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

Sundry Print Report

05/13/2024

Well Name: FIGHTING OKRA 18-19 FED

Well Location: T26S / R34E / SEC 18 / NENW / 32.049323 / -103.5098229

County or Parish/State: LEA / NM

Well Number: 27H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM114992

Unit or CA Name:

Unit or CA Number:

US Well Number: 3002547582

Operator: DEVON ENERGY PRODUCTION COMPANY LP

Notice of Intent

Sundry ID: 2788618

Type of Submission: Notice of Intent

Type of Action: APD Change

Date Sundry Submitted: 05/06/2024

Time Sundry Submitted: 02:01

Date proposed operation will begin: 05/20/2024

Procedure Description: Engineering Only - Devon Energy Production Company L.P. respectfully requests the following changes to the approved APD: Casing program change to slim hole design: Surface, Intermediate, and Production Casing size changes. Cement volume changes to accommodate casing change. Please see attached revised drilling & directional plans and supporting documentation.

NOI Attachments

Procedure Description

FIGHTING_OKRA_18_19_FED_27H_Slim_Hole_20240506140020.pdf

FIGHTING_OKRA_18_19_FED_27H_Directional_Plan_08_30_23_20240506140020.pdf

5.5_20lb_VAEP_P110_VAroughneck_SC_Slim_Hole_20240506135943.pdf

7_625_29_7lb_P110HSCY_MOFXL_20240506135941.pdf

9.625_40lb_J_55_20240506135941.pdf

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Unit or CA Number:

US Well Number: 3002547582

Operator: DEVON ENERGY PRODUCTION COMPANY LP

Conditions of Approval

Specialist Review

Fighting_Okra_18_19_Fed_27H_Sundry_ID_2788618_20240509102433.pdf

Operator

I certify that the foregoing is true and correct. 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. Electronic submission of Sundry Notices through this system satisfies regulations requiring a

Operator Electronic Signature: REBECCA DEAL

Signed on: MAY 06, 2024 02:00 PM

Name: DEVON ENERGY PRODUCTION COMPANY LP

Title: Regulatory Analyst

Street Address: 333 W SHERIDAN AVE

City: OKLAHOMA CITY **State:** OK

Phone: (303) 299-1406

Email address: REBECCA.DEAL@DVN.COM

Field

Representative Name:

Street Address:

City: **State:** **Zip:**

Phone:

Email address:

BLM Point of Contact

BLM POC Name: LONG VO

BLM POC Title: Petroleum Engineer

BLM POC Phone: 5759885402

BLM POC Email Address: LVO@BLM.GOV

Disposition: Approved

Disposition Date: 05/09/2024

Signature: Long Vo

Form 3160-5
(June 2019)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: October 31, 2021

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE *- Other instructions on page 2*

5. Lease Serial No. NMNM114992

6. If Indian, Allottee or Tribe Name

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

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

8. Well Name and No. FIGHTING OKRA 18-19 FED/27H

2. Name of Operator DEVON ENERGY PRODUCTION COMPANY LP

9. API Well No. 3002547582

3a. Address 333 WEST SHERIDAN AVE, OKLAHOMA CITY,

3b. Phone No. *(include area code)* (405) 235-3611

10. Field and Pool or Exploratory Area WC-025 G-10 S263418C/LWR WOLFCAMP

4. Location of Well *(Footage, Sec., T.,R.,M., or Survey Description)* SEC 18/T26S/R34E/NMP

11. Country or Parish, State LEA/NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☑ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☑ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be perfonned or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has detennined that the site is ready for final inspection.)

Engineering Only - Devon Energy Production Company L.P. respectfully requests the following changes to the approved APD:
Casing program change to slim hole design: Surface, Intermediate, and Production Casing size changes. Cement volume changes to accommodate casing change. Please see attached revised drilling & directional plans and supporting documentation.

14. I hereby certify that the foregoing is true and correct. Name *(Printed/Typed)* REBECCA DEAL / Ph: (303) 299-1406

Title Regulatory Analyst

Signature (Electronic Submission)

Date 05/06/2024

THE SPACE FOR FEDERAL OR STATE OFICE USE

Approved by LONG VO / Ph: (575) 988-5402 / Approved

Title Petroleum Engineer

Date 05/09/2024

Conditions of approval, if any, are attached. Approval of this notice 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.

Office CARLSBAD

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.

(Instructions on page 2)

GENERAL INSTRUCTIONS

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

SPECIFIC INSTRUCTIONS

Item 4 - Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult the local Federal office for specific instructions.

Item 13: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to the top of any tubing left in the hole; method of closing top of well and date well site conditioned for final inspection looking for approval of the abandonment. If the proposal will involve **hydraulic fracturing operations**, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The privacy Act of 1974 and the regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.
AUTHORITY: 30 U.S.C. 181 et seq., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.
PRINCIPAL PURPOSE: The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and granting approval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3, and 3162.3-4; (c) reporting the beginning or resumption of production, as required by 43 CFR 3162.4-1(c)and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.
ROUTINE USES: Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.
EFFECT OF NOT PROVIDING THE INFORMATION: Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3-2, 3162.3-3, 3162.3-4.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM collects this information to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.
Response to this request is mandatory.
The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

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

Additional Information

Location of Well

0. SHL: NENW / 500 FNL / 2390 FWL / TWSP: 26S / RANGE: 34E / SECTION: 18 / LAT: 32.049323 / LONG: -103.5098229 (TVD: 0 feet, MD: 0 feet)

PPP: NENW / 100 FNL / 2071 FWL / TWSP: 26S / RANGE: 34E / SECTION: 18 / LAT: 32.0504 / LONG: -103.5109 (TVD: 12560 feet, MD: 12605 feet)

BHL: SESW / 20 FSL / 2071 FWL / TWSP: 26S / RANGE: 34E / SECTION: 19 / LAT: 32.0216 / LONG: -103.5109 (TVD: 13450 feet, MD: 23737 feet)

1. Geologic Formations

TVD of target	13450	Pilot hole depth	N/A
MD at TD:	23738	Deepest expected fresh water	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone?	Hazards*
Rustler	785		
Salt	1060		
Base of Salt	5250		
Delaware	5300		
Cherry Canyon	6353		
Brushy Canyon	7996		
1st Bone Spring Lime	9529		
Bone Spring 1st	10475		
Bone Spring 2nd	11421		
3rd Bone Spring Lime	11487		
Bone Spring 3rd	12100		
Wolfcamp	12560		

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

FIGHTING OKRA 18-19 FED 27H

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)
13 1/2	9 5/8	40	J-55	BTC	0	865	0	865
8 3/4	7 5/8	29.7	P-110HSCY	MOFXL	0	12822	0	12822
6 3/4	5 1/2	20	P110	VARN & Sprint SF	0	23738	0	13450

•All casing strings will be tested in accordance with 43 CFR 3172.

Variance Approval -

o 5-1/2" Production Casing will include Sprint SF connection from base of curve to 500ft inside 7 5/8" casing shoe

o All other 5-1/2" Production Casing will run VARN (6.05") or equivalent

3. Cementing Program (Primary Design)

Assuming no returns are established while drilling, Devon requests to pump a two stage cement job on the intermediate casing string with the first stage being pumped conventionally with the calculated top of cement at the Brushy Canyon and the second stage performed as a bradenhead squeeze with planned cement from the Brushy Canyon to surface. The final cement top will be verified by Echo-meter. Devon will include the Echo-meter verified fluid top and the volume of displacement fluid above the cement slurry in the annulus in all post-drill sundries on wells utilizing this cement program. Devon will report to the BLM the volume of fluid (limited to 1 bbls) used to flush intermediate casing valves following backside cementing procedures

3. Cementing Program (Primary Design)

Casing	# Sks	TOC	Wt. ppg	Yld (ft3/sack)	Slurry Description
Surface	459	Surf	13.2	1.44	Lead: Class C Cement + additives
Int 1	485	Surf	9	2.3	Lead: Class C Cement + additives
	383	8679	13.2	1.44	Tail: Class H / C + additives
Int 1 Intermediate Squeeze	630	Surf	13.2	1.44	Squeeze Lead: Class C Cement + additives
	485	Surf	9	2.3	Lead: Class C Cement + additives
	383	8679	13.2	1.44	Tail: Class H / C + additives
Production	62	10922	9	3.27	Lead: Class H /C + additives
	690	12922	13.2	1.44	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	13-5/8"	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	7344
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.

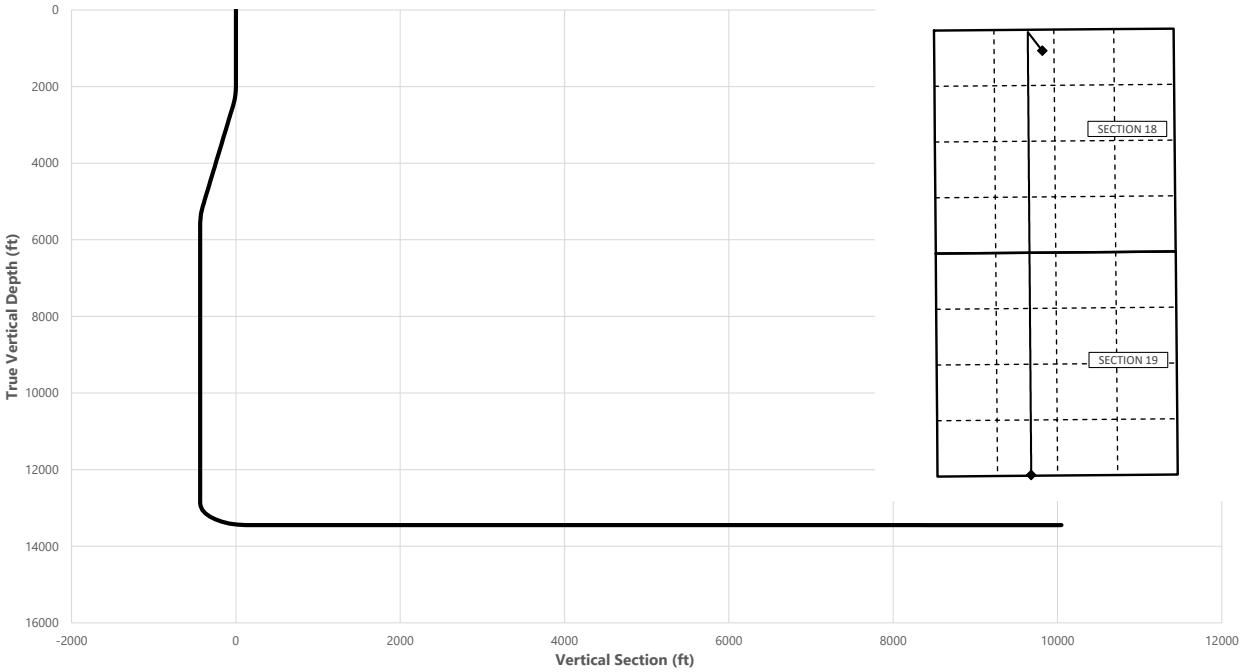
Attachments

X Directional Plan
_____ Other, describe

Well: FIGHTING OKRA 18-19 FED 27H
County: Lea
Wellbore: Permit Plan
Design: Permit Plan #1

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

MD (ft)	INC (°)	AZI (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Comment
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL
2000.00	0.00	324.00	2000.00	0.00	0.00	0.00	0.00	Start Tangent
2500.00	10.00	324.00	2497.47	35.21	-25.58	-34.58	2.00	Hold Tangent
5152.34	10.00	324.00	5109.51	407.82	-296.30	-400.48	0.00	Drop to Vertical
5652.34	0.00	324.00	5606.98	443.03	-321.88	-435.05	2.00	Hold Vertical
12922.41	0.00	179.58	12877.04	443.03	-321.88	-435.05	0.00	KOP
13822.41	90.00	179.58	13450.00	-129.91	-317.68	137.62	10.00	Landing Point
23737.76	90.00	179.58	13450.00	-10045.00	-245.00	10047.99	0.00	BHL



Key Depths	MD (ft)	TVD (ft)
Rustler	785.00	785.00
Salt	1060.00	1060.00
Base of Salt	5294.43	5250.00
Delaware	5344.77	5300.00
Cherry Canyon	6398.36	6353.00
Brushy Canyon	8041.36	7996.00
1st Bone Spring Lime	9574.36	9529.00
Bone Spring 1st	10520.36	10475.00
Bone Spring 2nd	11466.36	11421.00
3rd Bone Spring Lime	11532.36	11487.00
Bone Spring 3rd	12145.36	12100.00
Wolfcamp / Point of Penetration	12605.36	12560.00
exit	23657.76	13450.01

	MD (ft)	TVD (ft)	Lat (°)	Long (°)	Section Footages
SHL	0.00	0.00	32.0492	-103.5099	500' FNL, 2390' FWL of Sec 18 in T26S, R34E
KOP	12922.41	12877.04	32.0505	-103.5109	54' FNL, 2072' FWL of Sec 18 in T26S, R34E
Point of Penetration	12605.36	12560.00	32.0504	-103.5109	100' FNL , 2071' FWL of Sec 18 in T26S, R34E
Exit	23657.76	13450.01	32.0219	-103.5109	100' FSL, 2071' FWL of Sec 19 in T26S, R34E
BHL	23737.76	13450.00	32.0216	-103.5109	20' FSL, 2071' FWL of Sec 19 in T26S, R34E

	Y	X	MD
KOP	383097	796161	12922.41

devon

Well: FIGHTING OKRA 18-19 FED 27H
County: Lea
Wellbore: Permit Plan
Design: Permit Plan #1

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

MD (ft)	INC (°)	AZI (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Comment
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL
100.00	0.00	324.00	100.00	0.00	0.00	0.00	0.00	
200.00	0.00	324.00	200.00	0.00	0.00	0.00	0.00	
300.00	0.00	324.00	300.00	0.00	0.00	0.00	0.00	
400.00	0.00	324.00	400.00	0.00	0.00	0.00	0.00	
500.00	0.00	324.00	500.00	0.00	0.00	0.00	0.00	
600.00	0.00	324.00	600.00	0.00	0.00	0.00	0.00	
700.00	0.00	324.00	700.00	0.00	0.00	0.00	0.00	
785.00	0.00	324.00	785.00	0.00	0.00	0.00	0.00	Rustler
800.00	0.00	324.00	800.00	0.00	0.00	0.00	0.00	
900.00	0.00	324.00	900.00	0.00	0.00	0.00	0.00	
1000.00	0.00	324.00	1000.00	0.00	0.00	0.00	0.00	
1060.00	0.00	324.00	1060.00	0.00	0.00	0.00	0.00	Salt
1100.00	0.00	324.00	1100.00	0.00	0.00	0.00	0.00	
1200.00	0.00	324.00	1200.00	0.00	0.00	0.00	0.00	
1300.00	0.00	324.00	1300.00	0.00	0.00	0.00	0.00	
1400.00	0.00	324.00	1400.00	0.00	0.00	0.00	0.00	
1500.00	0.00	324.00	1500.00	0.00	0.00	0.00	0.00	
1600.00	0.00	324.00	1600.00	0.00	0.00	0.00	0.00	
1700.00	0.00	324.00	1700.00	0.00	0.00	0.00	0.00	
1800.00	0.00	324.00	1800.00	0.00	0.00	0.00	0.00	
1900.00	0.00	324.00	1900.00	0.00	0.00	0.00	0.00	
2000.00	0.00	324.00	2000.00	0.00	0.00	0.00	0.00	Start Tangent
2100.00	2.00	324.00	2099.98	1.41	-1.03	-1.39	2.00	
2200.00	4.00	324.00	2199.84	5.65	-4.10	-5.54	2.00	
2300.00	6.00	324.00	2299.45	12.70	-9.22	-12.47	2.00	
2400.00	8.00	324.00	2398.70	22.56	-16.39	-22.15	2.00	
2500.00	10.00	324.00	2497.47	35.21	-25.58	-34.58	2.00	Hold Tangent
2600.00	10.00	324.00	2595.95	49.26	-35.79	-48.37	0.00	
2700.00	10.00	324.00	2694.43	63.31	-46.00	-62.17	0.00	
2800.00	10.00	324.00	2792.91	77.36	-56.20	-75.96	0.00	
2900.00	10.00	324.00	2891.39	91.40	-66.41	-89.76	0.00	
3000.00	10.00	324.00	2989.87	105.45	-76.62	-103.55	0.00	
3100.00	10.00	324.00	3088.35	119.50	-86.82	-117.35	0.00	
3200.00	10.00	324.00	3186.83	133.55	-97.03	-131.14	0.00	
3300.00	10.00	324.00	3285.31	147.60	-107.24	-144.94	0.00	
3400.00	10.00	324.00	3383.79	161.65	-117.44	-158.73	0.00	
3500.00	10.00	324.00	3482.27	175.69	-127.65	-172.53	0.00	
3600.00	10.00	324.00	3580.75	189.74	-137.86	-186.32	0.00	
3700.00	10.00	324.00	3679.23	203.79	-148.06	-200.12	0.00	
3800.00	10.00	324.00	3777.72	217.84	-158.27	-213.92	0.00	
3900.00	10.00	324.00	3876.20	231.89	-168.48	-227.71	0.00	
4000.00	10.00	324.00	3974.68	245.94	-178.68	-241.51	0.00	
4100.00	10.00	324.00	4073.16	259.98	-188.89	-255.30	0.00	
4200.00	10.00	324.00	4171.64	274.03	-199.10	-269.10	0.00	
4300.00	10.00	324.00	4270.12	288.08	-209.31	-282.89	0.00	
4400.00	10.00	324.00	4368.60	302.13	-219.51	-296.69	0.00	
4500.00	10.00	324.00	4467.08	316.18	-229.72	-310.48	0.00	
4600.00	10.00	324.00	4565.56	330.23	-239.93	-324.28	0.00	
4700.00	10.00	324.00	4664.04	344.27	-250.13	-338.07	0.00	
4800.00	10.00	324.00	4762.52	358.32	-260.34	-351.87	0.00	
4900.00	10.00	324.00	4861.00	372.37	-270.55	-365.66	0.00	
5000.00	10.00	324.00	4959.48	386.42	-280.75	-379.46	0.00	
5100.00	10.00	324.00	5057.97	400.47	-290.96	-393.25	0.00	
5152.34	10.00	324.00	5109.51	407.82	-296.30	-400.48	0.00	Drop to Vertical
5200.00	9.05	324.00	5156.51	414.20	-300.94	-406.74	2.00	
5294.43	7.16	324.00	5250.00	424.97	-308.76	-417.31	2.00	Base of Salt
5300.00	7.05	324.00	5255.52	425.53	-309.16	-417.86	2.00	
5344.77	6.15	324.00	5300.00	429.69	-312.19	-421.95	2.00	Delaware
5400.00	5.05	324.00	5354.96	434.05	-315.35	-426.23	2.00	
5500.00	3.05	324.00	5454.71	439.76	-319.50	-431.84	2.00	
5600.00	1.05	324.00	5554.64	442.65	-321.60	-434.67	2.00	
5652.34	0.00	324.00	5606.98	443.03	-321.88	-435.05	2.00	Hold Vertical
5700.00	0.00	179.58	5654.64	443.03	-321.88	-435.05	0.00	
5800.00	0.00	179.58	5754.64	443.03	-321.88	-435.05	0.00	
5900.00	0.00	179.58	5854.64	443.03	-321.88	-435.05	0.00	
6000.00	0.00	179.58	5954.64	443.03	-321.88	-435.05	0.00	
6100.00	0.00	179.58	6054.64	443.03	-321.88	-435.05	0.00	
6200.00	0.00	179.58	6154.64	443.03	-321.88	-435.05	0.00	
6300.00	0.00	179.58	6254.64	443.03	-321.88	-435.05	0.00	

devon

Well: FIGHTING OKRA 18-19 FED 27H
County: Lea
Wellbore: Permit Plan
Design: Permit Plan #1

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

MD (ft)	INC (°)	AZI (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Comment
6398.36	0.00	179.58	6353.00	443.03	-321.88	-435.05	0.00	Cherry Canyon
6400.00	0.00	179.58	6354.64	443.03	-321.88	-435.05	0.00	
6500.00	0.00	179.58	6454.64	443.03	-321.88	-435.05	0.00	
6600.00	0.00	179.58	6554.64	443.03	-321.88	-435.05	0.00	
6700.00	0.00	179.58	6654.64	443.03	-321.88	-435.05	0.00	
6800.00	0.00	179.58	6754.64	443.03	-321.88	-435.05	0.00	
6900.00	0.00	179.58	6854.64	443.03	-321.88	-435.05	0.00	
7000.00	0.00	179.58	6954.64	443.03	-321.88	-435.05	0.00	
7100.00	0.00	179.58	7054.64	443.03	-321.88	-435.05	0.00	
7200.00	0.00	179.58	7154.64	443.03	-321.88	-435.05	0.00	
7300.00	0.00	179.58	7254.64	443.03	-321.88	-435.05	0.00	
7400.00	0.00	179.58	7354.64	443.03	-321.88	-435.05	0.00	
7500.00	0.00	179.58	7454.64	443.03	-321.88	-435.05	0.00	
7600.00	0.00	179.58	7554.64	443.03	-321.88	-435.05	0.00	
7700.00	0.00	179.58	7654.64	443.03	-321.88	-435.05	0.00	
7800.00	0.00	179.58	7754.64	443.03	-321.88	-435.05	0.00	
7900.00	0.00	179.58	7854.64	443.03	-321.88	-435.05	0.00	
8000.00	0.00	179.58	7954.64	443.03	-321.88	-435.05	0.00	
8041.36	0.00	179.58	7996.00	443.03	-321.88	-435.05	0.00	Brushy Canyon
8100.00	0.00	179.58	8054.64	443.03	-321.88	-435.05	0.00	
8200.00	0.00	179.58	8154.64	443.03	-321.88	-435.05	0.00	
8300.00	0.00	179.58	8254.64	443.03	-321.88	-435.05	0.00	
8400.00	0.00	179.58	8354.64	443.03	-321.88	-435.05	0.00	
8500.00	0.00	179.58	8454.64	443.03	-321.88	-435.05	0.00	
8600.00	0.00	179.58	8554.64	443.03	-321.88	-435.05	0.00	
8700.00	0.00	179.58	8654.64	443.03	-321.88	-435.05	0.00	
8800.00	0.00	179.58	8754.64	443.03	-321.88	-435.05	0.00	
8900.00	0.00	179.58	8854.64	443.03	-321.88	-435.05	0.00	
9000.00	0.00	179.58	8954.64	443.03	-321.88	-435.05	0.00	
9100.00	0.00	179.58	9054.64	443.03	-321.88	-435.05	0.00	
9200.00	0.00	179.58	9154.64	443.03	-321.88	-435.05	0.00	
9300.00	0.00	179.58	9254.64	443.03	-321.88	-435.05	0.00	
9400.00	0.00	179.58	9354.64	443.03	-321.88	-435.05	0.00	
9500.00	0.00	179.58	9454.64	443.03	-321.88	-435.05	0.00	
9574.36	0.00	179.58	9529.00	443.03	-321.88	-435.05	0.00	1st Bone Spring Lime
9600.00	0.00	179.58	9554.64	443.03	-321.88	-435.05	0.00	
9700.00	0.00	179.58	9654.64	443.03	-321.88	-435.05	0.00	
9800.00	0.00	179.58	9754.64	443.03	-321.88	-435.05	0.00	
9900.00	0.00	179.58	9854.64	443.03	-321.88	-435.05	0.00	
10000.00	0.00	179.58	9954.64	443.03	-321.88	-435.05	0.00	
10100.00	0.00	179.58	10054.64	443.03	-321.88	-435.05	0.00	
10200.00	0.00	179.58	10154.64	443.03	-321.88	-435.05	0.00	
10300.00	0.00	179.58	10254.64	443.03	-321.88	-435.05	0.00	
10400.00	0.00	179.58	10354.64	443.03	-321.88	-435.05	0.00	
10500.00	0.00	179.58	10454.64	443.03	-321.88	-435.05	0.00	
10520.36	0.00	179.58	10475.00	443.03	-321.88	-435.05	0.00	Bone Spring 1st
10600.00	0.00	179.58	10554.64	443.03	-321.88	-435.05	0.00	
10700.00	0.00	179.58	10654.64	443.03	-321.88	-435.05	0.00	
10800.00	0.00	179.58	10754.64	443.03	-321.88	-435.05	0.00	
10900.00	0.00	179.58	10854.64	443.03	-321.88	-435.05	0.00	
11000.00	0.00	179.58	10954.64	443.03	-321.88	-435.05	0.00	
11100.00	0.00	179.58	11054.64	443.03	-321.88	-435.05	0.00	
11200.00	0.00	179.58	11154.64	443.03	-321.88	-435.05	0.00	
11300.00	0.00	179.58	11254.64	443.03	-321.88	-435.05	0.00	
11400.00	0.00	179.58	11354.64	443.03	-321.88	-435.05	0.00	
11466.36	0.00	179.58	11421.00	443.03	-321.88	-435.05	0.00	Bone Spring 2nd
11500.00	0.00	179.58	11454.64	443.03	-321.88	-435.05	0.00	
11532.36	0.00	179.58	11487.00	443.03	-321.88	-435.05	0.00	3rd Bone Spring Lime
11600.00	0.00	179.58	11554.64	443.03	-321.88	-435.05	0.00	
11700.00	0.00	179.58	11654.64	443.03	-321.88	-435.05	0.00	
11800.00	0.00	179.58	11754.64	443.03	-321.88	-435.05	0.00	
11900.00	0.00	179.58	11854.64	443.03	-321.88	-435.05	0.00	
12000.00	0.00	179.58	11954.64	443.03	-321.88	-435.05	0.00	
12100.00	0.00	179.58	12054.64	443.03	-321.88	-435.05	0.00	
12145.36	0.00	179.58	12100.00	443.03	-321.88	-435.05	0.00	Bone Spring 3rd
12200.00	0.00	179.58	12154.64	443.03	-321.88	-435.05	0.00	
12300.00	0.00	179.58	12254.64	443.03	-321.88	-435.05	0.00	
12400.00	0.00	179.58	12354.64	443.03	-321.88	-435.05	0.00	
12500.00	0.00	179.58	12454.64	443.03	-321.88	-435.05	0.00	
12600.00	0.00	179.58	12554.64	443.03	-321.88	-435.05	0.00	

devon

Well: FIGHTING OKRA 18-19 FED 27H
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Geodetic System: US State Plane 1983
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Ellipsoid: Clarke 1866
Zone: 3001 - NM East (NAD83)

MD (ft)	INC (°)	AZI (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Comment
12605.36	0.00	179.58	12560.00	443.03	-321.88	-435.05	0.00	Wolfcamp / Point
12700.00	0.00	179.58	12654.64	443.03	-321.88	-435.05	0.00	
12800.00	0.00	179.58	12754.64	443.03	-321.88	-435.05	0.00	
12900.00	0.00	179.58	12854.64	443.03	-321.88	-435.05	0.00	
12922.41	0.00	179.58	12877.04	443.03	-321.88	-435.05	0.00	KOP
13000.00	7.76	179.58	12954.40	437.79	-321.84	-429.81	10.00	
13100.00	17.76	179.58	13051.81	415.73	-321.68	-407.76	10.00	
13200.00	27.76	179.58	13143.90	377.09	-321.40	-369.14	10.00	
13300.00	37.76	179.58	13227.89	323.05	-321.00	-315.13	10.00	
13400.00	47.76	179.58	13301.22	255.25	-320.51	-247.36	10.00	
13500.00	57.76	179.58	13361.66	175.74	-319.92	-167.89	10.00	
13600.00	67.76	179.58	13407.37	86.95	-319.27	-79.14	10.00	
13700.00	77.76	179.58	13436.97	-8.44	-318.57	16.20	10.00	
13800.00	87.76	179.58	13449.56	-107.51	-317.85	115.23	10.00	
13822.41	90.00	179.58	13450.00	-129.91	-317.68	137.62	10.00	Landing Point
13900.00	90.00	179.58	13450.00	-207.50	-317.11	215.17	0.00	
14000.00	90.00	179.58	13450.00	-307.50	-316.38	315.12	0.00	
14100.00	90.00	179.58	13450.00	-407.50	-315.65	415.07	0.00	
14200.00	90.00	179.58	13450.00	-507.49	-314.91	515.02	0.00	
14300.00	90.00	179.58	13450.00	-607.49	-314.18	614.97	0.00	
14400.00	90.00	179.58	13450.00	-707.49	-313.45	714.92	0.00	
14500.00	90.00	179.58	13450.00	-807.49	-312.71	814.87	0.00	
14600.00	90.00	179.58	13450.00	-907.48	-311.98	914.82	0.00	
14700.00	90.00	179.58	13450.00	-1007.48	-311.25	1014.77	0.00	
14800.00	90.00	179.58	13450.00	-1107.48	-310.51	1114.72	0.00	
14900.00	90.00	179.58	13450.00	-1207.47	-309.78	1214.67	0.00	
15000.00	90.00	179.58	13450.00	-1307.47	-309.05	1314.62	0.00	
15100.00	90.00	179.58	13450.00	-1407.47	-308.31	1414.57	0.00	
15200.00	90.00	179.58	13450.00	-1507.47	-307.58	1514.52	0.00	
15300.00	90.00	179.58	13450.00	-1607.46	-306.85	1614.47	0.00	
15400.00	90.00	179.58	13450.00	-1707.46	-306.11	1714.42	0.00	
15500.00	90.00	179.58	13450.00	-1807.46	-305.38	1814.37	0.00	
15600.00	90.00	179.58	13450.00	-1907.46	-304.65	1914.32	0.00	
15700.00	90.00	179.58	13450.00	-2007.45	-303.91	2014.27	0.00	
15800.00	90.00	179.58	13450.00	-2107.45	-303.18	2114.22	0.00	
15900.00	90.00	179.58	13450.00	-2207.45	-302.45	2214.17	0.00	
16000.00	90.00	179.58	13450.00	-2307.45	-301.71	2314.12	0.00	
16100.00	90.00	179.58	13450.00	-2407.44	-300.98	2414.07	0.00	
16200.00	90.00	179.58	13450.00	-2507.44	-300.25	2514.02	0.00	
16300.00	90.00	179.58	13450.00	-2607.44	-299.51	2613.97	0.00	
16400.00	90.00	179.58	13450.00	-2707.43	-298.78	2713.91	0.00	
16500.00	90.00	179.58	13450.00	-2807.43	-298.05	2813.86	0.00	
16600.00	90.00	179.58	13450.00	-2907.43	-297.31	2913.81	0.00	
16700.00	90.00	179.58	13450.00	-3007.43	-296.58	3013.76	0.00	
16800.00	90.00	179.58	13450.00	-3107.42	-295.85	3113.71	0.00	
16900.00	90.00	179.58	13450.00	-3207.42	-295.11	3213.66	0.00	
17000.00	90.00	179.58	13450.00	-3307.42	-294.38	3313.61	0.00	
17100.00	90.00	179.58	13450.00	-3407.42	-293.65	3413.56	0.00	
17200.00	90.00	179.58	13450.00	-3507.41	-292.91	3513.51	0.00	
17300.00	90.00	179.58	13450.00	-3607.41	-292.18	3613.46	0.00	
17400.00	90.00	179.58	13450.00	-3707.41	-291.45	3713.41	0.00	
17500.00	90.00	179.58	13450.00	-3807.40	-290.71	3813.36	0.00	
17600.00	90.00	179.58	13450.00	-3907.40	-289.98	3913.31	0.00	
17700.00	90.00	179.58	13450.00	-4007.40	-289.25	4013.26	0.00	
17800.00	90.00	179.58	13450.00	-4107.40	-288.52	4113.21	0.00	
17900.00	90.00	179.58	13450.00	-4207.39	-287.78	4213.16	0.00	
18000.00	90.00	179.58	13450.00	-4307.39	-287.05	4313.11	0.00	
18100.00	90.00	179.58	13450.01	-4407.39	-286.32	4413.06	0.00	
18200.00	90.00	179.58	13450.01	-4507.39	-285.58	4513.01	0.00	
18300.00	90.00	179.58	13450.01	-4607.38	-284.85	4612.96	0.00	
18400.00	90.00	179.58	13450.01	-4707.38	-284.12	4712.91	0.00	
18500.00	90.00	179.58	13450.01	-4807.38	-283.38	4812.86	0.00	
18600.00	90.00	179.58	13450.01	-4907.38	-282.65	4912.81	0.00	
18700.00	90.00	179.58	13450.01	-5007.37	-281.92	5012.76	0.00	
18800.00	90.00	179.58	13450.01	-5107.37	-281.18	5112.71	0.00	
18900.00	90.00	179.58	13450.01	-5207.37	-280.45	5212.66	0.00	
19000.00	90.00	179.58	13450.01	-5307.36	-279.72	5312.61	0.00	
19100.00	90.00	179.58	13450.01	-5407.36	-278.98	5412.56	0.00	
19200.00	90.00	179.58	13450.01	-5507.36	-278.25	5512.51	0.00	
19300.00	90.00	179.58	13450.01	-5607.36	-277.52	5612.46	0.00	

devon

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Zone: 3001 - NM East (NAD83)

MD (ft)	INC (°)	AZI (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Comment
19400.00	90.00	179.58	13450.01	-5707.35	-276.78	5712.41	0.00	
19500.00	90.00	179.58	13450.01	-5807.35	-276.05	5812.36	0.00	
19600.00	90.00	179.58	13450.01	-5907.35	-275.32	5912.31	0.00	
19700.00	90.00	179.58	13450.01	-6007.35	-274.58	6012.25	0.00	
19800.00	90.00	179.58	13450.01	-6107.34	-273.85	6112.20	0.00	
19900.00	90.00	179.58	13450.01	-6207.34	-273.12	6212.15	0.00	
20000.00	90.00	179.58	13450.01	-6307.34	-272.38	6312.10	0.00	
20100.00	90.00	179.58	13450.01	-6407.33	-271.65	6412.05	0.00	
20200.00	90.00	179.58	13450.01	-6507.33	-270.92	6512.00	0.00	
20300.00	90.00	179.58	13450.01	-6607.33	-270.18	6611.95	0.00	
20400.00	90.00	179.58	13450.01	-6707.33	-269.45	6711.90	0.00	
20500.00	90.00	179.58	13450.01	-6807.32	-268.72	6811.85	0.00	
20600.00	90.00	179.58	13450.01	-6907.32	-267.98	6911.80	0.00	
20700.00	90.00	179.58	13450.01	-7007.32	-267.25	7011.75	0.00	
20800.00	90.00	179.58	13450.01	-7107.32	-266.52	7111.70	0.00	
20900.00	90.00	179.58	13450.01	-7207.31	-265.78	7211.65	0.00	
21000.00	90.00	179.58	13450.01	-7307.31	-265.05	7311.60	0.00	
21100.00	90.00	179.58	13450.01	-7407.31	-264.32	7411.55	0.00	
21200.00	90.00	179.58	13450.01	-7507.31	-263.58	7511.50	0.00	
21300.00	90.00	179.58	13450.01	-7607.30	-262.85	7611.45	0.00	
21400.00	90.00	179.58	13450.01	-7707.30	-262.12	7711.40	0.00	
21500.00	90.00	179.58	13450.01	-7807.30	-261.38	7811.35	0.00	
21600.00	90.00	179.58	13450.01	-7907.29	-260.65	7911.30	0.00	
21700.00	90.00	179.58	13450.01	-8007.29	-259.92	8011.25	0.00	
21800.00	90.00	179.58	13450.01	-8107.29	-259.18	8111.20	0.00	
21900.00	90.00	179.58	13450.01	-8207.29	-258.45	8211.15	0.00	
22000.00	90.00	179.58	13450.01	-8307.28	-257.72	8311.10	0.00	
22100.00	90.00	179.58	13450.01	-8407.28	-256.98	8411.05	0.00	
22200.00	90.00	179.58	13450.01	-8507.28	-256.25	8511.00	0.00	
22300.00	90.00	179.58	13450.01	-8607.28	-255.52	8610.95	0.00	
22400.00	90.00	179.58	13450.01	-8707.27	-254.78	8710.90	0.00	
22500.00	90.00	179.58	13450.01	-8807.27	-254.05	8810.85	0.00	
22600.00	90.00	179.58	13450.01	-8907.27	-253.32	8910.80	0.00	
22700.00	90.00	179.58	13450.01	-9007.26	-252.58	9010.75	0.00	
22800.00	90.00	179.58	13450.01	-9107.26	-251.85	9110.70	0.00	
22900.00	90.00	179.58	13450.01	-9207.26	-251.12	9210.65	0.00	
23000.00	90.00	179.58	13450.01	-9307.26	-250.38	9310.59	0.00	
23100.00	90.00	179.58	13450.01	-9407.25	-249.65	9410.54	0.00	
23200.00	90.00	179.58	13450.01	-9507.25	-248.92	9510.49	0.00	
23300.00	90.00	179.58	13450.01	-9607.25	-248.18	9610.44	0.00	
23400.00	90.00	179.58	13450.01	-9707.25	-247.45	9710.39	0.00	
23500.00	90.00	179.58	13450.01	-9807.24	-246.72	9810.34	0.00	
23600.00	90.00	179.58	13450.01	-9907.24	-245.98	9910.29	0.00	
23657.76	90.00	179.58	13450.01	-9965.00	-245.56	9968.03	0.00	exit
23700.00	90.00	179.58	13450.01	-10007.24	-245.25	10010.24	0.00	
23737.76	90.00	179.58	13450.00	-10045.00	-245.00	10047.99	0.00	BHL

TECHNICAL DATA SHEET

Connection: **VAroughneck SC (OD=6.051in)**

Size: **5 1/2 in X 20.00 lb/ft**

Drift: **standard**

Bevel: **standard**

Grade: **VA-EP-P110**

Material:

	US Customary	Metric
Yield Strength Min.	125,000 psi	862 Mpa
Yield Strength Max.	140,000 psi	965 Mpa
Tensile Strength Min.	125,000 psi	862 Mpa

Pipe:

	US Customary	Metric		US Customary	Metric
Nominal OD:	5.500 in	139.70 mm	Wall Thickness:	0.361 in	9.17 mm
Nominal ID:	4.778 in	121.36 mm	Standard Drift:	4.653 in	118.19 mm
Nominal Weight:	20.00 lb/ft	30.07 kg/m	Pipe Body Yield Strength:	729 klb	3,240 kN
Pipe Cross Section:	5.828 in²	3,759.99 mm²			

Connection:

	US Customary	Metric		
OD:	6.051 in	153.70 mm	Threads per inch:	5 Threads
ID:	4.764 in	121.00 mm		
Length:	8.976 in	228.00 mm		

Connection Performance (Uniaxial Load):

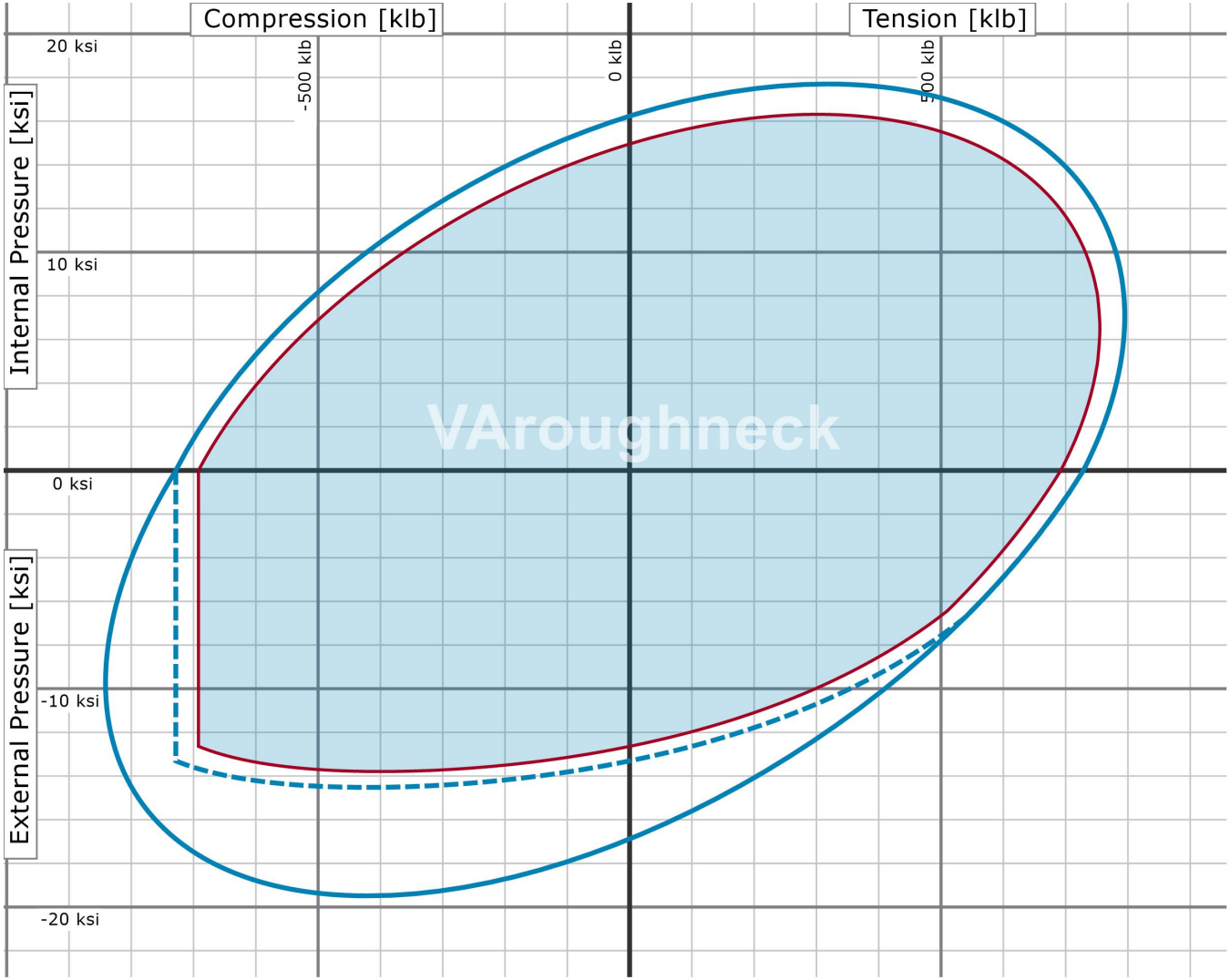
	US Customary	Metric		US Customary	Metric
Joint Strength:	729 klb	3,240 kN	Tension Efficiency:	> 100.0 %	
Collapse Resistance:.	13,300 psi	91.70 Mpa	Displacement:	1.240 gal/ft	15.40 l/m
Internal Yield Pressure:	14,360 psi	99.00 Mpa	Production:	0.932 gal/ft	11.57 l/m
Load on Coupling Face:	411 klb	1,830 kN			

Field Make Up (Friction Factor = 1.0):

	US Customary	Metric		US Customary	Metric
Minimum Torque:	15,820 ft.lb	21,450 Nm	Make-Up Loss:	4.370 in	111.00 mm
Optimum Torque:	17,580 ft.lb	23,835 Nm	Yield Torque:	22,000 ft.lb	29,800 Nm
Maximum Torque:	19,340 ft.lb	26,220 Nm			
Min. Torque on Shoulder:	%				

voestalpine
ONE STEP AHEAD.

LOAD ENVELOPE



Recommended Field of Application

Pipe Body Envelope

Pipe Body Collapse

Efficiency (% Pipe Body) under Uniaxial Loads	
Tension:	100.0 %
Compression:	100.0 %
Internal Pressure:	100.0 %
External Pressure:	100.0 %

Sealability Rating (% Efficiency) under Combined Loads	
Tension:	100.0 %
Compression:	100.0 %
Internal Pressure:	100.0 %
External Pressure:	100.0 %

Test Conditions	
Test Medium:	Fluid
Von Mises Envelope:	95.0 %
Bending:	20.00 °/100ft

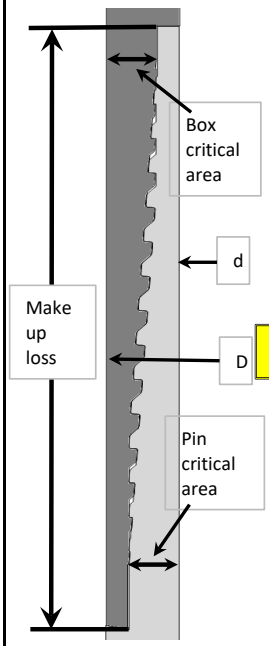
The graph is calculated under consideration of the requirements of EN ISO 13679 and API 5C3. The combined loads are calculated without the consideration of wall thickness tolerances and differ from the values in the data sheet, which are calculated with tolerances determined by API. Any printout is NOT SUBJECT TO REGULAR REVISION. The generated performance envelope shall solely be used as a tool to facilitate the comparison of performance properties under combined loads, of different grades, sizes and connections of voestalpine Tubulars products. Field-specific safety/design factors as well as other loads are not considered. Thus the results shall by no means be used to replace the own string design engineering or to justify any warranty/guaranty cases.

voestalpine
ONE STEP AHEAD.

Metal One Corp.	MO-FXL *1 Pipe Body: BMP P110HSCY MinYS125ksi Min95%WT Connection Data Sheet	CDS#	MO-FXL 7-5/8 29.7 P110HSCY MinYS125ksi Min95%WT
		Date	20-Sep-23

Geometry

MO-FXL



Pipe Body

Grade *	P110HSCY		P110HSCY	
Pipe OD (D)	7 5/8	in	193.68	mm
Weight	29.70	lb/ft	44.25	kg/m
Actual weight	29.04		43.26	kg/m
Wall Thickness (t)	0.375	in	9.53	mm
Pipe ID (d)	6.875	in	174.63	mm
Pipe body cross section	8.541	in^2	5,510	mm^2
Drift Dia.	6.750	in	171.45	mm

Connection

Box OD (W)	7.625	in	193.68	mm
PIN ID	6.875	in	174.63	mm
Make up Loss	4.219	in	107.16	mm
Box Critical Area	5.714	in^2	3686	mm^2
Joint load efficiency	70	%	70	%
Thread Taper	1 / 10 (1.2" per ft)			
Number of Threads	5 TPI			

Performance

Performance Properties for Pipe Body

S.M.Y.S. *1	1,068	kips	4,749	kN
M.I.Y.P. *1	11,680	psi	80.55	MPa
Collapse Strength *1	7,200	psi	49.66	MPa

Note S.M.Y.S.= Specified Minimum YIELD Strength of Pipe body
M.I.Y.P. = Minimum Internal Yield Pressure of Pipe body

* BMP P110HSCY: MinYS125ksi, Min95%WT, Collapse Strength 7,200psi
Performance Data Sheet: 7.625" 29.7lb/ft P110HSCY Rev3, dated 9/19/2023

Performance Properties for Connection

Tensile Yield load	747 kips (70% of S.M.Y.S.)
Min. Compression Yield	747 kips (70% of S.M.Y.S.)
Internal Pressure	9,340 psi (80% of M.I.Y.P.)
External Pressure	100% of Collapse Strength
Max. DLS (deg. /100ft)	30

Recommended Torque

Min.	15,500	ft-lb	21,000	N-m
Opti.	17,200	ft-lb	23,300	N-m
Max.	18,900	ft-lb	25,600	N-m
Operational Max.	23,600	ft-lb	32,000	N-m

Note : Operational Max. torque can be applied for high torque application

U. S. Steel Tubular Products

9.625" 40.00lbs/ft (0.395" Wall) J55

1/24/2019 2:45:24 PM

MECHANICAL PROPERTIES	Pipe	BTC	LTC	STC	
Minimum Yield Strength	55,000	--	--	--	psi
Maximum Yield Strength	80,000	--	--	--	psi
Minimum Tensile Strength	75,000	--	--	--	psi
DIMENSIONS	**Pipe**	**BTC**	**LTC**	**STC**	
Outside Diameter	9.625	10.625	10.625	10.625	in.
Wall Thickness	0.395	--	--	--	in.
Inside Diameter	8.835	8.835	8.835	8.835	in.
Standard Drift	8.679	8.679	8.679	8.679	in.
Alternate Drift	8.750	8.750	8.750	8.750	in.
Nominal Linear Weight, T&C	40.00	--	--	--	lbs/ft
Plain End Weight	38.97	--	--	--	lbs/ft
PERFORMANCE	**Pipe**	**BTC**	**LTC**	**STC**	
Minimum Collapse Pressure	2,570	2,570	2,570	2,570	psi
Minimum Internal Yield Pressure	3,950	3,950	3,950	3,950	psi
Minimum Pipe Body Yield Strength	630	--	--	--	1,000 lbs
Joint Strength	--	714	520	452	1,000 lbs
Reference Length	--	11,898	8,665	7,529	ft
MAKE-UP DATA	**Pipe**	**BTC**	**LTC**	**STC**	
Make-Up Loss	--	4.81	4.75	3.38	in.
Minimum Make-Up Torque	--	--	3,900	3,390	ft-lbs
Maximum Make-Up Torque	--	--	6,500	5,650	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

Well Name: FIGHTING OKRA 18-19 FED

Well Location: T26S / R34E / SEC 18 / NENW / 32.049323 / -103.5098229

County or Parish/State: LEA / NM

Well Number: 27H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM114992

Unit or CA Name:

Unit or CA Number:

US Well Number: 3002547582

Operator: DEVON ENERGY PRODUCTION COMPANY LP

LONG VO Digitally signed by LONG VO Date: 2024.05.09 11:22:39 -05'00'

Notice of Intent

Sundry ID: 2788618

Type of Submission: Notice of Intent

Type of Action: APD Change

Date Sundry Submitted: 05/06/2024

Time Sundry Submitted: 02:01

Date proposed operation will begin: 05/20/2024

Procedure Description: Engineering Only - Devon Energy Production Company L.P. respectfully requests the following changes to the approved APD: Casing program change to slim hole design: Surface, Intermediate, and Production Casing size changes. Cement volume changes to accommodate casing change. Please see attached revised drilling & directional plans and supporting documentation.

NOI Attachments

Procedure Description

FIGHTING_OKRA_18_19_FED_27H_Slim_Hole_20240506140020.pdf

FIGHTING_OKRA_18_19_FED_27H_Directional_Plan_08_30_23_20240506140020.pdf

5.5_20lb_VAEP_P110_VAroughneck_SC_Slim_Hole_20240506135943.pdf

7_625_29_7lb_P110HSCY_MOFXL_20240506135941.pdf

9.625_40lb_J_55_20240506135941.pdf

Well Name: FIGHTING OKRA 18-19 FED

Well Location: T26S / R34E / SEC 18 / NENW / 32.049323 / -103.5098229

County or Parish/State: LEA / NM

Well Number: 27H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM114992

Unit or CA Name:

Unit or CA Number:

US Well Number: 3002547582

Operator: DEVON ENERGY PRODUCTION COMPANY LP

Operator

I certify that the foregoing is true and correct. 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. Electronic submission of Sundry Notices through this system satisfies regulations requiring a

Operator Electronic Signature: REBECCA DEAL

Signed on: MAY 06, 2024 02:00 PM

Name: DEVON ENERGY PRODUCTION COMPANY LP

Title: Regulatory Analyst

Street Address: 333 W SHERIDAN AVE

City: OKLAHOMA CITY **State:** OK

Phone: (303) 299-1406

Email address: REBECCA.DEAL@DVN.COM

Field

Representative Name:

Street Address:

City: **State:** **Zip:**

Phone:

Email address:

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Devon Energy Production Company LP**
LEASE NO.:	**NMNM114992**
LOCATION:	Section 18, T.26 S., R.34 E., NMPM
COUNTY:	Lea County, New Mexico

WELL NAME & NO.:	**Fighting Okra 18-19 Fed 27H**
SURFACE HOLE FOOTAGE:	500'/N & 2390'/W
BOTTOM HOLE FOOTAGE	20'/S & 2071'/W
ATS/API ID:	**3002547582**
APD ID:	**10400056532**
Sundry ID:	**2748970**

COA

H2S	Yes		
Potash	None		
Cave/Karst Potential	Low		
Cave/Karst Potential	☐ Critical		
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	Conventional and Multibowl		
Other	☐ 4 String	Capitan Reef: None	☐ WIPP
Other	Pilot Hole: None	☐ Open Annulus	
Cementing	Contingency Squeeze: None	Echo-Meter: Int 1	Primary Cement Squeeze: None
Special Requirements	☐ Water Disposal/Injection	☐ COM	☐ Unit
Special Requirements	☐ Batch Sundry		
Special Requirements Variance	☐ Break Testing	☐ Offline Cementing	☑ Casing Clearance

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Wolfcamp** formation. As a result, the Hydrogen Sulfide area must meet **43 CFR part 3170 Subpart 3176** requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

1. The **9-5/8** inch surface casing shall be set at approximately **810 feet** (a minimum of **25 feet (Lea County)** into the Rustler Anhydrite and above the salt when present, and below usable fresh water) and cemented to the surface. The surface hole shall be **14 3/4** inch in diameter.

    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 **7-5/8** inch intermediate casing shall be set at approximately **12000 feet** is:

    Option 1 (Single Stage):

    - Cement to surface. If cement does not circulate see B.1.a, c-d above.

    Option 2:

    Operator has proposed to cement in two stages by conventionally cementing the first stage and performing a bradenhead squeeze on the second stage, contingent upon no returns to surface.

a. First stage: Operator will cement with intent to reach the top of the **Brushy Canyon at 7996' (862 sxs Class H/C+ additives)**.

b. Second stage:

- Operator will perform bradenhead squeeze and top-out. Cement to surface. If cement does not reach surface, the appropriate BLM office shall be notified. **(Squeeze 622 sxs Class C)**
  Cement excess is less than 25%, more cement is required if washout occurs. Adjust cement volume and excess based on a fluid caliper or similar method that reflects the as-drilled size of the wellbore.

Operator has proposed to pump down 9-5/8" X 7-5/8" annulus after primary cementing stage. Operator must run Echo-meter to verify Cement Slurry/Fluid top in the annulus Or operator shall run a CBL from TD of the 7-5/8" casing to surface after the second stage BH to verify TOC.
Submit results to the BLM. No displacement fluid/wash out shall be utilized at the top of the cement slurry between second stage BH and top out. Operator must run one CBL per Well Pad.

If cement does not reach surface, the next casing string must come to surface.

Operator must use a limited flush fluid volume of 1 bbl following backside cementing procedures.

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 is required if washout occurs. Adjust cement volume and excess based on a fluid caliper or similar method that reflects the as-drilled size of the wellbore.

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 **9-5/8** inch 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:

Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the **9-5/8** inch 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 43 CFR 3172.6(b)(9) must be followed.

D. SPECIAL REQUIREMENT (S)

Casing Clearance

Operator casing variance is approved for the utilization of 5-1/2 inch Vam Sprint SF **from** base of curve and a minimum of 500 feet or the minimum tie-back requirement above, whichever is greater into the previous casing shoe. **All** other 5-1/2 inch casing will run Varn or equivalent.

Operator shall clean up cycles until wellbore is clear of cuttings and any large debris, ensure cutting sizes are less than 0.5 micron before cementing.

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)

☑ Lea County
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240,
(575) 689-5981

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 **43 CFR part 3170 Subpart 3172** 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 when present.

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 integrity 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 integrity test can be done (prior to the cement setting up) immediately after bumping the plug.

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

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

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

7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in **43 CFR part 3170 Subpart 3172** and **API STD 53 Sec. 5.3**.

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 43 CFR 3172.6(b)(9) 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 cement), whichever is greater. However, if the float does not hold, cut-

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

b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the cement plug. The BOPE test can be initiated after bumping the cement plug with the casing valve open. (only applies to single stage cement jobs, prior to the cement setting up.)

c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to **43 CFR part 3170 Subpart 3172** 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 **43 CFR part 3170 Subpart 3172**.

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.

Long Vo (LVO) 5/9/2024

1. Geologic Formations

TVD of target	13450	Pilot hole depth	N/A
MD at TD:	23738	Deepest expected fresh water	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone?	Hazards*
Rustler	785		
Salt	1060		
Base of Salt	5250		
Delaware	5300		
Cherry Canyon	6353		
Brushy Canyon	7996		
1st Bone Spring Lime	9529		
Bone Spring 1st	10475		
Bone Spring 2nd	11421		
3rd Bone Spring Lime	11487		
Bone Spring 3rd	12100		
Wolfcamp	12560		

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

FIGHTING OKRA 18-19 FED 27H

2. Casing Program (Primary Design)

Hole Size	Csg. Size	Wt (PPF)	Grade	Conn	Casing Interval From (MD)	Casing Interval To (MD)	Casing Interval From (TVD)	Casing Interval To (TVD)
13 1/2	9 5/8	40	J-55	BTC	0	810	0	810
8 3/4	7 5/8	29.7	P-110HSCY	MOFXL	0	12000	0	12000
6 3/4	5 1/2	20	P110	VARN & Sprint SF	0	23738	0	13450

•All casing strings will be tested in accordance with 43 CFR 3172.

Variance Approval -

o 5-1/2" Production Casing will include Sprint SF connection from base of curve to 500ft inside 7 5/8" casing shoe

o All other 5-1/2" Production Casing will run VARN (6.05") or equivalent

3. Cementing Program (Primary Design)

Assuming no returns are established while drilling, Devon requests to pump a two stage cement job on the intermediate casing string with the first stage being pumped conventionally with the calculated top of cement at the Brushy Canyon and the second stage performed as a bradenhead squeeze with planned cement from the Brushy Canyon to surface. The final cement top will be verified by Echo-meter. Devon will include the Echo-meter verified fluid top and the volume of displacement fluid above the cement slurry in the annulus in all post-drill sundries on wells utilizing this cement program. Devon will report to the BLM the volume of fluid (limited to 1 bbls) used to flush intermediate casing valves following backside cementing procedures

3. Cementing Program (Primary Design)

Casing	# Sks	TOC	Wt. ppg	Yld (ft3/sack)	Slurry Description
Surface	459	Surf	13.2	1.44	Lead: Class C Cement + additives
Int 1	485	Surf	9	2.3	Lead: Class C Cement + additives
	383	8679	13.2	1.44	Tail: Class H / C + additives
Int 1 Intermediate Squeeze	630	Surf	13.2	1.44	Squeeze Lead: Class C Cement + additives
	485	Surf	9	2.3	Lead: Class C Cement + additives
	383	8679	13.2	1.44	Tail: Class H / C + additives
Production	62	10922	9	3.27	Lead: Class H /C + additives
	690	12922	13.2	1.44	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	13-5/8"	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	7344
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.

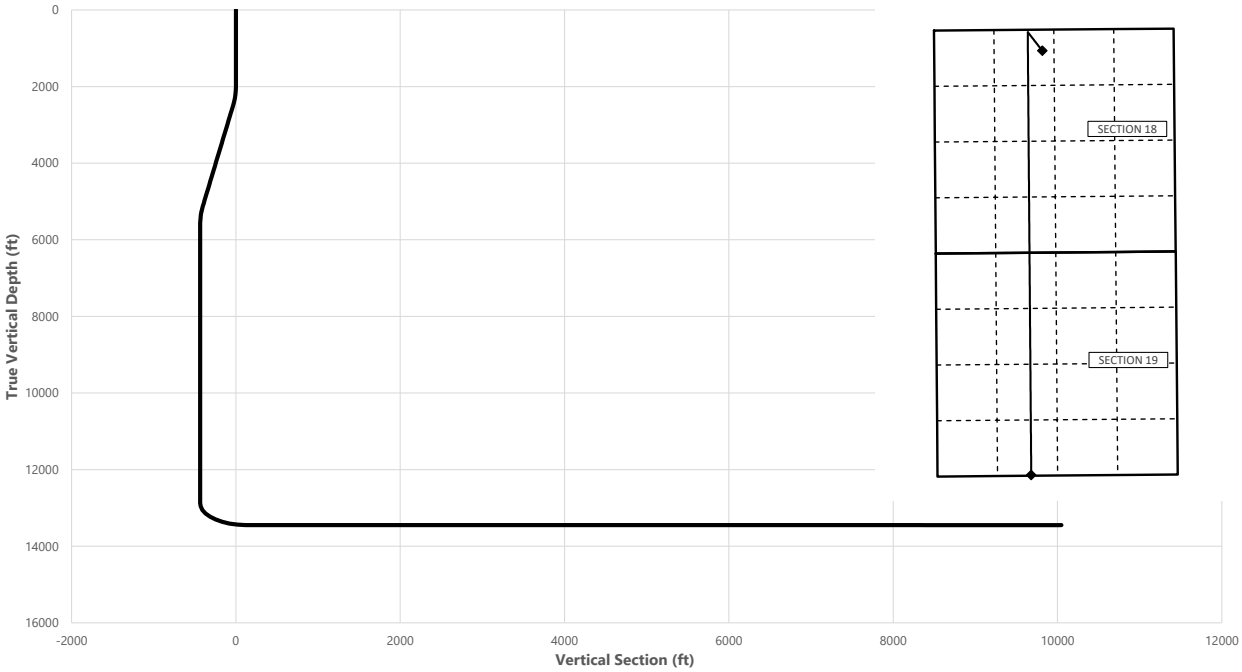
Attachments

X Directional Plan
_____ Other, describe

Well: FIGHTING OKRA 18-19 FED 27H
County: Lea
Wellbore: Permit Plan
Design: Permit Plan #1

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

MD (ft)	INC (°)	AZI (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Comment
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL
2000.00	0.00	324.00	2000.00	0.00	0.00	0.00	0.00	Start Tangent
2500.00	10.00	324.00	2497.47	35.21	-25.58	-34.58	2.00	Hold Tangent
5152.34	10.00	324.00	5109.51	407.82	-296.30	-400.48	0.00	Drop to Vertical
5652.34	0.00	324.00	5606.98	443.03	-321.88	-435.05	2.00	Hold Vertical
12922.41	0.00	179.58	12877.04	443.03	-321.88	-435.05	0.00	KOP
13822.41	90.00	179.58	13450.00	-129.91	-317.68	137.62	10.00	Landing Point
23737.76	90.00	179.58	13450.00	-10045.00	-245.00	10047.99	0.00	BHL



Key Depths	MD (ft)	TVD (ft)
Rustler	785.00	785.00
Salt	1060.00	1060.00
Base of Salt	5294.43	5250.00
Delaware	5344.77	5300.00
Cherry Canyon	6398.36	6353.00
Brushy Canyon	8041.36	7996.00
1st Bone Spring Lime	9574.36	9529.00
Bone Spring 1st	10520.36	10475.00
Bone Spring 2nd	11466.36	11421.00
3rd Bone Spring Lime	11532.36	11487.00
Bone Spring 3rd	12145.36	12100.00
Wolfcamp / Point of Penetration	12605.36	12560.00
exit	23657.76	13450.01

	MD (ft)	TVD (ft)	Lat (°)	Long (°)	Section Footages
SHL	0.00	0.00	32.0492	-103.5099	500' FNL, 2390' FWL of Sec 18 in T26S, R34E
KOP	12922.41	12877.04	32.0505	-103.5109	54' FNL, 2072' FWL of Sec 18 in T26S, R34E
Point of Penetration	12605.36	12560.00	32.0504	-103.5109	100' FNL , 2071' FWL of Sec 18 in T26S, R34E
Exit	23657.76	13450.01	32.0219	-103.5109	100' FSL, 2071' FWL of Sec 19 in T26S, R34E
BHL	23737.76	13450.00	32.0216	-103.5109	20' FSL, 2071' FWL of Sec 19 in T26S, R34E

	Y	X	MD
KOP	383097	796161	12922.41

devon

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Zone: 3001 - NM East (NAD83)

MD (ft)	INC (°)	AZI (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Comment
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL
100.00	0.00	324.00	100.00	0.00	0.00	0.00	0.00	
200.00	0.00	324.00	200.00	0.00	0.00	0.00	0.00	
300.00	0.00	324.00	300.00	0.00	0.00	0.00	0.00	
400.00	0.00	324.00	400.00	0.00	0.00	0.00	0.00	
500.00	0.00	324.00	500.00	0.00	0.00	0.00	0.00	
600.00	0.00	324.00	600.00	0.00	0.00	0.00	0.00	
700.00	0.00	324.00	700.00	0.00	0.00	0.00	0.00	
785.00	0.00	324.00	785.00	0.00	0.00	0.00	0.00	Rustler
800.00	0.00	324.00	800.00	0.00	0.00	0.00	0.00	
900.00	0.00	324.00	900.00	0.00	0.00	0.00	0.00	
1000.00	0.00	324.00	1000.00	0.00	0.00	0.00	0.00	
1060.00	0.00	324.00	1060.00	0.00	0.00	0.00	0.00	Salt
1100.00	0.00	324.00	1100.00	0.00	0.00	0.00	0.00	
1200.00	0.00	324.00	1200.00	0.00	0.00	0.00	0.00	
1300.00	0.00	324.00	1300.00	0.00	0.00	0.00	0.00	
1400.00	0.00	324.00	1400.00	0.00	0.00	0.00	0.00	
1500.00	0.00	324.00	1500.00	0.00	0.00	0.00	0.00	
1600.00	0.00	324.00	1600.00	0.00	0.00	0.00	0.00	
1700.00	0.00	324.00	1700.00	0.00	0.00	0.00	0.00	
1800.00	0.00	324.00	1800.00	0.00	0.00	0.00	0.00	
1900.00	0.00	324.00	1900.00	0.00	0.00	0.00	0.00	
2000.00	0.00	324.00	2000.00	0.00	0.00	0.00	0.00	Start Tangent
2100.00	2.00	324.00	2099.98	1.41	-1.03	-1.39	2.00	
2200.00	4.00	324.00	2199.84	5.65	-4.10	-5.54	2.00	
2300.00	6.00	324.00	2299.45	12.70	-9.22	-12.47	2.00	
2400.00	8.00	324.00	2398.70	22.56	-16.39	-22.15	2.00	
2500.00	10.00	324.00	2497.47	35.21	-25.58	-34.58	2.00	Hold Tangent
2600.00	10.00	324.00	2595.95	49.26	-35.79	-48.37	0.00	
2700.00	10.00	324.00	2694.43	63.31	-46.00	-62.17	0.00	
2800.00	10.00	324.00	2792.91	77.36	-56.20	-75.96	0.00	
2900.00	10.00	324.00	2891.39	91.40	-66.41	-89.76	0.00	
3000.00	10.00	324.00	2989.87	105.45	-76.62	-103.55	0.00	
3100.00	10.00	324.00	3088.35	119.50	-86.82	-117.35	0.00	
3200.00	10.00	324.00	3186.83	133.55	-97.03	-131.14	0.00	
3300.00	10.00	324.00	3285.31	147.60	-107.24	-144.94	0.00	
3400.00	10.00	324.00	3383.79	161.65	-117.44	-158.73	0.00	
3500.00	10.00	324.00	3482.27	175.69	-127.65	-172.53	0.00	
3600.00	10.00	324.00	3580.75	189.74	-137.86	-186.32	0.00	
3700.00	10.00	324.00	3679.23	203.79	-148.06	-200.12	0.00	
3800.00	10.00	324.00	3777.72	217.84	-158.27	-213.92	0.00	
3900.00	10.00	324.00	3876.20	231.89	-168.48	-227.71	0.00	
4000.00	10.00	324.00	3974.68	245.94	-178.68	-241.51	0.00	
4100.00	10.00	324.00	4073.16	259.98	-188.89	-255.30	0.00	
4200.00	10.00	324.00	4171.64	274.03	-199.10	-269.10	0.00	
4300.00	10.00	324.00	4270.12	288.08	-209.31	-282.89	0.00	
4400.00	10.00	324.00	4368.60	302.13	-219.51	-296.69	0.00	
4500.00	10.00	324.00	4467.08	316.18	-229.72	-310.48	0.00	
4600.00	10.00	324.00	4565.56	330.23	-239.93	-324.28	0.00	
4700.00	10.00	324.00	4664.04	344.27	-250.13	-338.07	0.00	
4800.00	10.00	324.00	4762.52	358.32	-260.34	-351.87	0.00	
4900.00	10.00	324.00	4861.00	372.37	-270.55	-365.66	0.00	
5000.00	10.00	324.00	4959.48	386.42	-280.75	-379.46	0.00	
5100.00	10.00	324.00	5057.97	400.47	-290.96	-393.25	0.00	
5152.34	10.00	324.00	5109.51	407.82	-296.30	-400.48	0.00	Drop to Vertical
5200.00	9.05	324.00	5156.51	414.20	-300.94	-406.74	2.00	
5294.43	7.16	324.00	5250.00	424.97	-308.76	-417.31	2.00	Base of Salt
5300.00	7.05	324.00	5255.52	425.53	-309.16	-417.86	2.00	
5344.77	6.15	324.00	5300.00	429.69	-312.19	-421.95	2.00	Delaware
5400.00	5.05	324.00	5354.96	434.05	-315.35	-426.23	2.00	
5500.00	3.05	324.00	5454.71	439.76	-319.50	-431.84	2.00	
5600.00	1.05	324.00	5554.64	442.65	-321.60	-434.67	2.00	
5652.34	0.00	324.00	5606.98	443.03	-321.88	-435.05	2.00	Hold Vertical
5700.00	0.00	179.58	5654.64	443.03	-321.88	-435.05	0.00	
5800.00	0.00	179.58	5754.64	443.03	-321.88	-435.05	0.00	
5900.00	0.00	179.58	5854.64	443.03	-321.88	-435.05	0.00	
6000.00	0.00	179.58	5954.64	443.03	-321.88	-435.05	0.00	
6100.00	0.00	179.58	6054.64	443.03	-321.88	-435.05	0.00	
6200.00	0.00	179.58	6154.64	443.03	-321.88	-435.05	0.00	
6300.00	0.00	179.58	6254.64	443.03	-321.88	-435.05	0.00	

devon

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Zone: 3001 - NM East (NAD83)

MD (ft)	INC (°)	AZI (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Comment
6398.36	0.00	179.58	6353.00	443.03	-321.88	-435.05	0.00	Cherry Canyon
6400.00	0.00	179.58	6354.64	443.03	-321.88	-435.05	0.00	
6500.00	0.00	179.58	6454.64	443.03	-321.88	-435.05	0.00	
6600.00	0.00	179.58	6554.64	443.03	-321.88	-435.05	0.00	
6700.00	0.00	179.58	6654.64	443.03	-321.88	-435.05	0.00	
6800.00	0.00	179.58	6754.64	443.03	-321.88	-435.05	0.00	
6900.00	0.00	179.58	6854.64	443.03	-321.88	-435.05	0.00	
7000.00	0.00	179.58	6954.64	443.03	-321.88	-435.05	0.00	
7100.00	0.00	179.58	7054.64	443.03	-321.88	-435.05	0.00	
7200.00	0.00	179.58	7154.64	443.03	-321.88	-435.05	0.00	
7300.00	0.00	179.58	7254.64	443.03	-321.88	-435.05	0.00	
7400.00	0.00	179.58	7354.64	443.03	-321.88	-435.05	0.00	
7500.00	0.00	179.58	7454.64	443.03	-321.88	-435.05	0.00	
7600.00	0.00	179.58	7554.64	443.03	-321.88	-435.05	0.00	
7700.00	0.00	179.58	7654.64	443.03	-321.88	-435.05	0.00	
7800.00	0.00	179.58	7754.64	443.03	-321.88	-435.05	0.00	
7900.00	0.00	179.58	7854.64	443.03	-321.88	-435.05	0.00	
8000.00	0.00	179.58	7954.64	443.03	-321.88	-435.05	0.00	
8041.36	0.00	179.58	7996.00	443.03	-321.88	-435.05	0.00	Brushy Canyon
8100.00	0.00	179.58	8054.64	443.03	-321.88	-435.05	0.00	
8200.00	0.00	179.58	8154.64	443.03	-321.88	-435.05	0.00	
8300.00	0.00	179.58	8254.64	443.03	-321.88	-435.05	0.00	
8400.00	0.00	179.58	8354.64	443.03	-321.88	-435.05	0.00	
8500.00	0.00	179.58	8454.64	443.03	-321.88	-435.05	0.00	
8600.00	0.00	179.58	8554.64	443.03	-321.88	-435.05	0.00	
8700.00	0.00	179.58	8654.64	443.03	-321.88	-435.05	0.00	
8800.00	0.00	179.58	8754.64	443.03	-321.88	-435.05	0.00	
8900.00	0.00	179.58	8854.64	443.03	-321.88	-435.05	0.00	
9000.00	0.00	179.58	8954.64	443.03	-321.88	-435.05	0.00	
9100.00	0.00	179.58	9054.64	443.03	-321.88	-435.05	0.00	
9200.00	0.00	179.58	9154.64	443.03	-321.88	-435.05	0.00	
9300.00	0.00	179.58	9254.64	443.03	-321.88	-435.05	0.00	
9400.00	0.00	179.58	9354.64	443.03	-321.88	-435.05	0.00	
9500.00	0.00	179.58	9454.64	443.03	-321.88	-435.05	0.00	
9574.36	0.00	179.58	9529.00	443.03	-321.88	-435.05	0.00	1st Bone Spring Lime
9600.00	0.00	179.58	9554.64	443.03	-321.88	-435.05	0.00	
9700.00	0.00	179.58	9654.64	443.03	-321.88	-435.05	0.00	
9800.00	0.00	179.58	9754.64	443.03	-321.88	-435.05	0.00	
9900.00	0.00	179.58	9854.64	443.03	-321.88	-435.05	0.00	
10000.00	0.00	179.58	9954.64	443.03	-321.88	-435.05	0.00	
10100.00	0.00	179.58	10054.64	443.03	-321.88	-435.05	0.00	
10200.00	0.00	179.58	10154.64	443.03	-321.88	-435.05	0.00	
10300.00	0.00	179.58	10254.64	443.03	-321.88	-435.05	0.00	
10400.00	0.00	179.58	10354.64	443.03	-321.88	-435.05	0.00	
10500.00	0.00	179.58	10454.64	443.03	-321.88	-435.05	0.00	
10520.36	0.00	179.58	10475.00	443.03	-321.88	-435.05	0.00	Bone Spring 1st
10600.00	0.00	179.58	10554.64	443.03	-321.88	-435.05	0.00	
10700.00	0.00	179.58	10654.64	443.03	-321.88	-435.05	0.00	
10800.00	0.00	179.58	10754.64	443.03	-321.88	-435.05	0.00	
10900.00	0.00	179.58	10854.64	443.03	-321.88	-435.05	0.00	
11000.00	0.00	179.58	10954.64	443.03	-321.88	-435.05	0.00	
11100.00	0.00	179.58	11054.64	443.03	-321.88	-435.05	0.00	
11200.00	0.00	179.58	11154.64	443.03	-321.88	-435.05	0.00	
11300.00	0.00	179.58	11254.64	443.03	-321.88	-435.05	0.00	
11400.00	0.00	179.58	11354.64	443.03	-321.88	-435.05	0.00	
11466.36	0.00	179.58	11421.00	443.03	-321.88	-435.05	0.00	Bone Spring 2nd
11500.00	0.00	179.58	11454.64	443.03	-321.88	-435.05	0.00	
11532.36	0.00	179.58	11487.00	443.03	-321.88	-435.05	0.00	3rd Bone Spring Lime
11600.00	0.00	179.58	11554.64	443.03	-321.88	-435.05	0.00	
11700.00	0.00	179.58	11654.64	443.03	-321.88	-435.05	0.00	
11800.00	0.00	179.58	11754.64	443.03	-321.88	-435.05	0.00	
11900.00	0.00	179.58	11854.64	443.03	-321.88	-435.05	0.00	
12000.00	0.00	179.58	11954.64	443.03	-321.88	-435.05	0.00	
12100.00	0.00	179.58	12054.64	443.03	-321.88	-435.05	0.00	
12145.36	0.00	179.58	12100.00	443.03	-321.88	-435.05	0.00	Bone Spring 3rd
12200.00	0.00	179.58	12154.64	443.03	-321.88	-435.05	0.00	
12300.00	0.00	179.58	12254.64	443.03	-321.88	-435.05	0.00	
12400.00	0.00	179.58	12354.64	443.03	-321.88	-435.05	0.00	
12500.00	0.00	179.58	12454.64	443.03	-321.88	-435.05	0.00	
12600.00	0.00	179.58	12554.64	443.03	-321.88	-435.05	0.00	

devon

Well: FIGHTING OKRA 18-19 FED 27H
County: Lea
Wellbore: Permit Plan
Design: Permit Plan #1

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

MD (ft)	INC (°)	AZI (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Comment
12605.36	0.00	179.58	12560.00	443.03	-321.88	-435.05	0.00	Wolfcamp / Point
12700.00	0.00	179.58	12654.64	443.03	-321.88	-435.05	0.00	
12800.00	0.00	179.58	12754.64	443.03	-321.88	-435.05	0.00	
12900.00	0.00	179.58	12854.64	443.03	-321.88	-435.05	0.00	
12922.41	0.00	179.58	12877.04	443.03	-321.88	-435.05	0.00	KOP
13000.00	7.76	179.58	12954.40	437.79	-321.84	-429.81	10.00	
13100.00	17.76	179.58	13051.81	415.73	-321.68	-407.76	10.00	
13200.00	27.76	179.58	13143.90	377.09	-321.40	-369.14	10.00	
13300.00	37.76	179.58	13227.89	323.05	-321.00	-315.13	10.00	
13400.00	47.76	179.58	13301.22	255.25	-320.51	-247.36	10.00	
13500.00	57.76	179.58	13361.66	175.74	-319.92	-167.89	10.00	
13600.00	67.76	179.58	13407.37	86.95	-319.27	-79.14	10.00	
13700.00	77.76	179.58	13436.97	-8.44	-318.57	16.20	10.00	
13800.00	87.76	179.58	13449.56	-107.51	-317.85	115.23	10.00	
13822.41	90.00	179.58	13450.00	-129.91	-317.68	137.62	10.00	Landing Point
13900.00	90.00	179.58	13450.00	-207.50	-317.11	215.17	0.00	
14000.00	90.00	179.58	13450.00	-307.50	-316.38	315.12	0.00	
14100.00	90.00	179.58	13450.00	-407.50	-315.65	415.07	0.00	
14200.00	90.00	179.58	13450.00	-507.49	-314.91	515.02	0.00	
14300.00	90.00	179.58	13450.00	-607.49	-314.18	614.97	0.00	
14400.00	90.00	179.58	13450.00	-707.49	-313.45	714.92	0.00	
14500.00	90.00	179.58	13450.00	-807.49	-312.71	814.87	0.00	
14600.00	90.00	179.58	13450.00	-907.48	-311.98	914.82	0.00	
14700.00	90.00	179.58	13450.00	-1007.48	-311.25	1014.77	0.00	
14800.00	90.00	179.58	13450.00	-1107.48	-310.51	1114.72	0.00	
14900.00	90.00	179.58	13450.00	-1207.47	-309.78	1214.67	0.00	
15000.00	90.00	179.58	13450.00	-1307.47	-309.05	1314.62	0.00	
15100.00	90.00	179.58	13450.00	-1407.47	-308.31	1414.57	0.00	
15200.00	90.00	179.58	13450.00	-1507.47	-307.58	1514.52	0.00	
15300.00	90.00	179.58	13450.00	-1607.46	-306.85	1614.47	0.00	
15400.00	90.00	179.58	13450.00	-1707.46	-306.11	1714.42	0.00	
15500.00	90.00	179.58	13450.00	-1807.46	-305.38	1814.37	0.00	
15600.00	90.00	179.58	13450.00	-1907.46	-304.65	1914.32	0.00	
15700.00	90.00	179.58	13450.00	-2007.45	-303.91	2014.27	0.00	
15800.00	90.00	179.58	13450.00	-2107.45	-303.18	2114.22	0.00	
15900.00	90.00	179.58	13450.00	-2207.45	-302.45	2214.17	0.00	
16000.00	90.00	179.58	13450.00	-2307.45	-301.71	2314.12	0.00	
16100.00	90.00	179.58	13450.00	-2407.44	-300.98	2414.07	0.00	
16200.00	90.00	179.58	13450.00	-2507.44	-300.25	2514.02	0.00	
16300.00	90.00	179.58	13450.00	-2607.44	-299.51	2613.97	0.00	
16400.00	90.00	179.58	13450.00	-2707.43	-298.78	2713.91	0.00	
16500.00	90.00	179.58	13450.00	-2807.43	-298.05	2813.86	0.00	
16600.00	90.00	179.58	13450.00	-2907.43	-297.31	2913.81	0.00	
16700.00	90.00	179.58	13450.00	-3007.43	-296.58	3013.76	0.00	
16800.00	90.00	179.58	13450.00	-3107.42	-295.85	3113.71	0.00	
16900.00	90.00	179.58	13450.00	-3207.42	-295.11	3213.66	0.00	
17000.00	90.00	179.58	13450.00	-3307.42	-294.38	3313.61	0.00	
17100.00	90.00	179.58	13450.00	-3407.42	-293.65	3413.56	0.00	
17200.00	90.00	179.58	13450.00	-3507.41	-292.91	3513.51	0.00	
17300.00	90.00	179.58	13450.00	-3607.41	-292.18	3613.46	0.00	
17400.00	90.00	179.58	13450.00	-3707.41	-291.45	3713.41	0.00	
17500.00	90.00	179.58	13450.00	-3807.40	-290.71	3813.36	0.00	
17600.00	90.00	179.58	13450.00	-3907.40	-289.98	3913.31	0.00	
17700.00	90.00	179.58	13450.00	-4007.40	-289.25	4013.26	0.00	
17800.00	90.00	179.58	13450.00	-4107.40	-288.52	4113.21	0.00	
17900.00	90.00	179.58	13450.00	-4207.39	-287.78	4213.16	0.00	
18000.00	90.00	179.58	13450.00	-4307.39	-287.05	4313.11	0.00	
18100.00	90.00	179.58	13450.01	-4407.39	-286.32	4413.06	0.00	
18200.00	90.00	179.58	13450.01	-4507.39	-285.58	4513.01	0.00	
18300.00	90.00	179.58	13450.01	-4607.38	-284.85	4612.96	0.00	
18400.00	90.00	179.58	13450.01	-4707.38	-284.12	4712.91	0.00	
18500.00	90.00	179.58	13450.01	-4807.38	-283.38	4812.86	0.00	
18600.00	90.00	179.58	13450.01	-4907.38	-282.65	4912.81	0.00	
18700.00	90.00	179.58	13450.01	-5007.37	-281.92	5012.76	0.00	
18800.00	90.00	179.58	13450.01	-5107.37	-281.18	5112.71	0.00	
18900.00	90.00	179.58	13450.01	-5207.37	-280.45	5212.66	0.00	
19000.00	90.00	179.58	13450.01	-5307.36	-279.72	5312.61	0.00	
19100.00	90.00	179.58	13450.01	-5407.36	-278.98	5412.56	0.00	
19200.00	90.00	179.58	13450.01	-5507.36	-278.25	5512.51	0.00	
19300.00	90.00	179.58	13450.01	-5607.36	-277.52	5612.46	0.00	

devon

Well: FIGHTING OKRA 18-19 FED 27H
County: Lea
Wellbore: Permit Plan
Design: Permit Plan #1

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

MD (ft)	INC (°)	AZI (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Comment
19400.00	90.00	179.58	13450.01	-5707.35	-276.78	5712.41	0.00	
19500.00	90.00	179.58	13450.01	-5807.35	-276.05	5812.36	0.00	
19600.00	90.00	179.58	13450.01	-5907.35	-275.32	5912.31	0.00	
19700.00	90.00	179.58	13450.01	-6007.35	-274.58	6012.25	0.00	
19800.00	90.00	179.58	13450.01	-6107.34	-273.85	6112.20	0.00	
19900.00	90.00	179.58	13450.01	-6207.34	-273.12	6212.15	0.00	
20000.00	90.00	179.58	13450.01	-6307.34	-272.38	6312.10	0.00	
20100.00	90.00	179.58	13450.01	-6407.33	-271.65	6412.05	0.00	
20200.00	90.00	179.58	13450.01	-6507.33	-270.92	6512.00	0.00	
20300.00	90.00	179.58	13450.01	-6607.33	-270.18	6611.95	0.00	
20400.00	90.00	179.58	13450.01	-6707.33	-269.45	6711.90	0.00	
20500.00	90.00	179.58	13450.01	-6807.32	-268.72	6811.85	0.00	
20600.00	90.00	179.58	13450.01	-6907.32	-267.98	6911.80	0.00	
20700.00	90.00	179.58	13450.01	-7007.32	-267.25	7011.75	0.00	
20800.00	90.00	179.58	13450.01	-7107.32	-266.52	7111.70	0.00	
20900.00	90.00	179.58	13450.01	-7207.31	-265.78	7211.65	0.00	
21000.00	90.00	179.58	13450.01	-7307.31	-265.05	7311.60	0.00	
21100.00	90.00	179.58	13450.01	-7407.31	-264.32	7411.55	0.00	
21200.00	90.00	179.58	13450.01	-7507.31	-263.58	7511.50	0.00	
21300.00	90.00	179.58	13450.01	-7607.30	-262.85	7611.45	0.00	
21400.00	90.00	179.58	13450.01	-7707.30	-262.12	7711.40	0.00	
21500.00	90.00	179.58	13450.01	-7807.30	-261.38	7811.35	0.00	
21600.00	90.00	179.58	13450.01	-7907.29	-260.65	7911.30	0.00	
21700.00	90.00	179.58	13450.01	-8007.29	-259.92	8011.25	0.00	
21800.00	90.00	179.58	13450.01	-8107.29	-259.18	8111.20	0.00	
21900.00	90.00	179.58	13450.01	-8207.29	-258.45	8211.15	0.00	
22000.00	90.00	179.58	13450.01	-8307.28	-257.72	8311.10	0.00	
22100.00	90.00	179.58	13450.01	-8407.28	-256.98	8411.05	0.00	
22200.00	90.00	179.58	13450.01	-8507.28	-256.25	8511.00	0.00	
22300.00	90.00	179.58	13450.01	-8607.28	-255.52	8610.95	0.00	
22400.00	90.00	179.58	13450.01	-8707.27	-254.78	8710.90	0.00	
22500.00	90.00	179.58	13450.01	-8807.27	-254.05	8810.85	0.00	
22600.00	90.00	179.58	13450.01	-8907.27	-253.32	8910.80	0.00	
22700.00	90.00	179.58	13450.01	-9007.26	-252.58	9010.75	0.00	
22800.00	90.00	179.58	13450.01	-9107.26	-251.85	9110.70	0.00	
22900.00	90.00	179.58	13450.01	-9207.26	-251.12	9210.65	0.00	
23000.00	90.00	179.58	13450.01	-9307.26	-250.38	9310.59	0.00	
23100.00	90.00	179.58	13450.01	-9407.25	-249.65	9410.54	0.00	
23200.00	90.00	179.58	13450.01	-9507.25	-248.92	9510.49	0.00	
23300.00	90.00	179.58	13450.01	-9607.25	-248.18	9610.44	0.00	
23400.00	90.00	179.58	13450.01	-9707.25	-247.45	9710.39	0.00	
23500.00	90.00	179.58	13450.01	-9807.24	-246.72	9810.34	0.00	
23600.00	90.00	179.58	13450.01	-9907.24	-245.98	9910.29	0.00	
23657.76	90.00	179.58	13450.01	-9965.00	-245.56	9968.03	0.00	exit
23700.00	90.00	179.58	13450.01	-10007.24	-245.25	10010.24	0.00	
23737.76	90.00	179.58	13450.00	-10045.00	-245.00	10047.99	0.00	BHL

TECHNICAL DATA SHEET

Connection: **VAroughneck SC (OD=6.051in)**

Size: **5 1/2 in X 20.00 lb/ft**

Drift: **standard**

Bevel: **standard**

Grade: **VA-EP-P110**

Material:

	US Customary	Metric
Yield Strength Min.	125,000 psi	862 Mpa
Yield Strength Max.	140,000 psi	965 Mpa
Tensile Strength Min.	125,000 psi	862 Mpa

Pipe:

	US Customary	Metric		US Customary	Metric
Nominal OD:	5.500 in	139.70 mm	Wall Thickness:	0.361 in	9.17 mm
Nominal ID:	4.778 in	121.36 mm	Standard Drift:	4.653 in	118.19 mm
Nominal Weight:	20.00 lb/ft	30.07 kg/m	Pipe Body Yield Strength:	729 klb	3,240 kN
Pipe Cross Section:	5.828 in²	3,759.99 mm²			

Connection:

	US Customary	Metric		
OD:	6.051 in	153.70 mm	Threads per inch:	5 Threads
ID:	4.764 in	121.00 mm		
Length:	8.976 in	228.00 mm		

Connection Performance (Uniaxial Load):

	US Customary	Metric		US Customary	Metric
Joint Strength:	729 klb	3,240 kN	Tension Efficiency:	> 100.0 %	
Collapse Resistance:.	13,300 psi	91.70 Mpa	Displacement:	1.240 gal/ft	15.40 l/m
Internal Yield Pressure:	14,360 psi	99.00 Mpa	Production:	0.932 gal/ft	11.57 l/m
Load on Coupling Face:	411 klb	1,830 kN			

Field Make Up (Friction Factor = 1.0):

	US Customary	Metric		US Customary	Metric
Minimum Torque:	15,820 ft.lb	21,450 Nm	Make-Up Loss:	4.370 in	111.00 mm
Optimum Torque:	17,580 ft.lb	23,835 Nm	Yield Torque:	22,000 ft.lb	29,800 Nm
Maximum Torque:	19,340 ft.lb	26,220 Nm			
Min. Torque on Shoulder:	%				

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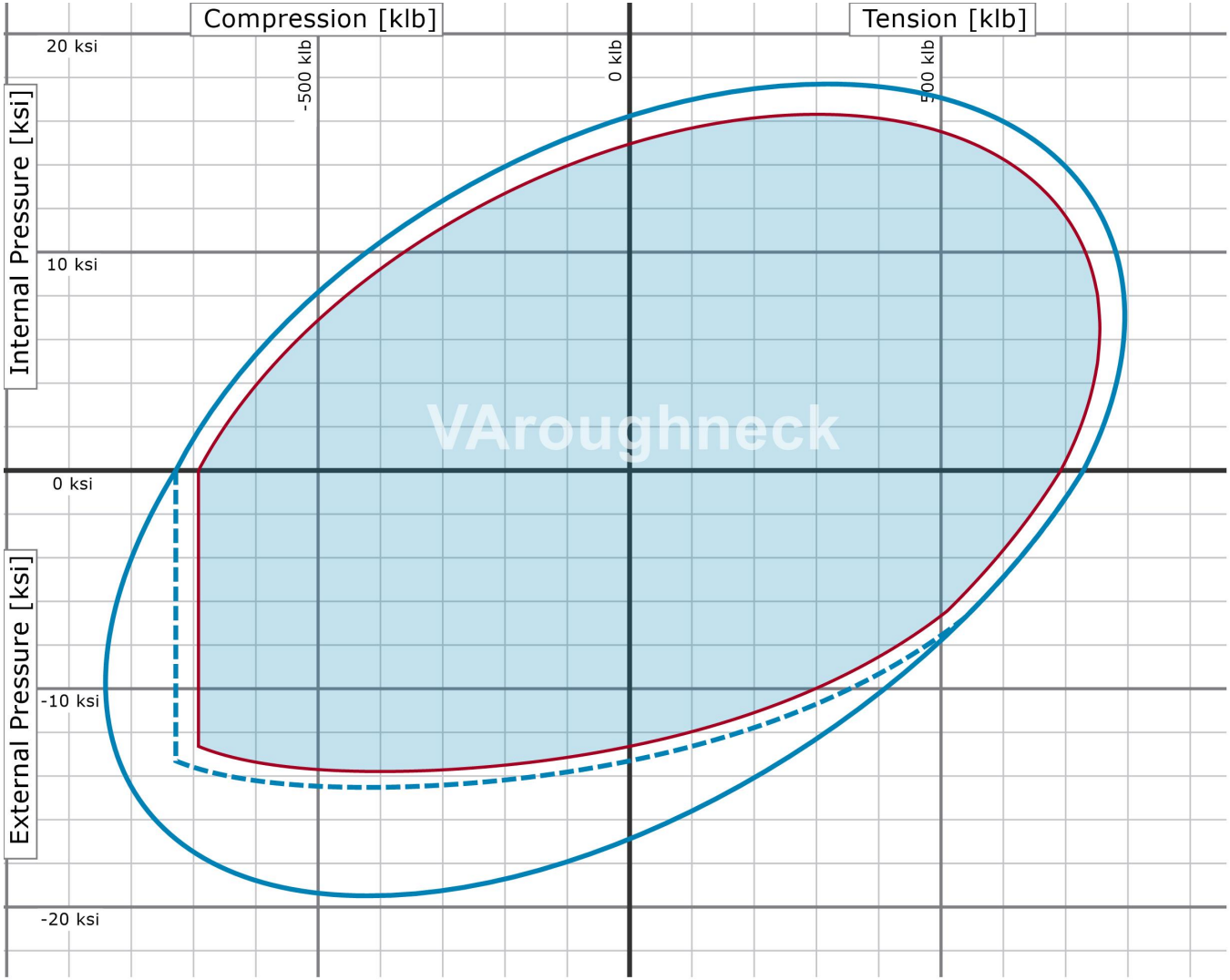
ONE STEP AHEAD.

LOAD ENVELOPE



Recommended Field of Application

Pipe Body Envelope

Pipe Body Collapse

Efficiency (% Pipe Body) under Uniaxial Loads	
Tension:	100.0 %
Compression:	100.0 %
Internal Pressure:	100.0 %
External Pressure:	100.0 %

Sealability Rating (% Efficiency) under Combined Loads	
Tension:	100.0 %
Compression:	100.0 %
Internal Pressure:	100.0 %
External Pressure:	100.0 %

Test Conditions	
Test Medium:	Fluid
Von Mises Envelope:	95.0 %
Bending:	20.00 °/100ft

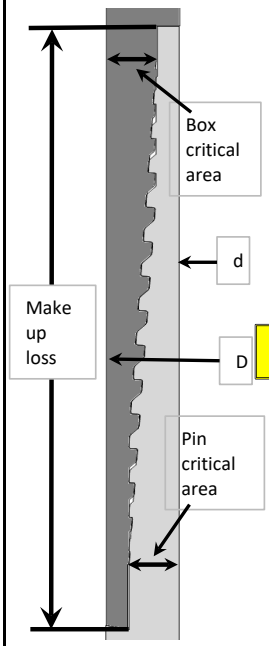
The graph is calculated under consideration of the requirements of EN ISO 13679 and API 5C3. The combined loads are calculated without the consideration of wall thickness tolerances and differ from the values in the data sheet, which are calculated with tolerances determined by API. Any printout is NOT SUBJECT TO REGULAR REVISION. The generated performance envelope shall solely be used as a tool to facilitate the comparison of performance properties under combined loads, of different grades, sizes and connections of voestalpine Tubulars products. Field-specific safety/design factors as well as other loads are not considered. Thus the results shall by no means be used to replace the own string design engineering or to justify any warranty/guaranty cases.

voestalpine
ONE STEP AHEAD.

Metal One Corp.	MO-FXL *1 Pipe Body: BMP P110HSCY MinYS125ksi Min95%WT Connection Data Sheet	CDS#	MO-FXL 7-5/8 29.7 P110HSCY MinYS125ksi Min95%WT
		Date	20-Sep-23

Geometry

MO-FXL



Pipe Body

Grade *	P110HSCY		P110HSCY	
Pipe OD (D)	7 5/8	in	193.68	mm
Weight	29.70	lb/ft	44.25	kg/m
Actual weight	29.04		43.26	kg/m
Wall Thickness (t)	0.375	in	9.53	mm
Pipe ID (d)	6.875	in	174.63	mm
Pipe body cross section	8.541	in^2	5,510	mm^2
Drift Dia.	6.750	in	171.45	mm

Connection

Box OD (W)	7.625	in	193.68	mm
PIN ID	6.875	in	174.63	mm
Make up Loss	4.219	in	107.16	mm
Box Critical Area	5.714	in^2	3686	mm^2
Joint load efficiency	70	%	70	%
Thread Taper	1 / 10 (1.2" per ft)			
Number of Threads	5 TPI			

Performance

Performance Properties for Pipe Body

S.M.Y.S. *1	1,068	kips	4,749	kN
M.I.Y.P. *1	11,680	psi	80.55	MPa
Collapse Strength *1	7,200	psi	49.66	MPa

Note S.M.Y.S.= Specified Minimum YIELD Strength of Pipe body
M.I.Y.P. = Minimum Internal Yield Pressure of Pipe body

* BMP P110HSCY: MinYS125ksi, Min95%WT, Collapse Strength 7,200psi
Performance Data Sheet: 7.625" 29.7lb/ft P110HSCY Rev3, dated 9/19/2023

Performance Properties for Connection

Tensile Yield load	747 kips (70% of S.M.Y.S.)
Min. Compression Yield	747 kips (70% of S.M.Y.S.)
Internal Pressure	9,340 psi (80% of M.I.Y.P.)
External Pressure	100% of Collapse Strength
Max. DLS (deg. /100ft)	30

Recommended Torque

Min.	15,500	ft-lb	21,000	N-m
Opti.	17,200	ft-lb	23,300	N-m
Max.	18,900	ft-lb	25,600	N-m
Operational Max.	23,600	ft-lb	32,000	N-m

Note : Operational Max. torque can be applied for high torque application

U. S. Steel Tubular Products

9.625" 40.00lbs/ft (0.395" Wall) J55

1/24/2019 2:45:24 PM

MECHANICAL PROPERTIES	Pipe	BTC	LTC	STC	
Minimum Yield Strength	55,000	--	--	--	psi
Maximum Yield Strength	80,000	--	--	--	psi
Minimum Tensile Strength	75,000	--	--	--	psi
DIMENSIONS	**Pipe**	**BTC**	**LTC**	**STC**	
Outside Diameter	9.625	10.625	10.625	10.625	in.
Wall Thickness	0.395	--	--	--	in.
Inside Diameter	8.835	8.835	8.835	8.835	in.
Standard Drift	8.679	8.679	8.679	8.679	in.
Alternate Drift	8.750	8.750	8.750	8.750	in.
Nominal Linear Weight, T&C	40.00	--	--	--	lbs/ft
Plain End Weight	38.97	--	--	--	lbs/ft
PERFORMANCE	**Pipe**	**BTC**	**LTC**	**STC**	
Minimum Collapse Pressure	2,570	2,570	2,570	2,570	psi
Minimum Internal Yield Pressure	3,950	3,950	3,950	3,950	psi
Minimum Pipe Body Yield Strength	630	--	--	--	1,000 lbs
Joint Strength	--	714	520	452	1,000 lbs
Reference Length	--	11,898	8,665	7,529	ft
MAKE-UP DATA	**Pipe**	**BTC**	**LTC**	**STC**	
Make-Up Loss	--	4.81	4.75	3.38	in.
Minimum Make-Up Torque	--	--	3,900	3,390	ft-lbs
Maximum Make-Up Torque	--	--	6,500	5,650	ft-lbs

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

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Fighting Okra 18-19 Fed 27H

9 5/8	surface csg in a		13 1/2	inch hole.		Design Factors			Surface			
Segment	#/ft	Grade		Coupling	Body	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	40.00		j 55	btc	19.44	6.79	0.6	810	11	1.01	12.82	32,400
"B"				btc				0				0
	w/8.4#/g mud, 30min Sfc Csg Test psig:		1,500	Tail Cmt	does not	circ to sfc.	Totals:	810				32,400

Comparison of Proposed to Minimum Required Cement Volumes

Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE	Min Dist Hole-Cplg
13 1/2	0.4887	459	661	396	67	9.00	3905	5M	1.44

Burst Frac Gradient(s) for Segment(s) A, B = , b All > 0.70, OK.

Site plat (pipe racks 5 or 6) as per O.O.1.III.D.4.c not found.

7 5/8	casing inside the		9 5/8			Design Factors			Int 1			
Segment	#/ft	Grade		Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	29.70		p 110	mo-fxl	1.84	1.08	1.03	12,000	1	1.73	1.81	356,400
"B"								0				0
	w/8.4#/g mud, 30min Sfc Csg Test psig:		70				Totals:	12,000				356,400
			The cement volume(s) are intended to achieve a top of		0	ft from surface or a		810				overlap.

Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE	Min Dist Hole-Cplg
8 3/4	0.1005	868	1667	1212	38	10.50	4377	5M	0.56
D V Tool(s):			7996				sum of sx	Σ CuFt	Σ%excess
t by stage % :		314	12				1498	2574	112

Class 'H' tail cmt yld > 1.20

Tail cmt

5 1/2	casing inside the		7 5/8			Design Factors			Prod 1			
Segment	#/ft	Grade		Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	20.00		p 110	varn	2.71	2.12	1.9	11,500	2	3.18	3.55	230,000
"B"	20.00		p 110	vam sprint sf	16.44	1.65	1.96	1,950	2	3.28	2.76	39,000
"C"	20.00		p 110	varn	∞	1.81	1.90	10,288	2	3.18	3.04	205,760
"D"				0				0				0
	w/8.4#/g mud, 30min Sfc Csg Test psig:		2,530				Totals:	23,738				474,760
			The cement volume(s) are intended to achieve a top of		11500	ft from surface or a		500				overlap.

Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE	Min Dist Hole-Cplg
6 3/4	0.0835	752	1196	1027	17	10.50			0.35

Class 'C' tail cmt yld > 1.35

#N/A

0			5 1/2			Design Factors			<Choose Casing>			
Segment	#/ft	Grade		Coupling	#N/A	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"				0.00				0				0
"B"				0.00				0				0
	w/8.4#/g mud, 30min Sfc Csg Test psig:						Totals:	0				0
			Cmt vol calc below includes this csg, TOC intended		#N/A	ft from surface or a		#N/A				overlap.

Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE	Min Dist Hole-Cplg
0		#N/A	#N/A	0	#N/A				

#N/A Capitan Reef est top XXXX.

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

CONDITIONS

Action 343351

CONDITIONS

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 343351
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
pkautz	ALL PREVIOUS COA'S APPLY.	6/15/2024