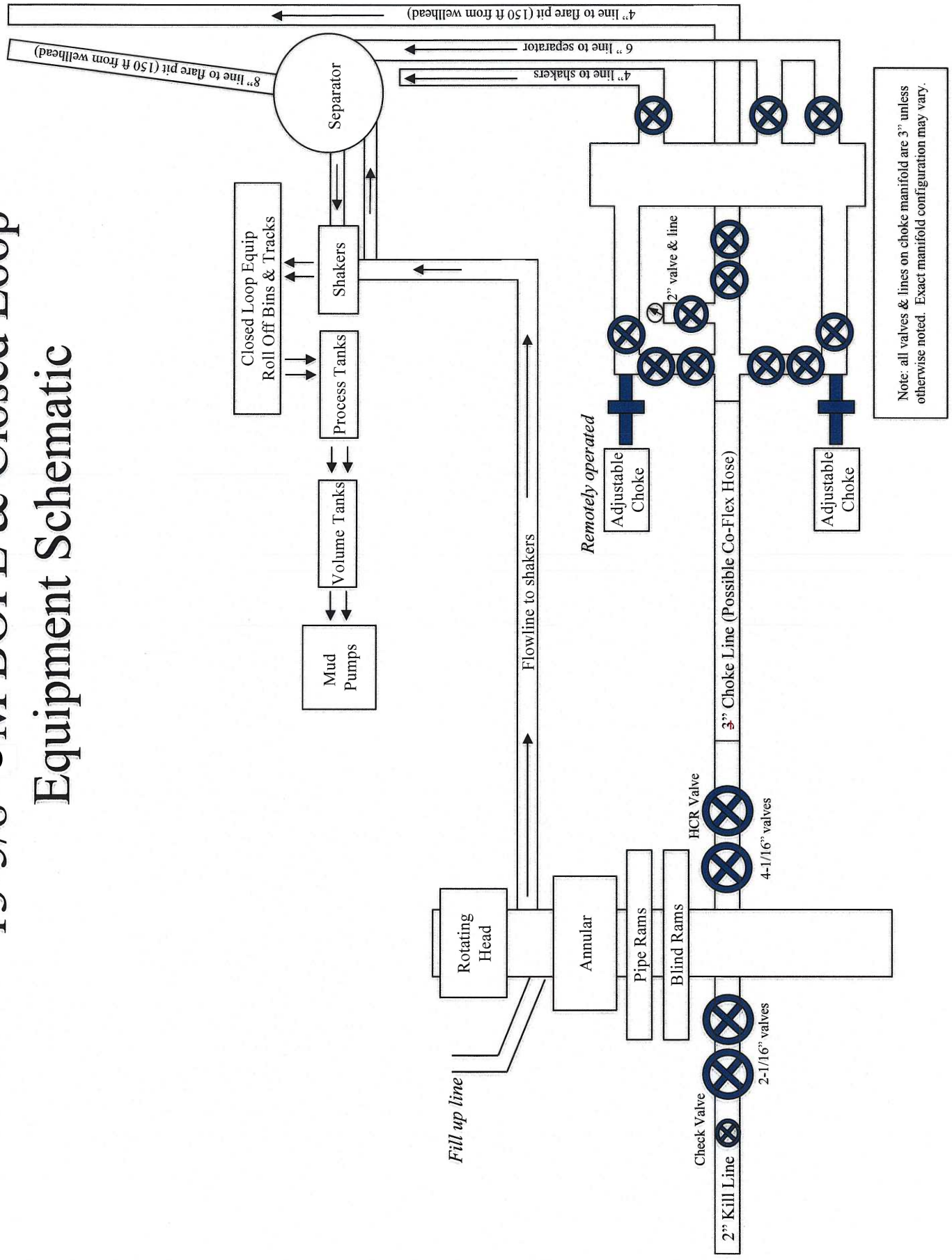
Planning Report - Geographic

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Seawolf 12-1 Fed 4H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3376.30ft
Project:	Lea County (NAD83 New Mexico East)	**MD Reference:**	RKB @ 3376.30ft
Site:	Sec 12-T26S-R33E	**North Reference:**	Grid
Well:	Seawolf 12-1 Fed 4H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

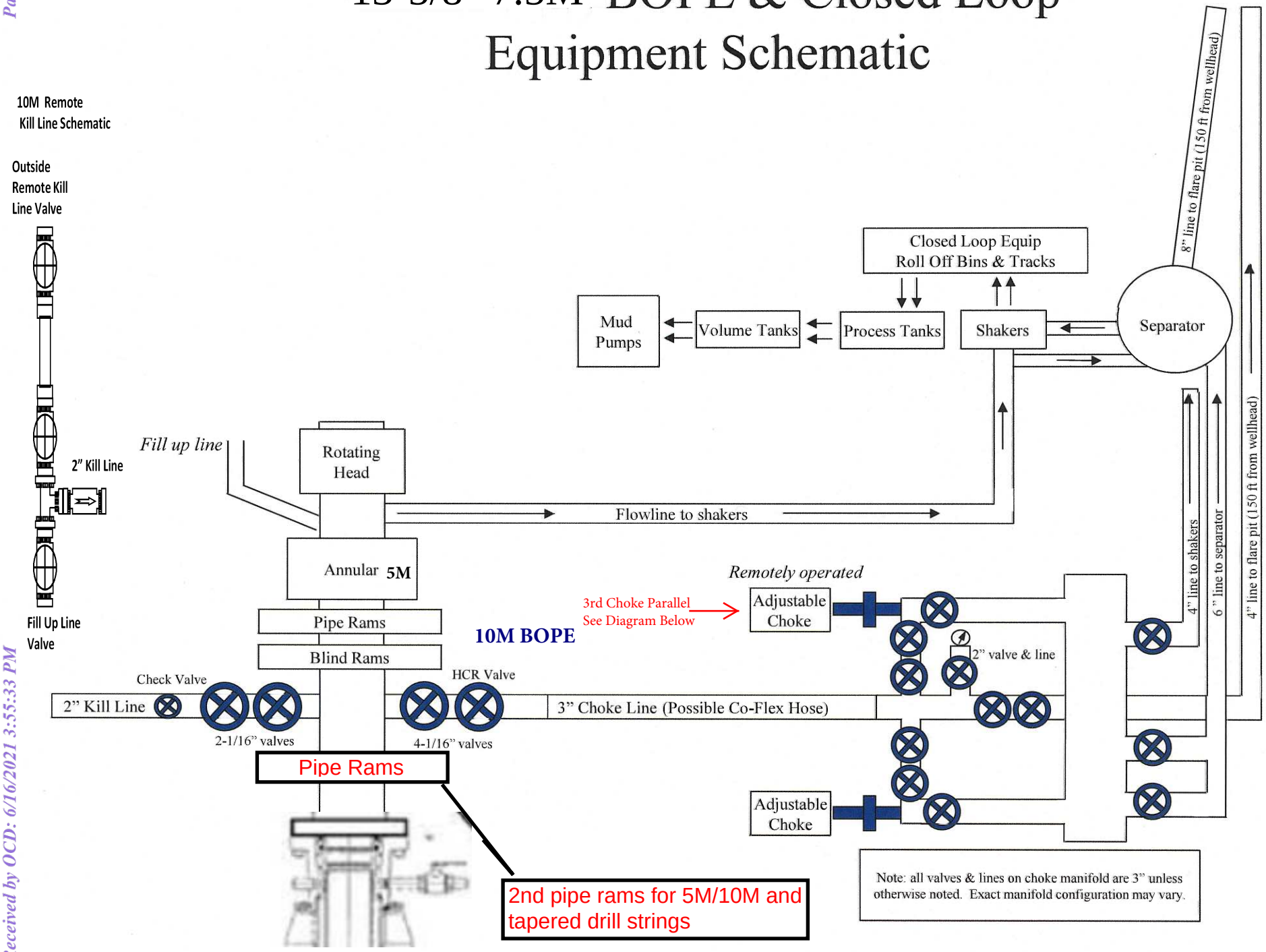
Plan Annotations

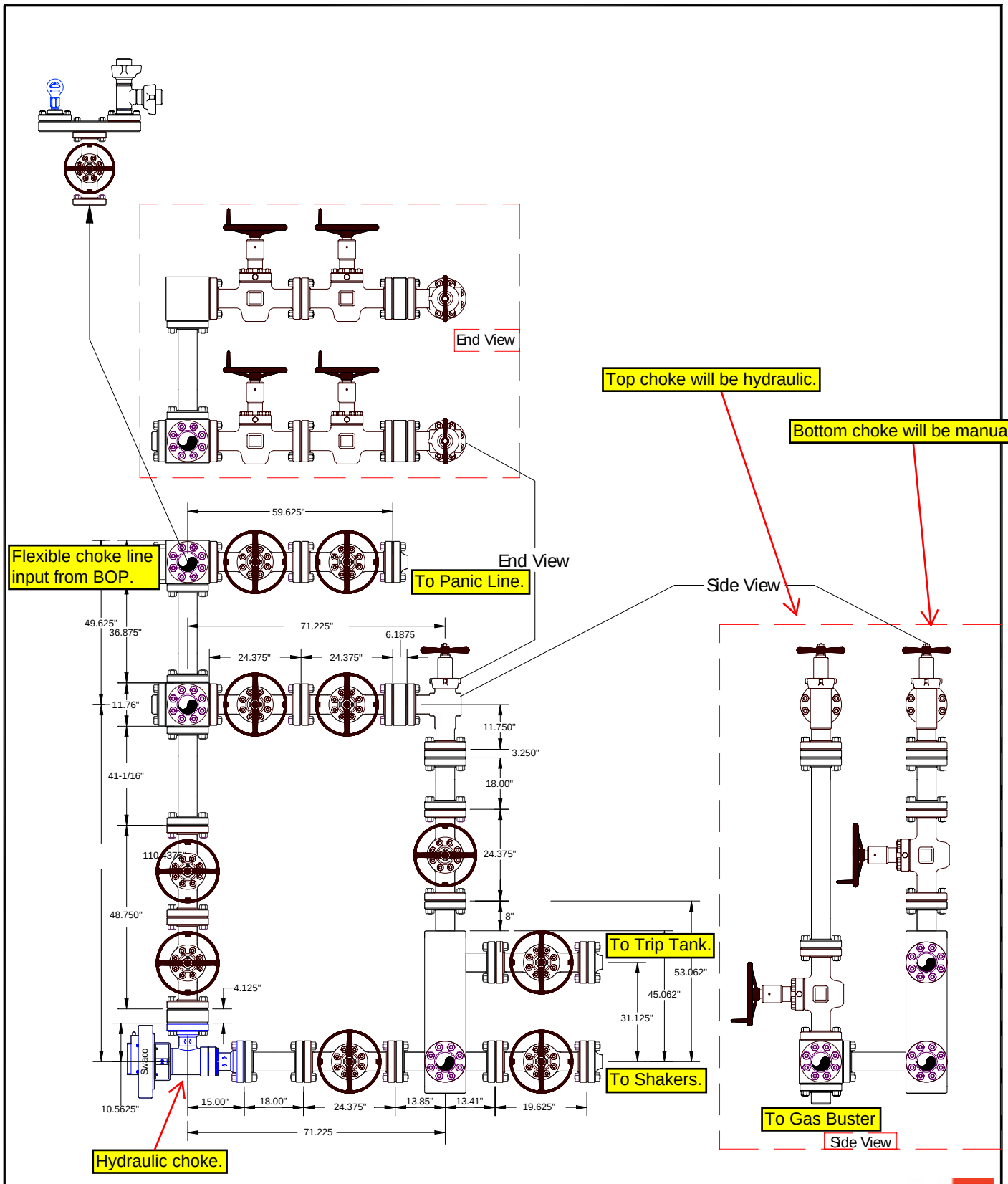
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
12,783.00	12,762.06	-530.00	-289.00	KOP @ 12783' MD, 50' FSL, 2108' FEL
13,024.00	12,996.01	-480.05	-289.35	FTP @ 13024' MD, 100' FSL, 2108' FEL
18,340.00	13,335.00	4,699.84	-325.88	Cross section @ 18340' MD, 0' FSL, 2108' FEL
23,522.00	13,335.00	9,881.72	-362.42	LTP @ 23522' MD, 100' FNL, 2108' FEL
23,601.88	13,335.00	9,961.59	-362.98	PBHL; 20' FNL, 2108' FEL

13-5/8" 5M BOPE & Closed Loop Equipment Schematic



13-5/8" 7.5M BOPE & Closed Loop Equipment Schematic




End View
Top choke will be hydraulic.
Bottom choke will be manual.
59.625"
Flexible choke line input from BOP.
End View
To Panic Line.
Side View
49.625"
36.875"
71.225"
6.1875
24.375"
24.375"
11.76"
11.750"
3.250"
18.00"
41-1/16"
24.375"
48.750"
8"
To Trip Tank.
53.062"
45.062"
31.125"
4.125"
To Shakers.
10.5625"
15.00"
18.00"
24.375"
13.85"
13.41"
19.625"
71.225
To Gas Buster
Side View
Hydraulic choke.
Helmerich & Payne
Flex 3 Rig w/ 3 Chokes
devon
Name: Mike Potts
Date: 6-23-2010
Working Pressure: 10M
J-5132-E

Devon Energy Annular Preventer Summary

1. Component and Preventer Compatibility Table

The table below, which covers the drilling and casing of the 10M MASP portion of the well, outlines the tubulars and the compatible preventers in use. This table, combined with the mud program, documents that two barriers to flow can be maintained at all times, independent of the rating of the annular preventer.

6-3/4" Production hole section, 10M requirement

Component	OD	Preventer	RWP
Drillpipe	4.5"	Fixed lower 4.5" Upper 4.5-7" VBR	10M
HWDP	4.5"	Fixed lower 4.5" Upper 4.5-7" VBR	10M
Drill collars and MWD tools	4.75"	Upper 4.5-7" VBR	10M
Mud Motor	4.75"	Upper 4.5-7" VBR	10M
Production casing	5.5"	Upper 4.5-7" VBR	10M
ALL	0-13-5/8"	Annular	5M
Open-hole	-	Blind Rams	10M

VBR = Variable Bore Ram. Compatible range listed in chart.

2. Well Control Procedures

Well control procedures are specific to the rig equipment and the operation at the time the kick occurs. Below are the minimal high-level tasks prescribed to assure a proper shut-in while drilling, tripping, running casing, pipe out of the hole (open hole), and moving the BHA through the BOPs. The pressure at which control is swapped from the annular to another compatible ram is variable, but the operator will document in the submission their operating pressure limit. The operator may chose an operating pressure less than or equal to RWP, but in no case will it exceed the RWP of the annular preventer.

General Procedure While Drilling

1. Sound alarm (alert crew)
2. Space out drill string
3. Shut down pumps (stop pumps and rotary)
4. Shut-in Well (uppermost applicable BOP, typically annular preventer first. HCR and choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
    a. SIDPP and SICP
    b. Pit gain
    c. Time
8. Regroup and identify forward plan
9. If pressure has built or is anticipated during the kill to reach the RWP of the annular preventer, confirm spacing and swap to the upper pipe ram.

Devon Energy Annular Preventer Summary

General Procedure While Tripping

1. Sound alarm (alert crew)
2. Stab full opening safety valve and close
3. Space out drill string
4. Shut-in (uppermost applicable BOP, typically annular preventer first. HCR and choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
    a. SIDPP and SICP
    b. Pit gain
    c. Time
8. Regroup and identify forward plan
9. If pressure has built or is anticipated during the kill to reach the RWP of the annular preventer, confirm spacing and swap to the upper pipe ram.

General Procedure While Running Casing

1. Sound alarm (alert crew)
2. Stab crossover and full opening safety valve and close
3. Space out string
4. Shut-in (uppermost applicable BOP, typically annular preventer first. HCR and choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
    a. SIDPP and SICP
    b. Pit gain
    c. Time
8. Regroup and identify forward plan
9. If pressure has built or is anticipated during the kill to reach the RWP of the annular preventer, confirm spacing and swap to compatible pipe ram.

General Procedure With No Pipe In Hole (Open Hole)

1. Sound alarm (alert crew)
2. Shut-in with blind rams or BSR. (HCR and choke will already be in the closed position.)
3. Confirm shut-in
4. Notify toolpusher/company representative
5. Read and record the following:
    a. SICP
    b. Pit gain
    c. Time
6. Regroup and identify forward plan

Devon Energy Annular Preventer Summary

General Procedures While Pulling BHA thru Stack

1. PRIOR to pulling last joint of drillpipe thru the stack.
    a. Perform flowcheck, if flowing:
    b. Sound alarm (alert crew)
    c. Stab full opening safety valve and close
    d. Space out drill string with tool joint just beneath the upper pipe ram.
    e. Shut-in using upper pipe ram. (HCR and choke will already be in the closed position.)
    f. Confirm shut-in
    g. Notify toolpusher/company representative
    h. Read and record the following:
        i. SIDPP and SICP
        ii. Pit gain
        iii. Time
    i. Regroup and identify forward plan

2. With BHA in the stack and compatible ram preventer and pipe combo immediately available.
    a. Sound alarm (alert crew)
    b. Stab crossover and full opening safety valve and close
    c. Space out drill string with upset just beneath the compatible pipe ram.
    d. Shut-in using compatible pipe ram. (HCR and choke will already be in the closed position.)
    e. Confirm shut-in
    f. Notify toolpusher/company representative
    g. Read and record the following:
        i. SIDPP and SICP
        ii. Pit gain
        iii. Time
    h. Regroup and identify forward plan

3. With BHA in the stack and NO compatible ram preventer and pipe combo immediately available.
    a. Sound alarm (alert crew)
    b. If possible to pick up high enough, pull string clear of the stack and follow “Open Hole” scenario.
    c. If impossible to pick up high enough to pull the string clear of the stack:
    d. Stab crossover, make up one joint/stand of drillpipe, and full opening safety valve and close
    e. Space out drill string with tooljoint just beneath the upper pipe ram.
    f. Shut-in using upper pipe ram. (HCR and choke will already be in the closed position.)
    g. Confirm shut-in
    h. Notify toolpusher/company representative
    i. Read and record the following:
        i. SIDPP and SICP
        ii. Pit gain
        iii. Time
    j. Regroup and identify forward plan

A multibowl wellhead may be used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.

Devon proposes using a multi-bowl wellhead assembly. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 5000 (5M) psi.

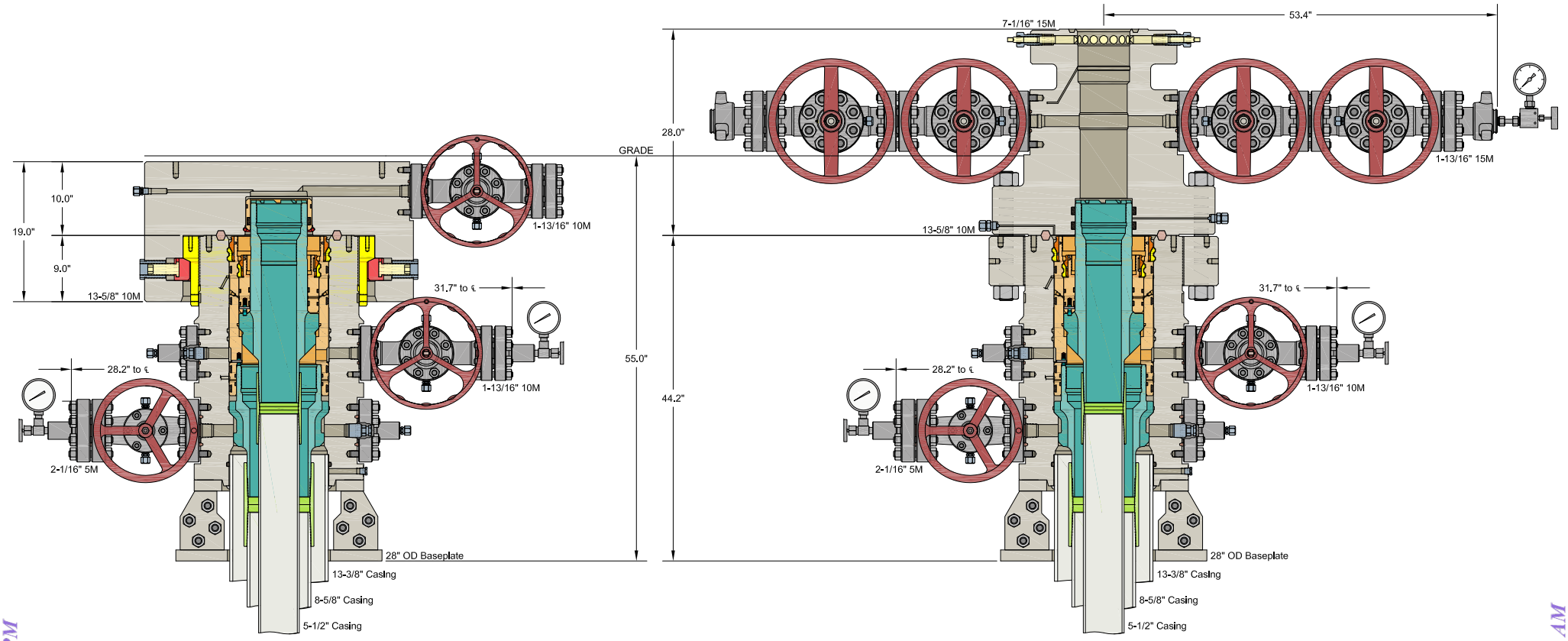
- Wellhead will be installed by wellhead representatives.
- If the welding is performed by a third party, the wellhead representative will monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
- Wellhead representative will install the test plug for the initial BOP test.
- Wellhead company will install a solid steel body pack-off to completely isolate the lower head after cementing intermediate casing. After installation of the pack-off, the pack-off and the lower flange will be tested to 5M, as shown on the attached schematic. Everything above the pack-off will not have been altered whatsoever from the initial nipple up. Therefore the BOP components will not be retested at that time.
- If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head will be cut and top out operations will be conducted.
- Devon will pressure test all seals above and below the mandrel (but still above the casing) to full working pressure rating.
- Devon will test the casing to 0.22 psi/ft or 1500 psi, whichever is greater, as per Onshore Order #2.

After running the surface casing, a 13-5/8" BOP/BOPE system with a minimum rating of 5M will be installed on the wellhead system and will undergo a 250 psi low pressure test followed by a 5,000 psi high pressure test. The 5,000 psi high and 250 psi low test will cover testing requirements a maximum of 30 days, as per Onshore Order #2. If the well is not complete within 30 days of this BOP test, another full BOP test will be conducted, as per Onshore Order #2.

After running the intermediate casing with a mandrel hanger, the 13-5/8" BOP/BOPE system with a minimum rating of 10M will be installed and tested, with 5M annular being tested to 100% of rated working pressure.

The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 10,000 psi WP.

Devon's proposed wellhead manufactures will be FMC Technologies, Cactus Wellhead, or Cameron.



CACTUS WELLHEAD LLC

DEVON ENERGY CORPORATIO

13-3/8" x 8-5/8" x 5-1/2" 5M MBU-3T Wellhead System
With 8-5/8" & 5-1/2" Pin Down Rotating Mandrel Hangers
And 13-5/8" 10M x 7-1/16" 15M CTH-P-DBLHPS Tubing Head

DRAWN	DLE	10MAY18
APPRV		
DRAWING NO.	ODE0002309	

Casing Assumptions and Load Cases

Production

All casing design assumptions were ran in Stress Check to determine safety factor which meet or exceed both Devon Energy and BLM minimum requirements. All casing strings will be filled while running in hole in order to not exceed collapse rating of the pipe.

Production Casing Burst Design		
Load Case	**External Pressure**	**Internal Pressure**
Pressure Test	Formation Pore Pressure	Fluid in hole (water or produced water) + test psi
Tubing Leak	Formation Pore Pressure	Packer @ KOP, leak below surface 8.6 ppg packer fluid
Stimulation	Formation Pore Pressure	Max frac pressure with heaviest frac fluid

Production Casing Collapse Design		
Load Case	**External Pressure**	**Internal Pressure**
Full Evacuation	Water gradient in cement, mud above TOC.	None
Cementing	Wet cement weight	Water (8.33ppg)

Production Casing Tension Design	
Load Case	**Assumptions**
Overpull	100kips
Runing in hole	2 ft/s
Service Loads	N/A

Casing Assumptions and Load Cases

Production

All casing design assumptions were ran in Stress Check to determine safety factor which meet or exceed both Devon Energy and BLM minimum requirements. All casing strings will be filled while running in hole in order to not exceed collapse rating of the pipe.

Production Casing Burst Design		
Load Case	**External Pressure**	**Internal Pressure**
Pressure Test	Formation Pore Pressure	Fluid in hole (water or produced water) + test psi
Tubing Leak	Formation Pore Pressure	Packer @ KOP, leak below surface 8.6 ppg packer fluid
Stimulation	Formation Pore Pressure	Max frac pressure with heaviest frac fluid

Production Casing Collapse Design		
Load Case	**External Pressure**	**Internal Pressure**
Full Evacuation	Water gradient in cement, mud above TOC.	None
Cementing	Wet cement weight	Water (8.33ppg)

Production Casing Tension Design	
Load Case	**Assumptions**
Overpull	100kips
Runing in hole	2 ft/s
Service Loads	N/A

Casing Assumptions and Load Cases

Production

All casing design assumptions were ran in Stress Check to determine safety factor which meet or exceed both Devon Energy and BLM minimum requirements. All casing strings will be filled while running in hole in order to not exceed collapse rating of the pipe.

Production Casing Burst Design		
Load Case	**External Pressure**	**Internal Pressure**
Pressure Test	Formation Pore Pressure	Fluid in hole (water or produced water) + test psi
Tubing Leak	Formation Pore Pressure	Packer @ KOP, leak below surface 8.6 ppg packer fluid
Stimulation	Formation Pore Pressure	Max frac pressure with heaviest frac fluid

Production Casing Collapse Design		
Load Case	**External Pressure**	**Internal Pressure**
Full Evacuation	Water gradient in cement, mud above TOC.	None
Cementing	Wet cement weight	Water (8.33ppg)

Production Casing Tension Design	
Load Case	**Assumptions**
Overpull	100kips
Runing in hole	2 ft/s
Service Loads	N/A

Casing Assumptions and Load Cases

Surface

All casing design assumptions were ran in Stress Check to determine safety factor which meet or exceed both Devon Energy and BLM minimum requirements. All casing strings will be filled while running in hole in order to not exceed collapse rating of the pipe.

Surface Casing Burst Design		
Load Case	**External Pressure**	**Internal Pressure**
Pressure Test	Formation Pore Pressure	Max mud weight of next hole-section plus Test psi
Drill Ahead	Formation Pore Pressure	Max mud weight of next hole section
Displace to Gas	Formation Pore Pressure	Dry gas from next casing point

Surface Casing Collapse Design		
Load Case	**External Pressure**	**Internal Pressure**
Full Evacuation	Water gradient in cement, mud above TOC	None
Cementing	Wet cement weight	Water (8.33ppg)

Surface Casing Tension Design	
Load Case	**Assumptions**
Overpull	100kips
Runing in hole	3 ft/s
Service Loads	N/A

U. S. Steel Tubular Products

13.375" 48.00lbs/ft (0.330" Wall) H40

1/8/2019 12:38:52 PM

MECHANICAL PROPERTIES	Pipe	BTC	LTC	STC	
Minimum Yield Strength	40,000	--	--	--	psi
Maximum Yield Strength	80,000	--	--	--	psi
Minimum Tensile Strength	60,000	--	--	--	psi
DIMENSIONS	**Pipe**	**BTC**	**LTC**	**STC**	
Outside Diameter	13.375	--	--	14.375	in.
Wall Thickness	0.330	--	--	--	in.
Inside Diameter	12.715	--	--	12.715	in.
Standard Drift	12.559	12.559	--	12.559	in.
Alternate Drift	--	--	--	--	in.
Nominal Linear Weight, T&C	48.00	--	--	--	lbs/ft
Plain End Weight	46.02	--	--	--	lbs/ft
PERFORMANCE	**Pipe**	**BTC**	**LTC**	**STC**	
Minimum Collapse Pressure	740	740	--	740	psi
Minimum Internal Yield Pressure	1,730	1,730	--	1,730	psi
Minimum Pipe Body Yield Strength	541	--	--	--	1,000 lbs
Joint Strength	--	--	--	322	1,000 lbs
Reference Length	--	--	--	4,473	ft
MAKE-UP DATA	**Pipe**	**BTC**	**LTC**	**STC**	
Make-Up Loss	--	--	--	3.50	in.
Minimum Make-Up Torque	--	--	--	2,420	ft-lbs
Maximum Make-Up Torque	--	--	--	4,030	ft-lbs

U. S. Steel Tubular Products
460 Wildwood Forest Drive, Suite 300S
Spring, Texas 77380

1-877-893-9461
connections@uss.com
www.usstubular.com

Casing Assumptions and Load Cases

Intermediate

All casing design assumptions were ran in Stress Check to determine safety factor which meet or exceed both Devon Energy and BLM minimum requirements. All casing strings will be filled while running in hole in order to not exceed collapse rating of the pipe.

Intermediate Casing Burst Design		
Load Case	**External Pressure**	**Internal Pressure**
Pressure Test	Formation Pore Pressure	Max mud weight of next hole-section plus Test psi
Drill Ahead	Formation Pore Pressure	Max mud weight of next hole section
Fracture @ Shoe	Formation Pore Pressure	Dry gas

Intermediate Casing Collapse Design		
Load Case	**External Pressure**	**Internal Pressure**
Full Evacuation	Water gradient in cement, mud above TOC	None
Cementing	Wet cement weight	Water (8.33ppg)

Intermediate Casing Tension Design	
Load Case	**Assumptions**
Overpull	100kips
Runing in hole	2 ft/s
Service Loads	N/A

TEC-LOCK WEDGE

8.625" 32.00 LB/FT (.352" Wall)
BORUSAN MANNESMANNP110 HSCY

Pipe Body Data

Nominal OD:	8.625	in
Nominal Wall:	.352	in
Nominal Weight:	32.00	lb/ft
Plain End Weight:	31.13	lb/ft
Material Grade:	P110 HSCY	
Mill/Specification:	BORUSAN MANNESMANN	
Yield Strength:	125,000	psi
Tensile Strength:	125,000	psi
Nominal ID:	7.921	in
API Drift Diameter:	7.796	in
Special Drift Diameter:	7.875	in
RBW:	87.5 %	
Body Yield:	1,144,000	lbf
Burst:	8,930	psi
Collapse:	4,230	psi

Connection Data

Standard OD:	9.000	in
Pin Bored ID:	7.921	in
Critical Section Area:	8.61433	in^2
Tensile Efficiency:	94.2 %	
Compressive Efficiency:	100.0 %	
Longitudinal Yield Strength:	1,077,000	lbf
Compressive Limit:	1,144,000	lbf
Internal Pressure Rating:	8,930	psi
External Pressure Rating:	4,230	psi
Maximum Bend:	62.6	°/100

Operational Data

Minimum Makeup Torque:	29,900	ft*lbf
Optimum Makeup Torque:	37,375	ft*lbf
Maximum Makeup Torque:	80,900	ft*lbf
Minimum Yield:	89,900	ft*lbf
Makeup Loss:	5.97	in

Notes

Operational Torque is equivalent to the Maximum Make-Up Torque.

HUNTING

Generated on 9/18/2018 1:14:29 PM

Please visit http://www.huntingplc.com for the latest technical information.

Casing Assumptions and Load Cases

Production

All casing design assumptions were ran in Stress Check to determine safety factor which meet or exceed both Devon Energy and BLM minimum requirements. All casing strings will be filled while running in hole in order to not exceed collapse rating of the pipe.

Production Casing Burst Design		
Load Case	**External Pressure**	**Internal Pressure**
Pressure Test	Formation Pore Pressure	Fluid in hole (water or produced water) + test psi
Tubing Leak	Formation Pore Pressure	Packer @ KOP, leak below surface 8.6 ppg packer fluid
Stimulation	Formation Pore Pressure	Max frac pressure with heaviest frac fluid

Production Casing Collapse Design		
Load Case	**External Pressure**	**Internal Pressure**
Full Evacuation	Water gradient in cement, mud above TOC.	None
Cementing	Wet cement weight	Water (8.33ppg)

Production Casing Tension Design	
Load Case	**Assumptions**
Overpull	100kips
Runing in hole	2 ft/s
Service Loads	N/A

U. S. Steel Tubular Products

5.500" 17.00lbs/ft (0.304" Wall) P110

2/21/2019 8:12:22 AM

MECHANICAL PROPERTIES	Pipe	BTC	LTC	STC	
Minimum Yield Strength	110,000	--	--	--	psi
Maximum Yield Strength	140,000	--	--	--	psi
Minimum Tensile Strength	125,000	--	--	--	psi
DIMENSIONS	**Pipe**	**BTC**	**LTC**	**STC**	
Outside Diameter	5.500	6.050	6.050	--	in.
Wall Thickness	0.304	--	--	--	in.
Inside Diameter	4.892	4.892	4.892	--	in.
Standard Drift	4.767	4.767	4.767	--	in.
Alternate Drift	--	--	--	--	in.
Nominal Linear Weight, T&C	17.00	--	--	--	lbs/ft
Plain End Weight	16.89	--	--	--	lbs/ft
PERFORMANCE	**Pipe**	**BTC**	**LTC**	**STC**	
Minimum Collapse Pressure	7,480	7,480	7,480	--	psi
Minimum Internal Yield Pressure	10,640	10,640	10,640	--	psi
Minimum Pipe Body Yield Strength	546	--	--	--	1,000 lbs
Joint Strength	--	568	445	--	1,000 lbs
Reference Length	--	22,271	17,449	--	ft
MAKE-UP DATA	**Pipe**	**BTC**	**LTC**	**STC**	
Make-Up Loss	--	4.13	3.50	--	in.
Minimum Make-Up Torque	--	--	3,470	--	ft-lbs
Maximum Make-Up Torque	--	--	5,780	--	ft-lbs

U. S. Steel Tubular Products
460 Wildwood Forest Drive, Suite 300S
Spring, Texas 77380

1-877-893-9461
connections@uss.com
www.usstubular.com

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

Seawolf 12 Well Pad 1

Seawolf 12-1 Fed 20H
370 FSL, 410 FWL Section 12, T.26., R. 33E.
320 FNL, 770 FWL Section 1, T.26., R. 33E.

Seawolf 12-1 Fed 10H
370 FSL, 440 FWL Section 12, T.26., R. 33E.
320 FNL, 330 FWL Section 1, T.26., R. 33E.

Seawolf 12-1 Fed 12H
370 FSL, 470 FWL Section 12, T.26., R. 33E.
370 FNL, 1125 FWL Section 1, T.26., R. 33E.

Sea Wolf 12 Well Pad 2

Seawolf 12-1 Fed 2H
382 FSL, 2231 FWL Section 12, T.26., R. 33E.
550 FSL, 360 FWL Section 1, T.26., R. 33E.

Seawolf 12-1 Fed 3H
382 FSL, 2261 FWL Section 12, T.26., R. 33E.
20 FNL, 1766 FWL Section 1, T.26., R. 33E.

Seawolf 12-1 Fed 11H
562 FSL, 2271 FWL Section 12, T.26., R. 33E.
20 FNL, 1870 FWL Section 1, T.26., R. 33E.

Seawolf 12-1 Fed 14H
562 FSL, 2301 FWL Section 12, T.26., R. 33E.
22 FNL, 2061 FWL Section 1, T.26., R. 33E.

Seawolf 12 Well Pad 3

Seawolf 12-1 Fed 4H
580 FSL, 1819 FEL Section 12, T.26., R. 33E.
20 FNL, 2108 FEL Section 1, T.26., R. 33E.

Seawolf 12-1 Fed 5H
580 FSL, 1789 FEL Section 12, T.26., R. 33E.
20 FNL, 710 FEL Section 1, T.26., R. 33E.

Seawolf 12-1 Fed 15H
780 FSL, 1759 FEL Section 12, T.26., R. 33E.
20 FNL, 2064 FEL Section 1, T.26., R. 33E.

Seawolf 12-1 Fed 17H
780 FSL, 1669 FWL Section 12, T.26., R. 33E.
20 FNL, 1485 FEL Section 1, T.26., R. 33E.

Seawolf 12-1 Fed 13H
780 FSL, 1729 FWL Section 12, T.26., R. 33E.

Approval Date: 05/26/2021

20 FNL, 1870 FEL Section 1, T.26., R. 33E.

Seawolf 12-1 Fed 16H
780 FSL, 1699 FEL Section 12, T.26., R. 33E.
200 FNL, 330 FEL Section 1, T.26., R. 33E.

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.

Approval Date: 05/26/2021

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)

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.

Fence Requirement
Where entry is granted across a fence line, the fence must be braced and tied off on both sides of the passageway with H-braces prior to cutting. Once the work is completed, the fence will be restored to its prior condition, or better. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

The operator must contact the allotment holder prior to construction to identify the location of the pipeline. The operator must take measures to protect the pipeline from compression or other damages. If the pipeline is damaged or compromised in any way near the proposed project as a result of oil and gas activity, the operator is responsible for repairing the pipeline immediately. 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.

During construction, the proponent shall minimize disturbance to existing fences, water lines, troughs, windmills, and other improvements on public lands. The proponent 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 grazing permittee/allottee prior to disturbing any range improvement projects. 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.

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 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 to prevent geologic structure instabilities.
- Pad Berming to minimize effects of any spilled contaminates.

MITIGATING MEASURES for ROADS:

- Roads will be routed around sinkholes and other karst features to avoid or lessen the possibility of encountering near surface voids and to minimize changes to runoff or possible leaks and spills from entering karst systems.
- The BLM, Carlsbad Field Office, will be informed immediately if any subsurface drainage channels, cave passages, or voids are penetrated during construction and no further construction will be done until clearance has been issued by the Authorized Officer.
- Turnout ditches and drainage leadoffs will not be constructed in such a manner as to increase or decrease the natural flow of water into or out of cave or karst features.
- Special restoration stipulations or realignment may be required.
- All spills or leaks will be reported to the BLM immediately for their immediate and proper treatment.

KARST MITIGATING MEASURES for BURIED PIPELINES, ETC.:

- The BLM, Carlsbad Field Office, will be informed immediately if any subsurface drainage channels, passages, or voids are intersected by trenching, and no pipe will be laid in the trench at that point until clearance has been issued by the Authorized Officer.
- If a void is encountered alignments may be rerouted to avoid the karst feature and lessen; the potential of subsidence or collapse of karst features, buildup of toxic or combustible gas, or other possible impacts to cave and karst resources from the buried pipeline.
- Special restoration stipulations or realignment may be required at such intersections, if any.
- A leak detection plan **will be submitted to the BLM Carlsbad Field Office for approval** prior to pipeline installation. The method could incorporate gauges to detect pressure drops, situating values and lines so they can be visually inspected periodically or installing electronic sensors to alarm when a leak is present. The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event.
- Regular monitoring is required to quickly identify leaks for their immediate and proper treatment.

PRODUCTION MITIGATION

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

- Tank battery liners and berms to minimize the impact resulting from leaks.
- 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 line failures used in production or drilling.

Approval Date: 05/26/2021

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.

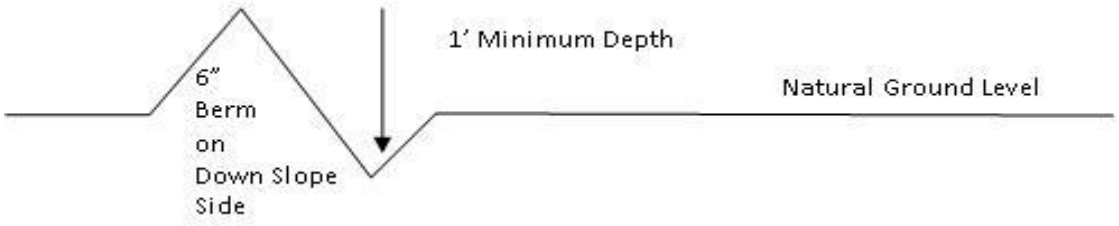
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

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

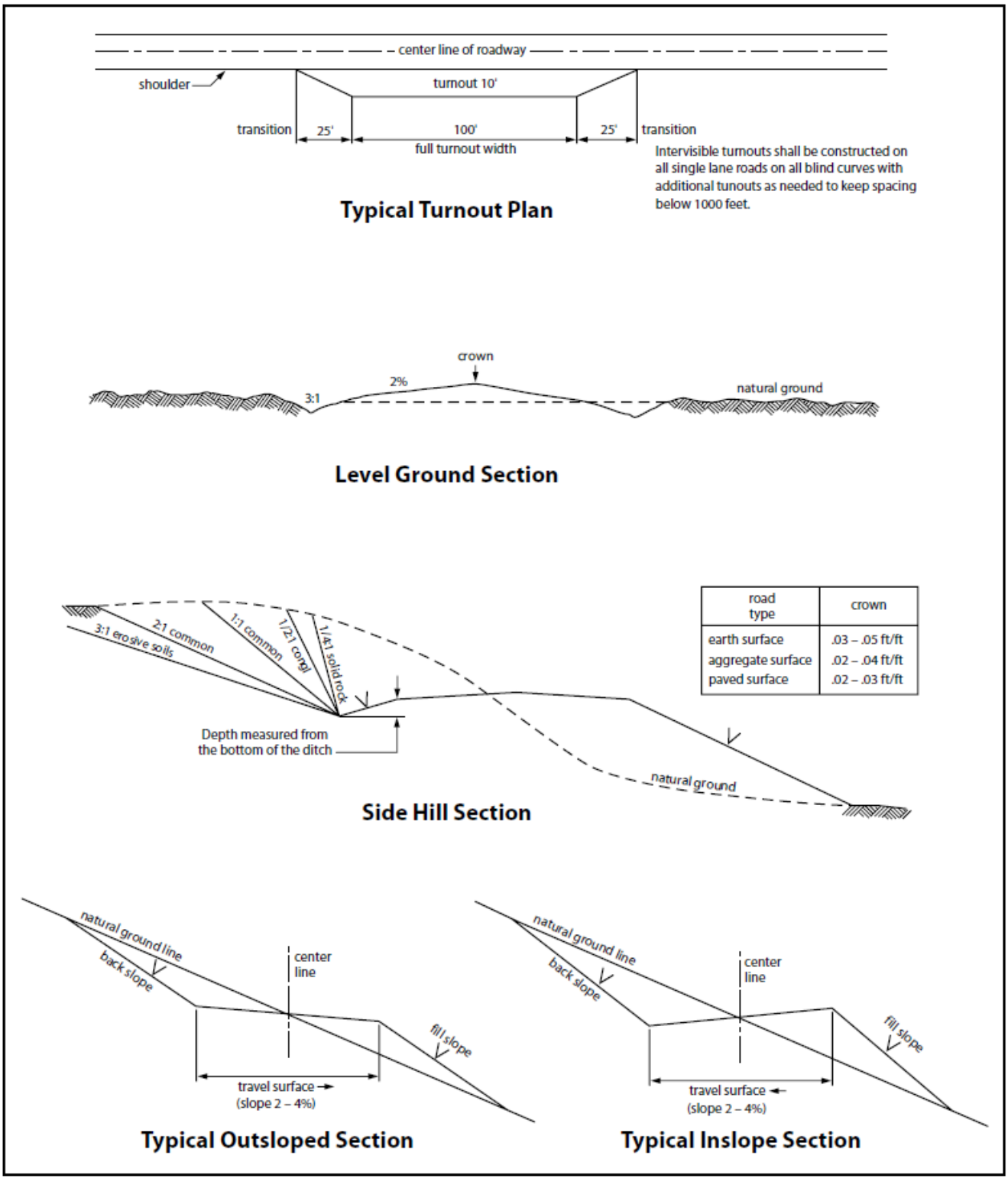


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

Approval Date: 05/26/2021

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.

Approval Date: 05/26/2021

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.

(X) seed mixture 1	( ) seed mixture 3
() 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.

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.

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.

Approval Date: 05/26/2021

Seed Mixture 1 for Loamy Sites

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 shall 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 shall be either certified or registered seed. The seed container shall be tagged in accordance with State law(s) and available for inspection by the Authorized Officer.

Seed shall be planted using a drill equipped with a depth regulator to ensure proper depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture shall be evenly and uniformly planted over the disturbed area (small/heavier seeds have a tendency to drop the bottom of the drill and are planted first). Holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed shall be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre shall be doubled. The seeding shall be repeated until a satisfactory stand is established as determined by the Authorized Officer. Evaluation of growth may 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	
Plains lovegrass (Eragrostis intermedia)		0.5
Sand dropseed (Sporobolus cryptandrus)	1.0	
Sideoats grama (Bouteloua curtipendula)	5.0	
Plains bristlegrass (Setaria macrostachya)	2.0	

*Pounds of pure live seed:

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

Approval Date: 05/26/2021

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Devon Energy Production Company LP**
LEASE NO.:	**NMNM114988**
LOCATION:	Section 12, T.26 S., R.33 E., NMPM
COUNTY:	Lea County, New Mexico

WELL NAME & NO.:	Seawolf 12-1 Fed 2H
SURFACE HOLE FOOTAGE:	382'/S & 2231'/W
BOTTOM HOLE FOOTAGE	550'/S & 360'/W

WELL NAME & NO.:	Seawolf 12-1 Fed 3H
SURFACE HOLE FOOTAGE:	382'/S & 2261'/W
BOTTOM HOLE FOOTAGE	20'/N & 1766'/W

WELL NAME & NO.:	Seawolf 12-1 Fed 4H
SURFACE HOLE FOOTAGE:	580'/S & 1819'/E
BOTTOM HOLE FOOTAGE	20'/N & 2108'/E

WELL NAME & NO.:	Seawolf 12-1 Fed 5H
SURFACE HOLE FOOTAGE:	580'/S & 1789'/E
BOTTOM HOLE FOOTAGE	20'/N & 710'/E

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

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Salado Draw and Wolfcamp** formation. 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.

Approval Date: 05/26/2021

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **1136 feet** (a minimum of **25 feet (Lea 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.
      Cement excess is less than 25%, more cement might be required.

Approval Date: 05/26/2021

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.

Option 1:

a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.

b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the intermediate 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.**

Option 2:

1. 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.

Approval Date: 05/26/2021

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.

Approval Date: 05/26/2021

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

Approval Date: 05/26/2021

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

Approval Date: 05/26/2021

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.

Approval Date: 05/26/2021

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

Hydrogen Sulfide (H_2S) Contingency Plan

For

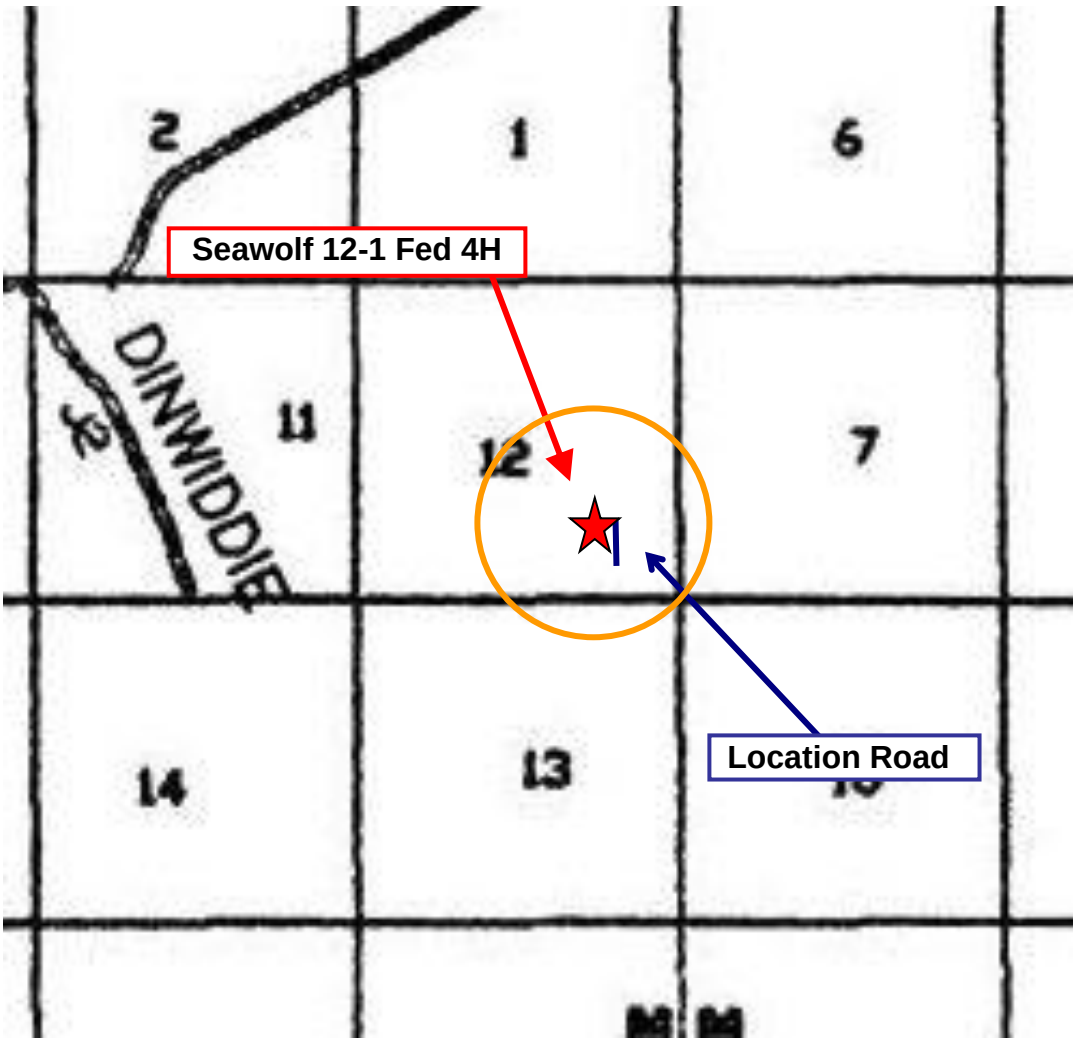
Seawolf 12-1 Fed 4H

Sec-12 T-26S R-33E
580 FSL & 1819' FEL
LAT. = 32.052293' N (NAD83)
LONG = 103.523406' W

Lea County NM

Seawolf 12-1 Fed 4H

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:**

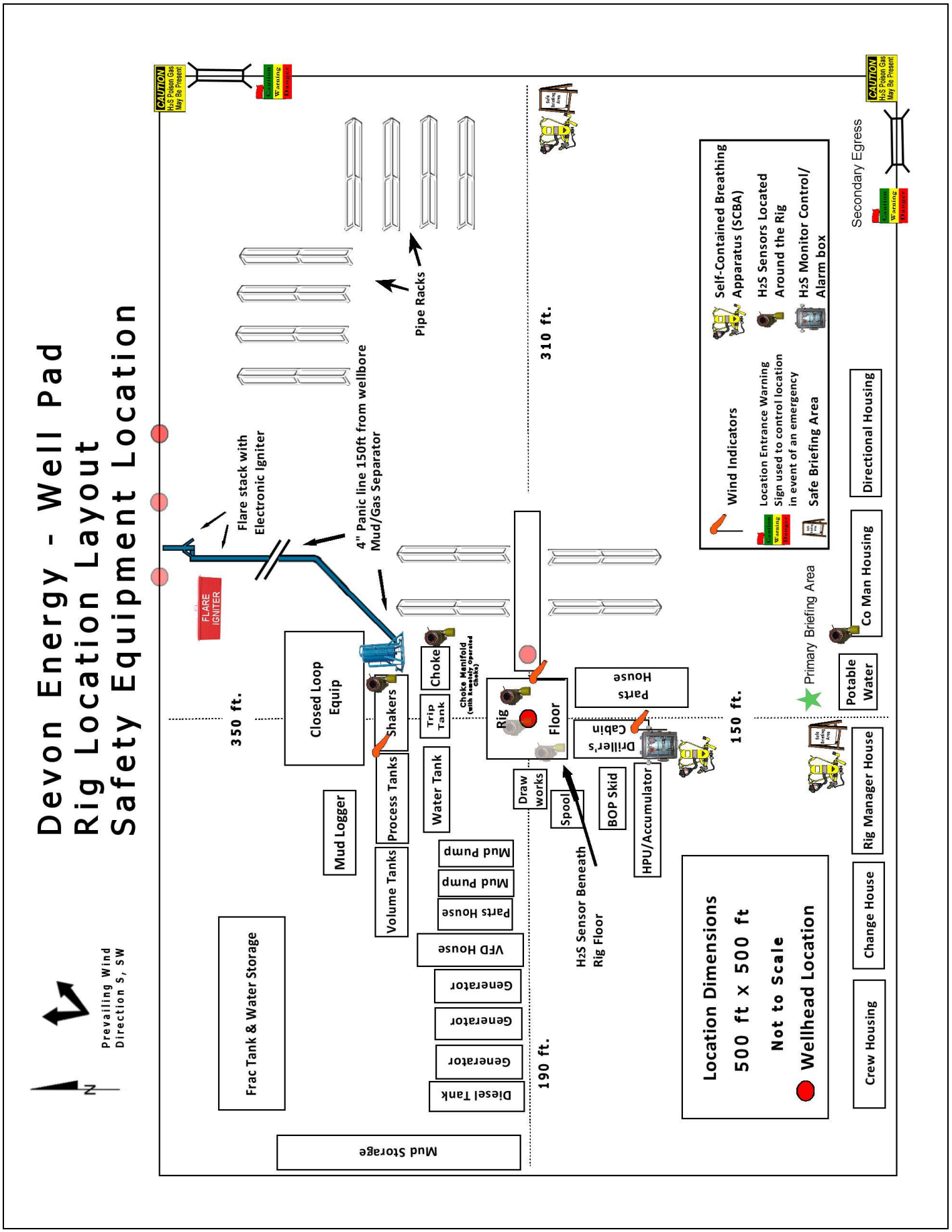
   A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safety and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing 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 (TX & NM)	(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

SHARP communications and consulting



Devon Energy Corp. Cont Plan. Page 8

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

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

CONDITIONS

Operator:	OGRID:
DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	6137
	Action Number: 32423
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

CONDITIONS

Created By	Condition	Condition Date
pkautz	Will require a File As Drilled C-102 and a Directional Survey with the C-104	7/1/2021
pkautz	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string	7/1/2021