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

Sundry Print Report

03/15/2022

Well Name: DOS EQUIS 11-14 FEDERAL COM

Well Location: T24S / R32E / SEC 11 / NENW / 32.237909 / -103.64844

County or Parish/State: LEA / NM

Well Number: 25H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM0001917, NMNM30400

Unit or CA Name:

Unit or CA Number:

US Well Number: 3002547646

Well Status: Approved Application for Permit to Drill

Operator: CIMAREX ENERGY COMPANY

Notice of Intent

Sundry ID: 2649268

Type of Submission: Notice of Intent

Type of Action: Other

Date Sundry Submitted: 12/16/2021

Time Sundry Submitted: 02:05

Date proposed operation will begin: 01/15/2021

Procedure Description: Cimarex respectfully requests approval to change the BHL of this well to: 100' FSL & 497' FWL. Cimarex requests to change the formation of the well to Bone Spring. Cimarex requests drilling plan changes as attached. Cimarex requests to perform offline cementing. OLC procedure as follows: 1.Land casing on solid body mandrel hanger. Engage packoff and lockring 2. Install BPV 3. Skid rig 4. Check for pressure and remove BPV 5. Circulate down casing, taking returns through casing valves 6. Pump lead and tail cement 7. Displace cement and bump the plug 8. Ensure floats are holding pressure 9. RD cement crew 10. Install BPV and TA cap. Cimarex requests permission to skid the rig to the next well on the pad to begin operations instead of waiting 8 hours for surface cement to harden on this 25H well. Surface cement will be pumped, we will ensure floats hold, do a green cement test and then Skid to the next well on pad. We will not perform any operations on this 25H well until at least 8 hours and when both tail and lead slurry reach 500psi. The mandrel hanger is made up on the last joint of 13 3/8” casing and then lowered down with and landing joint. It is then lowered down until the mandrel contacts the landing ring which is prewelded to the conductor pipe. At this point the 13 3/8” casing is entirely supported by the conductor pipe via the landing ring / mandrel and is independent from the rig. This allows us to walk the rig away from the 25H well and begin work on the next well while the cement is hardening. There is no way for the casing to be moved or knocked off center since it is hanging from the landing ring.

Surface Disturbance

Is any additional surface disturbance proposed?: No

NOI Attachments

Procedure Description

Dos_Equis_11_14_Fed_Com_25H_Multibowl_20211216140538.pdf

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Offline_Cement_Procedure_20211216140532.pdf

BOPs_and_Chokes_Dos_Equis_11_14_Fed_Com_25H_20211216140526.pdf

Drilling_Plan_Dos_Equis_11_14_Fed_Com_25H_20211216140521.pdf

Directional_Dos_Equis_11_14_Fed_Com_25H_20211216140515.pdf

C102_Dos_Equis_11_14_Fed_Com_25H_20211216140318.pdf

Conditions of Approval

Additional Reviews

Dos_Equis_11_14_Fed_Com_25H_COA_20220201112802.pdf

Operator Certification

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 submission of Form 3160-5 or a Sundry Notice.

Operator Electronic Signature: AMITHY CRAWFORD

Signed on: DEC 16, 2021 02:05 PM

Name: CIMAREX ENERGY COMPANY

Title: Regulatory Analyst

Street Address: 600 N MARIENFELD STE 600

City: MIDLAND **State:** TX

Phone: (432) 620-1909

Email address: AMITHY.CRAWFORD@COTERRA.COM

Field Representative

Representative Name:

Street Address:

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

Phone:

Email address:

BLM Point of Contact

BLM POC Name: CHRISTOPHER WALLS

BLM POC Title: Petroleum Engineer

BLM POC Phone: 5752342234

BLM POC Email Address: cwalls@blm.gov

Disposition: Approved

Disposition Date: 03/11/2022

Signature: Chris Walls

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

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

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

[X] AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-025-47646	96603	Triste Draw: Bone Spring

[4] Property Code	[5] Property Name	[6] Well Number
322999	DOS EQUIS 11-14 FEDERAL COM	25H

[7] OGRID No.	[8] Operator Name	[9] Elevation
215099	CIMAREX ENERGY CO.	3618.3'

[10] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	11	24S	32E		545	NORTH	1706	WEST	LEA

[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	14	24S	32E		100	SOUTH	497	WEST	LEA

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
640			

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

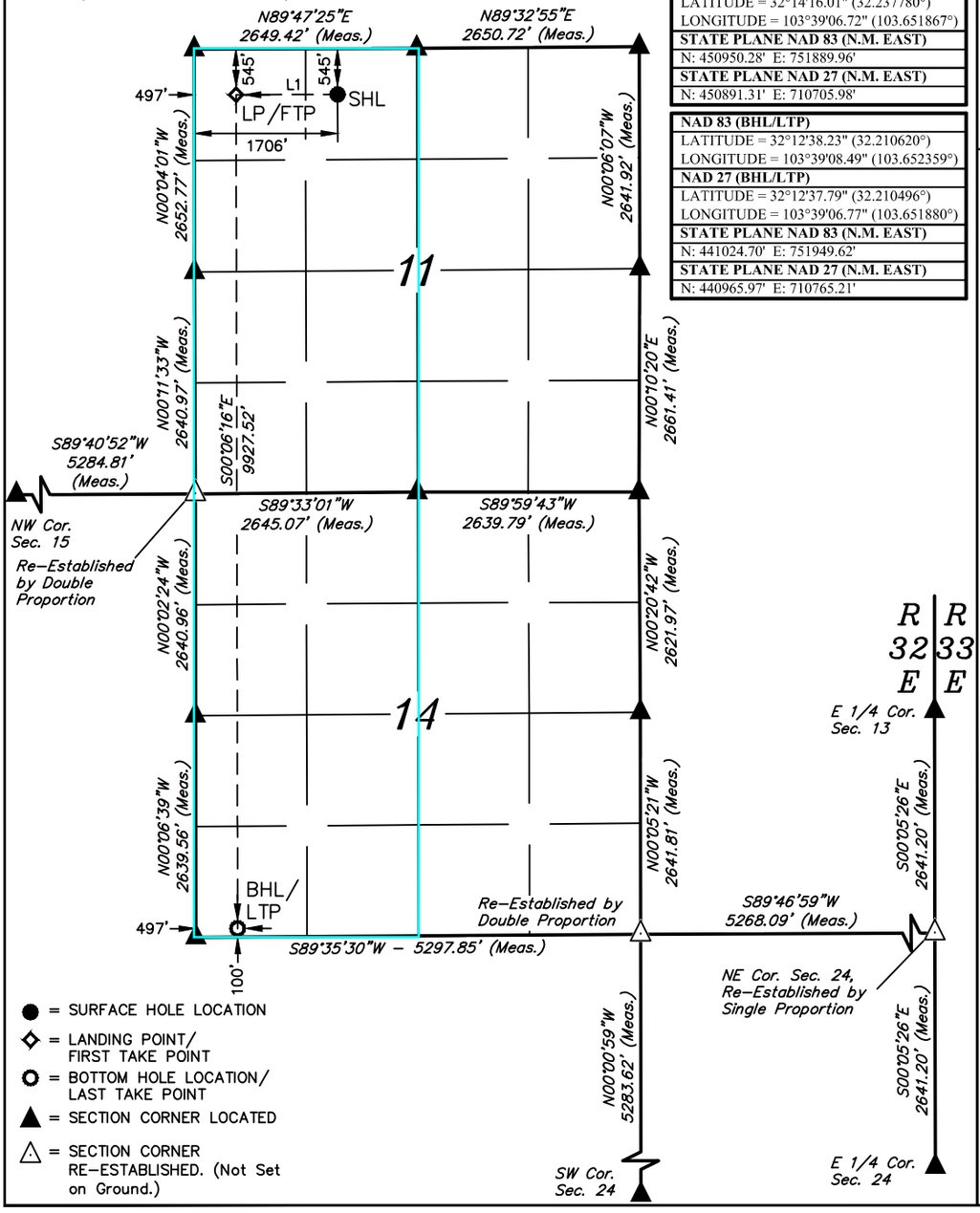
[16]

NOTE:
- Distances referenced on plat to section lines are perpendicular.
- Basis of Bearing is a Transverse Mercator Projection with a Central Meridian of W103°53'00" (NAD 83)

2000' 1000 0' 2000'

SCALE
REV: 3 D.J.S. 11-30-21
(WELL BORE CHANGE)

LINE TABLE		
LINE	DIRECTION	LENGTH
L1	S89°47'09"W	1208.83'



● = SURFACE HOLE LOCATION
◇ = LANDING POINT/ FIRST TAKE POINT
○ = BOTTOM HOLE LOCATION/ LAST TAKE POINT
▲ = SECTION CORNER LOCATED
△ = SECTION CORNER RE-ESTABLISHED. (Not Set on Ground.)

NAD 83 (SURFACE HOLE LOCATION)
LATITUDE = 32°14'16.47" (32.237909°)
LONGITUDE = 103°38'54.38" (103.648440°)
NAD 27 (SURFACE HOLE LOCATION)
LATITUDE = 32°14'16.03" (32.237785°)
LONGITUDE = 103°38'52.65" (103.647959°)
STATE PLANE NAD 83 (N.M. EAST)
N: 450959.86' E: 753098.54'
STATE PLANE NAD 27 (N.M. EAST)
N: 450900.89' E: 711914.56'

NAD 83 (LP/FTP)
LATITUDE = 32°14'16.45" (32.237903°)
LONGITUDE = 103°39'08.45" (103.652348°)
NAD 27 (LP/FTP)
LATITUDE = 32°14'16.01" (32.237780°)
LONGITUDE = 103°39'06.72" (103.651867°)
STATE PLANE NAD 83 (N.M. EAST)
N: 450950.28' E: 751889.96'
STATE PLANE NAD 27 (N.M. EAST)
N: 450891.31' E: 710705.98'

NAD 83 (BHL/LTP)
LATITUDE = 32°12'38.23" (32.210620°)
LONGITUDE = 103°39'08.49" (103.652359°)
NAD 27 (BHL/LTP)
LATITUDE = 32°12'37.79" (32.210496°)
LONGITUDE = 103°39'06.77" (103.651880°)
STATE PLANE NAD 83 (N.M. EAST)
N: 441024.70' E: 751949.62'
STATE PLANE NAD 27 (N.M. EAST)
N: 440965.97' E: 710765.21'

[17] OPERATOR CERTIFICATION

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

Amithy Crawford 12/16/21
Signature Date

Amithy Crawford
Printed Name

acrawford@cimarex.com
E-mail Address

[18] SURVEYOR CERTIFICATION

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

October 13, 2017
Date of Survey

Signature and Seal of Professional Surveyor:

PAUL BUCHELE NEW MEXICO 23782 PROFESSIONAL SURVEYOR 11-30-21

Certificate Number:

1. Geological Formations

TVD of target 11,000
MD at TD 20,775

Pilot Hole TD N/A
Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
Rustler	1166	Useable Water	
Salado (Top Salt)	1390	N/A	
Base of Salt	4684	N/A	
Lamar	4910	N/A	
Bell Canyon	4965	N/A	
Cherry Canyon	5858	N/A	
Brushy Canyon	7222	Hydrocarbons	
Bone Spring	8779	Hydrocarbons	
Leonard Shale	8892	Hydrocarbons	
Avalon Shale	9219	Hydrocarbons	
1st Bone Spring Sand	9944	Hydrocarbons	
2nd Bone Spring Carb	10108	Hydrocarbons	
2nd Bone Spring Sand	10478	Hydrocarbons	

2. Casing Program

Hole Size	Casing Depth From	Casing Depth To	Setting Depth TVD	Casing Size	Weight (lb/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17 1/2	0	1216	1216	13-3/8"	48.00	H-40	ST&C	1.40	3.28	5.52
12 1/4	0	4860	4860	9-5/8"	40.00	HCK-55	LT&C	1.46	1.52	2.89
8 3/4	0	10522	10522	7"	29.00	L-80	LT&C	1.43	1.66	1.84
8 3/4	10522	11422	11000	7"	29.00	P-110	BT&C	1.66	2.18	67.02
6	9522	20775	11000	4-1/2"	11.60	P-110	BT&C	1.47	2.08	21.41
					BLM Minimum Safety Factor			1.125	1	1.6 Dry 1.8 Wet

TVD was used on all calculations.
All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

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

3. Cementing Program

Casing	# Sks	Wt. lb/gal	Yld ft3/sack	H2O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surface	589	13.50	1.72	9.15	15.5	Lead: Class C + Bentonite
	158	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Intermediate	912	12.90	1.88	9.65	12	Lead: 35:65 (Poz:C) + Salt + Bentonite
	284	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Production	360	10.30	3.64	22.18		Lead: Tuned Light + LCM
	150	14.80	1.36	6.57	9.5	Tail: Class C + Retarder
Completion System	695	14.20	1.30	5.86	14:30	Tail: 50:50 (Poz:H) + Salt + Bentonite + Fluid Loss + Dispersant + SMS

Casing String	TOC	% Excess
Surface	0	45
Intermediate	0	51
Production	4660	25
Completion System	11222	10

Cimarex request the ability to perform casing integrity tests after plug bump of cement job.

4. Pressure Control Equipment

	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.

BOP installed and tested before drilling which hole?	Size	Min Required WP	Type		Tested To
12 1/4	13 5/8	2M	Annular	X	2M
			Blind Ram		
			Pipe Ram		
			Double Ram	X	
			Other		
8 3/4	13 5/8	3M	Annular	X	3M
			Blind Ram		
			Pipe Ram		
			Double Ram	X	
			Other		
6	13 5/8	5M	Annular	X	5M
			Blind Ram		
			Pipe Ram	X	
			Double Ram	X	
			Other		

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

X	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or 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. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.	
X	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.	
	N	Are anchors required by manufacturer?

5. Mud Program

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0' to 1216'	Fresh Water	7.83 - 8.33	28	N/C
1216' to 4860'	Brine Water	9.80 - 10.30	30-32	N/C
4860' to 11422'	Cut Brine or OBM	8.50 - 9.00	27-70	N/C
11422' to 20775'	OBM	8.50 - 9.00	50-70	N/C

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	
	Will run GR/CNL fromTD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	No logs are planned based on well control or offset log information.
	Drill stem test?
	Coring?

Additional Logs Planned	Interval

7. Drilling Conditions

Condition	
BH Pressure at deepest TVD	5148 psi
Abnormal Temperature	No

Hydrogen 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.	
X	H2S is present
X	H2S plan is attached

8. Other Facets of Operation

9. Wellhead

A multi-bowl wellhead system will be utilized.

After running the 13-3/8" surface casing, a 13 5/8" BOP/BOPE system with a minimum working pressure of 5000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 5000 psi test. Annular will be tested to working pressure, or a maximum test pressure of 5000 psi . The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2.

The multi-bowl wellhead will be installed by vendor's representative. A copy of the installation instructions has been sent to the BLM field office.

The wellhead will be installed by a third-party welder while being monitored by the wellhead vendor representative.

All BOP equipment will be tested utilizing a conventional test plug. Not a cup or J-packer type.

A solid steel body pack-off will be utilized after running and cementing the intermediate casing. After installation the pack-off and lower flange will be pressure tested to 5000 psi.

A solid steel body pack-off will be utilized after running and cementing the production casing. After installation the pack-off and lower flange will be pressure tested to 5000 psi.

All casing strings will be tested as per Onshore Order No.2 to atleast 0.22 psi/ft or 1,500 whichever is greater and not to exceed 70% of casing burst.

If well conditions dictate conventional slips will be set and BOPE will be tested to appropriate pressures based on permitted pressure requirements.

Cimarex requests to perform offline cementing. OLC procedure as follows: 1.Land casing on solid body mandrel hanger. Engage packoff and lockring 2. Install BPV 3. Skid rig 4. Check for pressure and remove BPV 5. Circulate down casing, taking returns through casing valves 6. Pump lead and tail cement 7. Displace cement and bump the plug 8. Ensure floats are holding pressure 9. RD cement crew 10. Install BPV and TA cap.

Cimarex requests permission to skid the rig to the next well on the pad to begin operations instead of waiting 8 hours for surface cement to harden on this 25H well. Surface cement will be pumped, we will ensure floats hold, do a green cement test and then Skid to the next well on pad. We will not perform any operations on this 25H well until at least 8 hours and when both tail and lead slurry reach 500psi. The mandrel hanger is made up on the last joint of 13 3/8" casing and then lowered down with and landing joint. It is then lowered down until the mandrel contacts the landing ring which is prewelded to the conductor pipe. At this point the 13 3/8" casing is entirely supported by the conductor pipe via the landing ring / mandrel and is independent from the rig. This allows us to walk the rig away from the 25H well and begin work on the next well while the cement is hardening. There is no way for the casing to be moved or knocked off center since it is hanging from the landing ring.

Schlumberger

Cimarex Dos Equis 11-14 Federal Com 25H Rev1 IC 03Dec21 Proposal Geodetic Report

(Def Plan)

CIMAREX

Report Date:	December 03, 2021 - 01:44 PM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	Cimarex Energy	**Vertical Section Azimuth:**	179.657 ° (Grid North)
Field:	NM Lea County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Cimarex Dos Equis 11-14 Federal Com 25H / New Slot	**TVD Reference Datum:**	RKB=22ft (Unit 411)
Well:	Dos Equis 11-14 Federal Com 25H	**TVD Reference Elevation:**	3640.300 ft above MSL
Borehole:	Dos Equis 11-14 Federal Com 25H	**Seabed / Ground Elevation:**	3618.300 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	6.389 °
Survey Name:	Cimarex Dos Equis 11-14 Federal Com 25H Rev1 IC 03Dec21	**Total Gravity Field Strength:**	998.4362mgn (9.80665 Based)
Survey Date:	September 05, 2019	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	108.391 ° / 11134.840 ft / 6.358 / 1.012	**Total Magnetic Field Strength:**	47642.782 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.858 °
Location Lat / Long:	N 32° 14' 16.47078", W 103° 38' 54.38252"	**Declination Date:**	December 03, 2021
Location Grid N/E Y/X:	N 450959.860 ftUS, E 753098.540 ftUS	**Magnetic Declination Model:**	HDGM 2021
CRS Grid Convergence Angle:	0.3654 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99996045	**Grid Convergence Used:**	0.3654 °
Version / Patch:	2.10.826.8	**Total Corr Mag North->Grid North:**	6.0239 °
		Local Coord Referenced To:	Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL [545' FNL, 1706' FWL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	450959.86	753098.54	N 32 14 16.47	W 103 38 54.38
	100.00	0.00	269.55	100.00	0.00	0.00	0.00	0.00	450959.86	753098.54	N 32 14 16.47	W 103 38 54.38
	200.00	0.00	269.55	200.00	0.00	0.00	0.00	0.00	450959.86	753098.54	N 32 14 16.47	W 103 38 54.38
	300.00	0.00	269.55	300.00	0.00	0.00	0.00	0.00	450959.86	753098.54	N 32 14 16.47	W 103 38 54.38
	400.00	0.00	269.55	400.00	0.00	0.00	0.00	0.00	450959.86	753098.54	N 32 14 16.47	W 103 38 54.38
	500.00	0.00	269.55	500.00	0.00	0.00	0.00	0.00	450959.86	753098.54	N 32 14 16.47	W 103 38 54.38
	600.00	0.00	269.55	600.00	0.00	0.00	0.00	0.00	450959.86	753098.54	N 32 14 16.47	W 103 38 54.38
	700.00	0.00	269.55	700.00	0.00	0.00	0.00	0.00	450959.86	753098.54	N 32 14 16.47	W 103 38 54.38
	800.00	0.00	269.55	800.00	0.00	0.00	0.00	0.00	450959.86	753098.54	N 32 14 16.47	W 103 38 54.38
	900.00	0.00	269.55	900.00	0.00	0.00	0.00	0.00	450959.86	753098.54	N 32 14 16.47	W 103 38 54.38
	1000.00	0.00	269.55	1000.00	0.00	0.00	0.00	0.00	450959.86	753098.54	N 32 14 16.47	W 103 38 54.38
	1100.00	0.00	269.55	1100.00	0.00	0.00	0.00	0.00	450959.86	753098.54	N 32 14 16.47	W 103 38 54.38
	1200.00	0.00	269.55	1200.00	0.00	0.00	0.00	0.00	450959.86	753098.54	N 32 14 16.47	W 103 38 54.38
	1300.00	0.00	269.55	1300.00	0.00	0.00	0.00	0.00	450959.86	753098.54	N 32 14 16.47	W 103 38 54.38
	1400.00	0.00	269.55	1400.00	0.00	0.00	0.00	0.00	450959.86	753098.54	N 32 14 16.47	W 103 38 54.38
Nudge 2°/100' DLS	1500.00	0.00	269.55	1500.00	0.00	0.00	0.00	0.00	450959.86	753098.54	N 32 14 16.47	W 103 38 54.38
	1600.00	2.00	269.55	1599.98	0.00	-0.01	-1.75	2.00	450959.85	753096.79	N 32 14 16.47	W 103 38 54.40
	1700.00	4.00	269.55	1699.84	0.01	-0.06	-6.98	2.00	450959.80	753091.56	N 32 14 16.47	W 103 38 54.46
	1800.00	6.00	269.55	1799.45	0.03	-0.12	-15.69	2.00	450959.74	753082.85	N 32 14 16.47	W 103 38 54.57
	1900.00	8.00	269.55	1898.70	0.05	-0.22	-27.88	2.00	450959.64	753070.66	N 32 14 16.47	W 103 38 54.71
Hold	1959.77	9.20	269.55	1957.80	0.07	-0.29	-36.81	2.00	450959.57	753061.73	N 32 14 16.47	W 103 38 54.81
	2000.00	9.20	269.55	1997.51	0.08	-0.34	-43.24	0.00	450959.52	753055.30	N 32 14 16.47	W 103 38 54.89
	2100.00	9.20	269.55	2096.23	0.11	-0.47	-59.22	0.00	450959.39	753039.32	N 32 14 16.47	W 103 38 55.07
	2200.00	9.20	269.55	2194.94	0.15	-0.60	-75.20	0.00	450959.26	753023.34	N 32 14 16.47	W 103 38 55.26
	2300.00	9.20	269.55	2293.66	0.18	-0.72	-91.18	0.00	450959.14	753007.36	N 32 14 16.47	W 103 38 55.44
	2400.00	9.20	269.55	2392.37	0.21	-0.85	-107.16	0.00	450959.01	752991.38	N 32 14 16.47	W 103 38 55.63
	2500.00	9.20	269.55	2491.09	0.24	-0.98	-123.14	0.00	450958.88	752975.40	N 32 14 16.47	W 103 38 55.82
	2600.00	9.20	269.55	2589.80	0.27	-1.10	-139.12	0.00	450958.76	752959.42	N 32 14 16.47	W 103 38 56.00
	2700.00	9.20	269.55	2688.52	0.30	-1.23	-155.10	0.00	450958.63	752943.45	N 32 14 16.47	W 103 38 56.19
	2800.00	9.20	269.55	2787.23	0.33	-1.36	-171.08	0.00	450958.50	752927.47	N 32 14 16.47	W 103 38 56.37
	2900.00	9.20	269.55	2885.95	0.36	-1.48	-187.06	0.00	450958.38	752911.49	N 32 14 16.47	W 103 38 56.56
	3000.00	9.20	269.55	2984.66	0.39	-1.61	-203.04	0.00	450958.25	752895.51	N 32 14 16.47	W 103 38 56.75
	3100.00	9.20	269.55	3083.38	0.42	-1.74	-219.02	0.00	450958.12	752879.53	N 32 14 16.47	W 103 38 56.93
	3200.00	9.20	269.55	3182.09	0.46	-1.86	-235.00	0.00	450958.00	752863.55	N 32 14 16.47	W 103 38 57.12
	3300.00	9.20	269.55	3280.81	0.49	-1.99	-250.98	0.00	450957.87	752847.57	N 32 14 16.47	W 103 38 57.30
	3400.00	9.20	269.55	3379.52	0.52	-2.12	-266.96	0.00	450957.74	752831.59	N 32 14 16.47	W 103 38 57.49
	3500.00	9.20	269.55	3478.24	0.55	-2.24	-282.94	0.00	450957.62	752815.61	N 32 14 16.47	W 103 38 57.68
	3600.00	9.20	269.55	3576.95	0.58	-2.37	-298.92	0.00	450957.49	752799.63	N 32 14 16.47	W 103 38 57.86
	3700.00	9.20	269.55	3675.66	0.61	-2.50	-314.90	0.00	450957.36	752783.65	N 32 14 16.47	W 103 38 58.05
	3800.00	9.20	269.55	3774.38	0.64	-2.62	-330.88	0.00	450957.24	752767.67	N 32 14 16.47	W 103 38 58.23
	3900.00	9.20	269.55	3873.09	0.67	-2.75	-346.86	0.00	450957.11	752751.70	N 32 14 16.47	W 103 38 58.42
	4000.00	9.20	269.55	3971.81	0.70	-2.88	-362.84	0.00	450956.98	752735.72	N 32 14 16.47	W 103 38 58.61
	4100.00	9.20	269.55	4070.52	0.73	-3.00	-378.82	0.00	450956.86	752719.74	N 32 14 16.46	W 103 38 58.79
	4200.00	9.20	269.55	4169.24	0.77	-3.13	-394.80	0.00	450956.73	752703.76	N 32 14 16.46	W 103 38 58.98
	4300.00	9.20	269.55	4267.95	0.80	-3.26	-410.78	0.00	450956.60	752687.78	N 32 14 16.46	W 103 38 59.17
	4400.00	9.20	269.55	4366.67	0.83	-3.38	-426.76	0.00	450956.48	752671.80	N 32 14 16.46	W 103 38 59.35
	4500.00	9.20	269.55	4465.38	0.86	-3.51	-442.74	0.00	450956.35	752655.82	N 32 14 16.46	W 103 38 59.54
	4600.00	9.20	269.55	4564.10	0.89	-3.64	-458.72	0.00	450956.22	752639.84	N 32 14 16.46	W 103 38 59.72
	4700.00	9.20	269.55	4662.81	0.92	-3.76	-474.70	0.00	450956.10	752623.86	N 32 14 16.46	W 103 38 59.91
	4800.00	9.20	269.55	4761.53	0.95	-3.89	-490.68	0.00	450955.97	752607.88	N 32 14 16.46	W 103 39 0.10
	4900.00	9.20	269.55	4860.24	0.98	-4.02	-506.66	0.00	450955.84	752591.90	N 32 14 16.46	W 103 39 0.28
	5000.00	9.20	269.55	4958.96	1.01	-4.14	-522.64	0.00	450955.72	752575.92	N 32 14 16.46	W 103 39 0.47
	5100.00	9.20	269.55	5057.67	1.04	-4.27	-538.62	0.00	450955.59	752559.95	N 32 14 16.46	W 103 39 0.65
	5200.00	9.20	269.55	5156.39	1.08	-4.40	-554.60	0.00	450955.46	752543.97	N 32 14 16.46	W 103 39 0.84
	5300.00	9.20	269.55	5255.10	1.11	-4.52	-570.58	0.00	450955.34	752527.99	N 32 14 16.46	W 103 39 1.03
	5400.00	9.20	269.55	5353.82	1.14	-4.65	-586.56	0.00	450955.21	752512.01	N 32 14 16.46	W 103 39 1.21
	5500.00	9.20	269.55	5452.53	1.17	-4.78	-602.54	0.00	450955.08	752496.03	N 32 14 16.46	W 103 39 1.40
	5600.00	9.20	269.55	5551.25	1.20	-4.90	-618.52	0.00	450954.96	752480.05	N 32 14 16.46	W 103 39 1.58
	5700.00	9.20	269.55	5649.96	1.23	-5.03	-634.50	0.00	450954.83	752464.07	N 32 14 16.46	W 103 39 1.77
	5800.00	9.20	269.55	5748.68	1.26	-5.16	-650.48	0.00	450954.70	752448.09	N 32 14 16.46	W 103 39 1.96
	5900.00	9.20	269.55	5847.39	1.29	-5.28	-666.46	0.00	450954.58	752432.11	N 32 14 16.46	W 103 39 2.14
	6000.00	9.20	269.55	5946.11	1.32	-5.41	-682.44	0.00	450954.45	752416.13	N 32 14 16.46	W 103 39 2.33
	6100.00	9.20	269.55	6044.82	1.35	-5.54	-698.42	0.00	450954.32	752400.15	N 32 14 16.46	W 103 39 2.51
	6200.00	9.20	269.55	6143.54	1.39	-5.66	-714.40	0.00	450954.20	752384.17	N 32 14 16.46	W 103 39 2.70
	6300.00	9.20	269.55	6242.25	1.42	-5.79	-730.38	0.00	450954.07	752368.20	N 32 14 16.46	W 103 39 2.89
	6400.00	9.20	269.55	6340.97	1.45	-5.92	-746.35	0.00	450953.94	752352.22	N 32 14 16.46	W 103 39 3.07
	6500.00	9.20	269.55	6439.68	1.48	-6.04	-762.33	0.00	450953.82	752336.24	N 32 14 16.46	W 103 39 3.26
	6600.00	9.20	269.55	6538.40	1.51	-6.17	-778.31	0.00	450953.69	752320.26	N 32 14 16.46	W 103 39 3.44
	6700.00	9.20	269.55	6637.11	1.54	-6.30	-794.29	0.00	450953.56	752304.28	N 32 14 16.46	W 103 39 3.63
	6800.00	9.20	269.55	6735.83	1.57	-6.42	-810.27	0.00	450953.44	752288.30	N 32 14 16.46	W 103 39 3.82
	6900.00	9.20	269.55	6834.54	1.60	-6.55	-826.25	0.00	450953.31	752272.32	N 32 14 16.46	W 103 39 4.00
	7000.00	9.20	269.55	6933.26	1.63	-6.68	-842.23	0.00	450953.18	752256.34	N 32 14 16.46	W 103 39 4.19
	7100.00	9.20	269.55	7031.97	1.66	-6.80	-858.21	0.00	450953.06	752240.36	N 32 14 16.46	W 103 39 4.37
	7200.00	9.20	269.55	7130.69	1.70	-6.93	-874.19	0.00	450952.93	752224.38	N 32 14 16.46	W 103 39 4.56
	7300.00	9.20	269.55	7229.40	1.73	-7.06	-890.17	0.00	450952.80	752208.40	N 32 14 16.46	W 103 39 4.75
	7400.00	9.20	269.55	7328.12	1.76	-7.18	-906.15	0.00	450952.68	752192.42	N 32 14 16.46	W 103 39 4.93

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	7500.00	9.20	269.55	7426.83	1.79	-7.31	-922.13	0.00	450952.55	752176.45	N 32 14 16.46	W 103 39 5.12
	7600.00	9.20	269.55	7525.55	1.82	-7.44	-938.11	0.00	450952.42	752160.47	N 32 14 16.46	W 103 39 5.30
	7700.00	9.20	269.55	7624.26	1.85	-7.56	-954.09	0.00	450952.30	752144.49	N 32 14 16.46	W 103 39 5.49
	7800.00	9.20	269.55	7722.98	1.88	-7.69	-970.07	0.00	450952.17	752128.51	N 32 14 16.46	W 103 39 5.68
	7900.00	9.20	269.55	7821.69	1.91	-7.82	-986.05	0.00	450952.04	752112.53	N 32 14 16.46	W 103 39 5.86
	8000.00	9.20	269.55	7920.41	1.94	-7.94	-1002.03	0.00	450951.92	752096.55	N 32 14 16.46	W 103 39 6.05
	8100.00	9.20	269.55	8019.12	1.98	-8.07	-1018.01	0.00	450951.79	752080.57	N 32 14 16.46	W 103 39 6.24
	8200.00	9.20	269.55	8117.83	2.01	-8.20	-1033.99	0.00	450951.66	752064.59	N 32 14 16.45	W 103 39 6.42
	8300.00	9.20	269.55	8216.55	2.04	-8.32	-1049.97	0.00	450951.54	752048.61	N 32 14 16.45	W 103 39 6.61
	8400.00	9.20	269.55	8315.26	2.07	-8.45	-1065.95	0.00	450951.41	752032.63	N 32 14 16.45	W 103 39 6.79
	8500.00	9.20	269.55	8413.98	2.10	-8.58	-1081.93	0.00	450951.28	752016.65	N 32 14 16.45	W 103 39 6.98
	8600.00	9.20	269.55	8512.69	2.13	-8.70	-1097.91	0.00	450951.16	752000.67	N 32 14 16.45	W 103 39 7.17
	8700.00	9.20	269.55	8611.41	2.16	-8.83	-1113.89	0.00	450951.03	751984.70	N 32 14 16.45	W 103 39 7.35
	8800.00	9.20	269.55	8710.12	2.19	-8.96	-1129.87	0.00	450950.90	751968.72	N 32 14 16.45	W 103 39 7.54
	8900.00	9.20	269.55	8808.84	2.22	-9.08	-1145.85	0.00	450950.78	751952.74	N 32 14 16.45	W 103 39 7.72
	9000.00	9.20	269.55	8907.55	2.25	-9.21	-1161.83	0.00	450950.65	751936.76	N 32 14 16.45	W 103 39 7.91
Drop 2° DLS	9062.49	9.20	269.55	8969.24	2.27	-9.29	-1171.82	0.00	450950.57	751926.77	N 32 14 16.45	W 103 39 8.03
	9100.00	8.45	269.55	9006.31	2.28	-9.33	-1177.57	2.00	450950.53	751921.02	N 32 14 16.45	W 103 39 8.09
	9200.00	6.45	269.55	9105.46	2.31	-9.44	-1190.52	2.00	450950.42	751908.07	N 32 14 16.45	W 103 39 8.24
	9300.00	4.45	269.55	9205.00	2.33	-9.51	-1200.01	2.00	450950.35	751898.58	N 32 14 16.45	W 103 39 8.35
	9400.00	2.45	269.55	9304.82	2.34	-9.56	-1206.02	2.00	450950.30	751892.57	N 32 14 16.45	W 103 39 8.42
	9500.00	0.45	269.55	9404.78	2.34	-9.58	-1208.54	2.00	450950.28	751890.05	N 32 14 16.45	W 103 39 8.45
Hold	9522.26	0.00	269.55	9427.04	2.34	-9.58	-1208.63	2.00	450950.28	751889.96	N 32 14 16.45	W 103 39 8.45
	9600.00	0.00	269.55	9504.78	2.34	-9.58	-1208.63	0.00	450950.28	751889.96	N 32 14 16.45	W 103 39 8.45
	9700.00	0.00	269.55	9604.78	2.34	-9.58	-1208.63	0.00	450950.28	751889.96	N 32 14 16.45	W 103 39 8.45
	9800.00	0.00	269.55	9704.78	2.34	-9.58	-1208.63	0.00	450950.28	751889.96	N 32 14 16.45	W 103 39 8.45
	9900.00	0.00	269.55	9804.78	2.34	-9.58	-1208.63	0.00	450950.28	751889.96	N 32 14 16.45	W 103 39 8.45
	10000.00	0.00	269.55	9904.78	2.34	-9.58	-1208.63	0.00	450950.28	751889.96	N 32 14 16.45	W 103 39 8.45
	10100.00	0.00	269.55	10004.78	2.34	-9.58	-1208.63	0.00	450950.28	751889.96	N 32 14 16.45	W 103 39 8.45
	10200.00	0.00	269.55	10104.78	2.34	-9.58	-1208.63	0.00	450950.28	751889.96	N 32 14 16.45	W 103 39 8.45
	10300.00	0.00	269.55	10204.78	2.34	-9.58	-1208.63	0.00	450950.28	751889.96	N 32 14 16.45	W 103 39 8.45
	10400.00	0.00	269.55	10304.78	2.34	-9.58	-1208.63	0.00	450950.28	751889.96	N 32 14 16.45	W 103 39 8.45
	10500.00	0.00	269.55	10404.78	2.34	-9.58	-1208.63	0.00	450950.28	751889.96	N 32 14 16.45	W 103 39 8.45
KOP, Build 10° DLS	10522.26	0.00	269.55	10427.04	2.34	-9.58	-1208.63	0.00	450950.28	751889.96	N 32 14 16.45	W 103 39 8.45
	10600.00	7.77	179.66	10504.54	7.61	-14.85	-1208.60	10.00	450945.01	751889.99	N 32 14 16.40	W 103 39 8.45
	10700.00	17.77	179.66	10601.94	29.69	-36.93	-1208.47	10.00	450922.93	751890.12	N 32 14 16.18	W 103 39 8.45
	10800.00	27.77	179.66	10694.03	68.35	-75.59	-1208.23	10.00	450884.28	751890.36	N 32 14 15.80	W 103 39 8.45
	10900.00	37.77	179.66	10778.00	122.42	-129.65	-1207.91	10.00	450830.21	751890.68	N 32 14 15.26	W 103 39 8.45
	11000.00	47.77	179.66	10851.31	190.24	-197.47	-1207.50	10.00	450762.39	751891.09	N 32 14 14.59	W 103 39 8.46
	11100.00	57.77	179.66	10911.73	269.77	-277.00	-1207.02	10.00	450682.87	751891.57	N 32 14 13.81	W 103 39 8.46
	11200.00	67.77	179.66	10957.43	358.57	-365.80	-1206.49	10.00	450594.07	751892.10	N 32 14 12.93	W 103 39 8.46
	11300.00	77.77	179.66	10987.00	453.97	-461.20	-1205.92	10.00	450498.68	751892.67	N 32 14 11.98	W 103 39 8.46
	11400.00	87.77	179.66	10999.57	553.05	-560.27	-1205.32	10.00	450399.61	751893.27	N 32 14 11.00	W 103 39 8.46
Landing Point	11422.26	90.00	179.66	11000.00	575.30	-582.53	-1205.19	10.00	450377.36	751893.40	N 32 14 10.78	W 103 39 8.46
	11500.00	90.00	179.66	11000.00	653.04	-660.27	-1204.72	0.00	450299.62	751893.87	N 32 14 10.01	W 103 39 8.46
	11600.00	90.00	179.66	11000.00	753.04	-760.26	-1204.12	0.00	450199.63	751894.47	N 32 14 9.02	W 103 39 8.46
	11700.00	90.00	179.66	11000.00	853.04	-860.26	-1203.52	0.00	450099.63	751895.07	N 32 14 8.03	W 103 39 8.46
	11800.00	90.00	179.66	11000.00	953.04	-960.26	-1202.92	0.00	449999.64	751895.67	N 32 14 7.04	W 103 39 8.46
	11900.00	90.00	179.66	11000.00	1053.04	-1060.26	-1202.31	0.00	449899.65	751896.28	N 32 14 6.06	W 103 39 8.46
	12000.00	90.00	179.66	11000.00	1153.04	-1160.26	-1201.71	0.00	449799.65	751896.88	N 32 14 5.07	W 103 39 8.46
	12100.00	90.00	179.66	11000.00	1253.04	-1260.26	-1201.11	0.00	449699.66	751897.48	N 32 14 4.08	W 103 39 8.46
	12200.00	90.00	179.66	11000.00	1353.04	-1360.25	-1200.51	0.00	449599.66	751898.08	N 32 14 3.09	W 103 39 8.46
	12300.00	90.00	179.66	11000.00	1453.04	-1460.25	-1199.91	0.00	449499.67	751898.68	N 32 14 2.10	W 103 39 8.46
	12400.00	90.00	179.66	11000.00	1553.04	-1560.25	-1199.31	0.00	449399.67	751899.28	N 32 14 1.11	W 103 39 8.46
	12500.00	90.00	179.66	11000.00	1653.04	-1660.25	-1198.71	0.00	449299.68	751899.88	N 32 14 0.12	W 103 39 8.46
	12600.00	90.00	179.66	11000.00	1753.04	-1760.25	-1198.11	0.00	449199.69	751900.48	N 32 13 59.13	W 103 39 8.46
	12700.00	90.00	179.66	11000.00	1853.04	-1860.24	-1197.51	0.00	449099.69	751901.08	N 32 13 58.14	W 103 39 8.46
	12800.00	90.00	179.66	11000.00	1953.04	-1960.24	-1196.91	0.00	448999.70	751901.68	N 32 13 57.15	W 103 39 8.46
	12900.00	90.00	179.66	11000.00	2053.04	-2060.24	-1196.30	0.00	448899.70	751902.29	N 32 13 56.16	W 103 39 8.46
	13000.00	90.00	179.66	11000.00	2153.04	-2160.24	-1195.70	0.00	448799.71	751902.89	N 32 13 55.17	W 103 39 8.46
	13100.00	90.00	179.66	11000.00	2253.04	-2260.24	-1195.10	0.00	448699.72	751903.49	N 32 13 54.18	W 103 39 8.46
	13200.00	90.00	179.66	11000.00	2353.04	-2360.24	-1194.50	0.00	448599.72	751904.09	N 32 13 53.19	W 103 39 8.46
	13300.00	90.00	179.66	11000.00	2453.04	-2460.23	-1193.90	0.00	448499.73	751904.69	N 32 13 52.20	W 103 39 8.46
	13400.00	90.00	179.66	11000.00	2553.04	-2560.23	-1193.30	0.00	448399.73	751905.29	N 32 13 51.21	W 103 39 8.46
	13500.00	90.00	179.66	11000.00	2653.04	-2660.23	-1192.70	0.00	448299.74	751905.89	N 32 13 50.22	W 103 39 8.46
	13600.00	90.00	179.66	11000.00	2753.04	-2760.23	-1192.10	0.00	448199.75	751906.49	N 32 13 49.23	W 103 39 8.46
	13700.00	90.00	179.66	11000.00	2853.04	-2860.23	-1191.50	0.00	448099.75	751907.09	N 32 13 48.24	W 103 39 8.47
	13800.00	90.00	179.66	11000.00	2953.04	-2960.22	-1190.89	0.00	447999.76	751907.69	N 32 13 47.25	W 103 39 8.47
	13900.00	90.00	179.66	11000.00	3053.04	-3060.22	-1190.29	0.00	447899.76	751908.30	N 32 13 46.26	W 103 39 8.47
	14000.00	90.00	179.66	11000.00	3153.04	-3160.22	-1189.69	0.00	447799.77	751908.90	N 32 13 45.28	W 103 39 8.47
	14100.00	90.00	179.66	11000.00	3253.04	-3260.22	-1189.09	0.00	447699.78	751909.50	N 32 13 44.29	W 103 39 8.47
	14200.00	90.00	179.66	11000.00	3353.04	-3360.22	-1188.49	0.00	447599.78	751910.10	N 32 13 43.30	W 103 39 8.47
	14300.00	90.00	179.66	11000.00	3453.04	-3460.22	-1187.89	0.00	447499.79	751910.70	N 32 13 42.31	W 103 39 8.47
	14400.00	90.00	179.66	11000.00	3553.04	-3560.21	-1187.29	0.00	447399.79	751911.30	N 32 13 41.32	W 103 39 8.47
	14500.00	90.00	179.66	11000.00	3653.04	-3660.21	-1186.69	0.00	447299.80	751911.90	N 32 13 40.33	W 103 39 8.47
	14600.00	90.00	179.66	11000.00	3753.04	-3760.21	-1186.09	0.00	447199.81	751912.50	N 32 13 39.34	W 103 39 8.47
	14700.00	90.00	179.66	11000.00	3853.04	-3860.21	-1185.49	0.00	447099.81	751913.10	N 32 13 38.35	W 103 39 8.47
	14800.00	90.00	179.66	11000.00	3953.04	-3960.21	-1184.88	0.00	446999.82	751913.71	N 32 13 37.36	W 103 39 8.47
	14900.00	90.00	179.66	11000.00	4053.04	-4060.20	-1184.28	0.00	446899.82	751914.31	N 32 13 36.37	W 103 39 8.47
	15000.00	90.00	179.66	11000.00	4153.04	-4160.20	-1183.68	0.00	446799.83	751914.91	N 32 13 35.38	W 103 39 8.47
	15100.00	90.00	179.66	11000.00	4253.04	-4260.20	-1183.08	0.00	446699.84	751915.51	N 32 13 34.39	W 103 39 8.47
	15200.00	90.00	179.66	11000.00	4353.04	-4360.20	-1182.48	0.00	446599.84	751916.11	N 32 13 33.40	W 103 39 8.47
	15300.00	90.00	179.66	11000.00	4453.04	-4460.20	-1181.88	0.00	446499.85	751916.71	N 32 13 32.41	W 103 39 8.47
	15400.00	90.00	179.66	11000.00	4553.04	-4560.20	-1181.28	0.00	446399.85	751917.31	N 32 13 31.42	W 103 39 8.47
	15500.00	90.00	179.66	11000.00	4653.04	-4660.19	-1180.68	0.00	446299.86	751917.91	N 32 13 30.43	W 103 39 8.47
	15600.00	90.00	179.66	11000.00	4753.04	-4760.19	-1180.08	0.00	446199.87	751918.51	N 32 13 29.44	W 103 39 8.47
	15700.00	90.00	179.66	11000.00	4853.04	-4860.19	-1179.47	0.00	446099.87	751919.11	N 32 13 28.45	W 103 39 8.47
	15800.00	90.00	179.66	11000.00	4953.04	-4960.19	-1178.87	0.00	445999.88	751919.72	N 32 13 27.46	W 103 39 8.47
	15900.00	90.00	179.66	11000.00	5053.04	-5060.19	-1178.27	0.00	445899.88	751920.32	N 32 13 26.47	W 103 39 8.47
	16000.00	90.00	179.66	11000.00	5153.04	-5160.18	-1177.67	0.00	445799.89	751920.92	N 32 13 25.49	W 103 39 8.47
	16100.00	90.00	179.66	11000.00	5253.04	-5260.18	-1177.07	0.00	445699.90	751921.52	N 32 13 24.50	W 103 39 8.47
	16200.00	90.00	179.66	11000.00	5353.04	-5360.18	-1176.47	0.00	445599.90	751922.12	N 32 13 23.51	W 103 39 8.47
	16300.00	90.00	179.66	11000.00	5453.04	-5460.18	-1175.87	0.00	445499.91	751922.72	N 32 13 22.52	W 103 39 8.48
	16400.00	90.00	179.66	11000.00	5553.04	-5560.18	-1175.27	0.00	445399.91	751923.32	N 32 13 21.53	W 103 39 8.48
	16500.00	90.00	179.66	11000.00	5653.04	-5660.18	-1174.67	0.00	445299.92	751923.92	N 32 13 20.54	W 103 39 8.48
	16600.00	90.00	179.66	11000.00	5753.04	-5760.17	-1174.06	0.00	445199.93	751924.52	N 32 13 19.55	W 103 39 8.48
	16700.00	90.00	179.66	11000.00	5853.04	-5860.17	-1173.46	0.00	445099.93	751925.12	N 32 13 18.56	W 103 39 8.48
	16800.00	90.00	179.66	11000.00	5953.04	-5960.17	-1172.86	0.00	444999.94	751925.73	N 32 13 17.57	W 103 39 8.48
	16900.00	90.00	179.66	11000.00	6053.04	-6060.17	-1172.26	0.00	444899.94	751926.33	N 32 13 16.58	W 103 39 8.48
	17000.00	90.00	179.66	11000.00	6153.04	-6160.17	-1171.66	0.00	444799.95	751926.93	N 32 13 15.59	W 103 39 8.48
	17100.00	90.00	179.66	11000.00	6253.04	-6260.17	-1171.06	0.00	444699.96	751927.53	N 32 13 14.60	W 103 39 8.48
	17200.00	90.00	179.66	11000.00	6353.04	-6360.16	-1170.46	0.00	444599.96	751928.13	N 32 13 13.61	W 103 39 8.48
	17300.00	90.00	179.66	11000.00	6453.04	-6460.16	-1169.86	0.00	444499.97	751928.73	N 32 13 12.62	W 103 39 8.48
	17400.00	90.00	179.66	11000.00	6553.04	-6560.16	-1169.26	0.00	444399.97	751929.33	N 32 13 11.63	W 103 39 8.48
	17500.00	90.00	179.66	11000.00	6653.04	-6660.16	-1168.66	0.00	444299.98	751929.93	N 32 13 10.64	W 103 39 8.48
	17600.00	90.00	179.66	11000.00	6753.04	-6760.16	-1168.05	0.00	444199.98	751930.53	N 32 13 9.65	W 103 39 8.48
	17700.00	90.00	179.66	11000.00	6853.04	-6860.15	-1167.45	0.00	444099.99	751931.14	N 32 13 8.66	W 103 39 8.48
	17800.00	90.00	179.66	11000.00	6953.04	-6960.15	-1166.85	0.00	444000.00	751931.74	N 32 13 7.67	W 103 39 8.48

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	17900.00	90.00	179.66	11000.00	7053.04	-7060.15	-1166.25	0.00	443900.00	751932.34	N 32 13 6.68	W 103 39 8.48
	18000.00	90.00	179.66	11000.00	7153.04	-7160.15	-1165.65	0.00	443800.01	751932.94	N 32 13 5.69	W 103 39 8.48
	18100.00	90.00	179.66	11000.00	7253.04	-7260.15	-1165.05	0.00	443700.01	751933.54	N 32 13 4.71	W 103 39 8.48
	18200.00	90.00	179.66	11000.00	7353.04	-7360.15	-1164.45	0.00	443600.02	751934.14	N 32 13 3.72	W 103 39 8.48
	18300.00	90.00	179.66	11000.00	7453.04	-7460.14	-1163.85	0.00	443500.03	751934.74	N 32 13 2.73	W 103 39 8.48
	18400.00	90.00	179.66	11000.00	7553.04	-7560.14	-1163.25	0.00	443400.03	751935.34	N 32 13 1.74	W 103 39 8.48
	18500.00	90.00	179.66	11000.00	7653.04	-7660.14	-1162.64	0.00	443300.04	751935.94	N 32 13 0.75	W 103 39 8.48
	18600.00	90.00	179.66	11000.00	7753.04	-7760.14	-1162.04	0.00	443200.04	751936.54	N 32 12 59.76	W 103 39 8.48
	18700.00	90.00	179.66	11000.00	7853.04	-7860.14	-1161.44	0.00	443100.05	751937.15	N 32 12 58.77	W 103 39 8.48
	18800.00	90.00	179.66	11000.00	7953.04	-7960.13	-1160.84	0.00	443000.06	751937.75	N 32 12 57.78	W 103 39 8.48
	18900.00	90.00	179.66	11000.00	8053.04	-8060.13	-1160.24	0.00	442900.06	751938.35	N 32 12 56.79	W 103 39 8.49
	19000.00	90.00	179.66	11000.00	8153.04	-8160.13	-1159.64	0.00	442800.07	751938.95	N 32 12 55.80	W 103 39 8.49
	19100.00	90.00	179.66	11000.00	8253.04	-8260.13	-1159.04	0.00	442700.07	751939.55	N 32 12 54.81	W 103 39 8.49
	19200.00	90.00	179.66	11000.00	8353.04	-8360.13	-1158.44	0.00	442600.08	751940.15	N 32 12 53.82	W 103 39 8.49
	19300.00	90.00	179.66	11000.00	8453.04	-8460.13	-1157.84	0.00	442500.09	751940.75	N 32 12 52.83	W 103 39 8.49
	19400.00	90.00	179.66	11000.00	8553.04	-8560.12	-1157.24	0.00	442400.09	751941.35	N 32 12 51.84	W 103 39 8.49
	19500.00	90.00	179.66	11000.00	8653.04	-8660.12	-1156.63	0.00	442300.10	751941.95	N 32 12 50.85	W 103 39 8.49
	19600.00	90.00	179.66	11000.00	8753.04	-8760.12	-1156.03	0.00	442200.10	751942.55	N 32 12 49.86	W 103 39 8.49
	19700.00	90.00	179.66	11000.00	8853.04	-8860.12	-1155.43	0.00	442100.11	751943.16	N 32 12 48.87	W 103 39 8.49
	19800.00	90.00	179.66	11000.00	8953.04	-8960.12	-1154.83	0.00	442000.12	751943.76	N 32 12 47.88	W 103 39 8.49
	19900.00	90.00	179.66	11000.00	9053.04	-9060.11	-1154.23	0.00	441900.12	751944.36	N 32 12 46.89	W 103 39 8.49
	20000.00	90.00	179.66	11000.00	9153.04	-9160.11	-1153.63	0.00	441800.13	751944.96	N 32 12 45.90	W 103 39 8.49
	20100.00	90.00	179.66	11000.00	9253.04	-9260.11	-1153.03	0.00	441700.13	751945.56	N 32 12 44.91	W 103 39 8.49
	20200.00	90.00	179.66	11000.00	9353.04	-9360.11	-1152.43	0.00	441600.14	751946.16	N 32 12 43.93	W 103 39 8.49
	20300.00	90.00	179.66	11000.00	9453.04	-9460.11	-1151.83	0.00	441500.15	751946.76	N 32 12 42.94	W 103 39 8.49
	20400.00	90.00	179.66	11000.00	9553.04	-9560.11	-1151.22	0.00	441400.15	751947.36	N 32 12 41.95	W 103 39 8.49
	20500.00	90.00	179.66	11000.00	9653.04	-9660.10	-1150.62	0.00	441300.16	751947.96	N 32 12 40.96	W 103 39 8.49
	20600.00	90.00	179.66	11000.00	9753.04	-9760.10	-1150.02	0.00	441200.16	751948.57	N 32 12 39.97	W 103 39 8.49
	20700.00	90.00	179.66	11000.00	9853.04	-9860.10	-1149.42	0.00	441100.17	751949.17	N 32 12 38.98	W 103 39 8.49
Cimarex Dos Equis 11-14 Federal Com 25H - PBHL [100' FSL, 497' FWL]	20775.47	90.00	179.66	11000.00	9928.52	-9935.57	-1148.97	0.00	441024.70	751949.62	N 32 12 38.23	W 103 39 8.49

Survey Type: Def Plan

Survey Error Model: ISCWSA Rev 3 *** 3-D 95.000% Confidence 2.7955 sigma

Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	22.000	1/100.000	30.000	30.000		A001Mb_MWD-Depth Only	Dos Equis 11-14 Federal Com 25H / Cimarex Dos Equis 11-14
	1	22.000	20775.474	1/100.000	30.000	30.000		A001Mb_MWD	Dos Equis 11-14 Federal Com 25H / Cimarex Dos Equis 11-14

Schlumberger

Cimarex Dos Equis 11-14 Federal Com 25H Rev1 IC 03Dec21 Proposal
Geodetic Report
(Def Plan)

CIMAREX

Report Date:	December 03, 2021 - 01:41 PM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	Cimarex Energy	**Vertical Section Azimuth:**	179.657 ° (Grid North)
Field:	NM Lea County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Cimarex Dos Equis 11-14 Federal Com 25H / New Slot	**TVD Reference Datum:**	RKB=22ft (Unit 411)
Well:	Dos Equis 11-14 Federal Com 25H	**TVD Reference Elevation:**	3640.300 ft above MSL
Borehole:	Dos Equis 11-14 Federal Com 25H	**Seabed / Ground Elevation:**	3618.300 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	6.389 °
Survey Name:	Cimarex Dos Equis 11-14 Federal Com 25H Rev1 IC 03Dec21	**Total Gravity Field Strength:**	998.4362mgn (9.80665 Based)
Survey Date:	September 05, 2019	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	108.391 ° / 11134.840 ft / 6.358 / 1.012	**Total Magnetic Field Strength:**	47642.782 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.858 °
Location Lat / Long:	N 32° 14' 16.47078", W 103° 38' 54.38252"	**Declination Date:**	December 03, 2021
Location Grid N/E Y/X:	N 450959.860 ftUS, E 753098.540 ftUS	**Magnetic Declination Model:**	HDGM 2021
CRS Grid Convergence Angle:	0.3654 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99996045	**Grid Convergence Used:**	0.3654 °
Version / Patch:	2.10.826.8	**Total Corr Mag North->Grid North:**	6.0239 °
		Local Coord Referenced To:	Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL [545' FNL, 1706' FWL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	450959.86	753098.54	N 32 14 16.47	W 103 38 54.38
Nudge 2°/100' DLS	1500.00	0.00	269.55	1500.00	0.00	0.00	0.00	0.00	450959.86	753098.54	N 32 14 16.47	W 103 38 54.38
Hold	1959.77	9.20	269.55	1957.80	0.07	-0.29	-36.81	2.00	450959.57	753061.73	N 32 14 16.47	W 103 38 54.81
Drop 2° DLS	9062.49	9.20	269.55	8969.24	2.27	-9.29	-1171.82	0.00	450950.57	751926.77	N 32 14 16.45	W 103 39 8.03
Hold	9522.26	0.00	269.55	9427.04	2.34	-9.58	-1208.63	2.00	450950.28	751889.96	N 32 14 16.45	W 103 39 8.45
KOP, Build 10° DLS	10522.26	0.00	269.55	10427.04	2.34	-9.58	-1208.63	0.00	450950.28	751889.96	N 32 14 16.45	W 103 39 8.45
Landing Point Cimarex Dos Equis 11-14 Federal Com 25H - PBHL [100' FSL, 497' FWL]	11422.26	90.00	179.66	11000.00	575.30	-582.53	-1205.19	10.00	450377.36	751893.40	N 32 14 10.78	W 103 39 8.46
	20775.47	90.00	179.66	11000.00	9928.52	-9935.57	-1148.97	0.00	441024.70	751949.62	N 32 12 38.23	W 103 39 8.49

Survey Type: Def Plan

Survey Error Model: ISCWSA Rev 3 *** 3-D 95.000% Confidence 2.7955 sigma

Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	22.000	1/100.000	30.000	30.000		A001Mb_MWD-Depth Only	Dos Equis 11-14 Federal Com 25H / Cimarex Dos Equis 11-14
	1	22.000	20775.474	1/100.000	30.000	30.000		A001Mb_MWD	Dos Equis 11-14 Federal Com 25H / Cimarex Dos Equis 11-14

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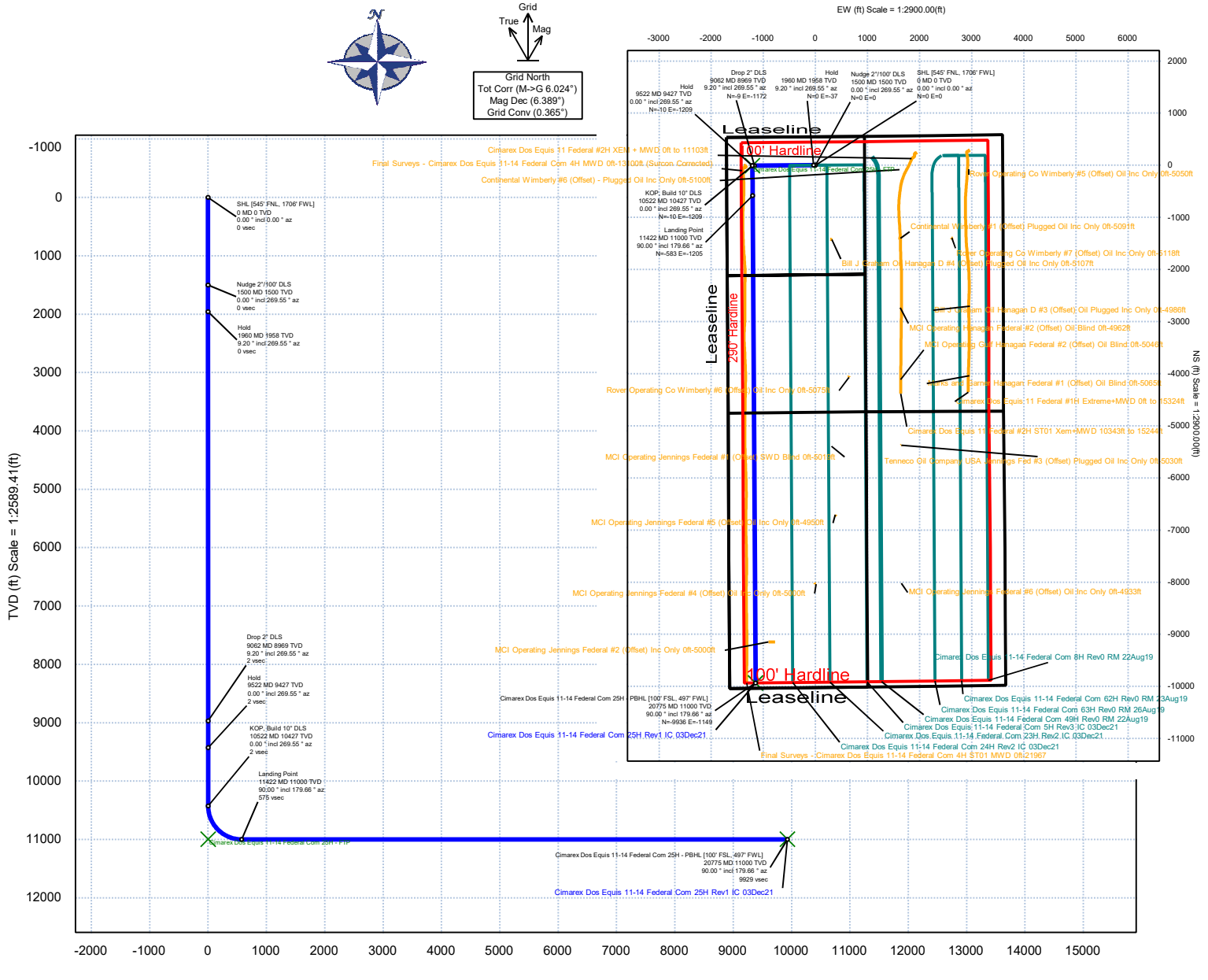
Cimarex Energy Rev 1

CIMAREX

Borehole:	Well:	Field:	Structure:
Dos Equis 11-14 Federal Com 25H	Dos Equis 11-14 Federal Com 25H	NM Lea County (NAD 83)	Cimarex Dos Equis 11-14 Federal Com 25H

Gravity & Magnetic Parameters						Surface Location	NAD83 New Mexico State Plane, Eastern Zone, US Feet					Miscellaneous			
Model:	HDGM 2021	Dip:	59.858°	Date:	03-Dec-2021	Lat:	N 32 14 16.47	Northing:	450959.86ftUS	Grid Conv:	0.3654°	Slot:	New Slot	TVD Ref:	RKB=22ft (Unit 411)(3640.3ft above MSL)
MagDec:	6.389°	FS:	47642.782nT	Gravity FS:	998.436mgn (9.80665 Based)	Lon:	W 103 38 54.38	Easting:	753098.54ftUS	Scale Fact:	0.99996045	Plan:	Cimarex Dos Equis 11-14 Federal Com 25H Rev1 IC 03Dec21		



Vertical Section (ft) Azim = 179.66° Scale = 1:2589.41(ft) Origin = 0N/-S, 0E/-W

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL [545' FNL, 1706' FWL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Nudge 2°/100' DLS	1500.00	0.00	269.55	1500.00	0.00	0.00	0.00	0.00
Hold	1959.77	9.20	269.55	1957.80	0.07	-0.29	-36.81	2.00
Drop 2° DLS	9062.49	9.20	269.55	8969.24	2.27	-9.29	-1171.82	0.00
Hold	9522.26	0.00	269.55	9427.04	2.34	-9.58	-1208.63	2.00
KOP, Build 10° DLS	10522.26	0.00	269.55	10427.04	2.34	-9.58	-1208.63	0.00
Landing Point	11422.26	90.00	179.66	11000.00	575.30	-582.53	-1205.19	10.00
Cimarex Dos Equis 11-14 Federal Com 25H - PBHL [100' FSL, 497' FWL]	20775.47	90.00	179.66	11000.00	9928.52	-9935.57	-1148.97	0.00

Schlumberger CIMAREX

Cimarex Dos Equis 11-14 Federal Com 25H Rev1 IC 03Dec21 Anti-Collision Summary Report

Analysis Date-24hr Time:	December 03, 2021 - 13:41	**Analysis Method:**	3D Least Distance
Client:	Cimarex Energy	**Reference Trajectory:**	Cimarex Dos Equis 11-14 Federal Com 25H Rev1 IC 03Dec21 (Def Plan)
Field:	NM Lea County (NAD 83)	**Depth Interval:**	Every 10.00 Measured Depth (ft)
Structure:	Cimarex Dos Equis 11-14 Federal Com 25H	**Rule Set:**	NAL Procedure: D&M AntiCollision Standard S002
Slot:	New Slot	**Min Pts:**	All local minima indicated.
Well:	Dos Equis 11-14 Federal Com 25H	**Version / Patch:**	2.10.826.8
Borehole:	Dos Equis 11-14 Federal Com 25H	**Database \ Project:**	Us1455vsm3172\drilling-NM Lea County 2.10
Scan MD Range:	0.00ft ~ 20775.47ft		

Trajectory Error Model: ISCWSA3 3-D 95.000% Confidence 2.7955 sigma, for subject well. For offset wells, error model version is specified with each well respectively.

Offset Trajectories Summary

Offset Selection Criteria
Wellhead distance scan: Restricted within 61785.97 ft
Selection filters: Definitive Surveys - Definitive Plans - Definitive surveys exclude definitive plans
- All Non-Def Surveys when no Def-Survey is set in a borehole - All Non-Def Plans when no Def-Plan is set in a borehole

Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
Results highlighted: Sep-Factor separation <= 1.50 ft													
Cimarex Dos Equis 11-14 Federal Com 24H Rev2 IC 03Dec21 (Def Plan)													Fail Minor
	20.00	16.36	18.19	3.64	N/A	MAS = 4.99 (m)	0.00	0.00	CtCt<=15m<15.00			Enter Alert	
	20.00	16.36	18.19	3.64	N/A	MAS = 4.99 (m)	22.00	22.00				WRP	
	20.00	20.13	5.98	-0.13	1.49	OSF1.50	1280.00	1280.00		OSF<1.50		Enter Minor	
	20.00	23.44	3.77	-3.44	1.26	OSF1.50	1500.00	1500.00				MinPt-CtCt	
	19.93	26.99	1.33	-7.06	1.08	OSF1.50	1750.00	1749.68				MinPt-CtCt	
	20.09	27.43	1.20	-7.34	1.07	OSF1.50	1780.00	1779.55				MinPts	
	20.21	27.57	1.23	-7.36	1.07	OSF1.50	1790.00	1789.50				MinPt-O-ADP	
	30.56	30.62	9.54	-0.06	1.50	OSF1.50	2000.00	1997.51		OSF>1.50		Exit Minor	
	246.46	75.23	195.71	171.23	5.00	OSF1.50	4950.00	4909.60	OSF>5.00			Exit Alert	
	712.91	154.48	609.32	558.43	6.99	OSF1.50	10260.00	10164.78				MinPt-CtCt	
	713.19	156.08	608.54	557.11	6.92	OSF1.50	10380.00	10284.78				MINPT-O-EOU	
	713.49	156.44	608.59	557.05	6.90	OSF1.50	10410.00	10314.78				MinPt-O-ADP	
	715.65	157.38	610.13	558.27	6.88	OSF1.50	10500.00	10404.78				MinPt-O-SF	
	773.42	233.64	617.06	539.78	4.99	OSF1.50	13650.00	11000.00	OSF<5.00			Enter Alert	
	773.42	658.93	333.53	114.49	1.76	OSF1.50	20770.00	11000.00				MinPts	
	773.43	658.93	333.54	114.50	1.76	OSF1.50	20775.47	11000.00				TD	
Cimarex Dos Equis 11-14 Federal Com 23H Rev2 IC 03Dec21 (Def Plan)													Warning Alert
	40.00	32.36	38.20	7.64	N/A	MAS = 9.86 (m)	0.00	0.00	CtCt<=15m<15.00			Enter Alert	
	40.00	32.36	38.20	7.64	N/A	MAS = 9.86 (m)	22.00	22.00				WRP	
	40.00	32.36	23.78	7.64	2.65	MAS = 9.86 (m)	1500.00	1500.00				MinPts	
	40.16	32.36	23.64	7.80	2.61	MAS = 9.86 (m)	1530.00	1530.00				MINPT-O-EOU	
	40.86	32.36	23.94	8.49	2.58	MAS = 9.86 (m)	1570.00	1569.99				MinPt-O-SF	
	104.02	32.71	81.61	71.31	4.96	OSF1.50	2130.00	2125.84	OSF>5.00			Exit Alert	
	654.51	67.27	609.06	587.24	14.96	OSF1.50	4460.00	4425.90				MinPt-O-SF	
	1426.81	429.95	1139.58	996.87	4.99	OSF1.50	16580.00	11000.00	OSF<5.00			Enter Alert	
	1426.81	705.76	955.70	721.05	3.04	OSF1.50	20760.00	11000.00				MinPt-CtCt	
	1426.83	706.39	955.30	720.44	3.03	OSF1.50	20775.47	11000.00				MinPts	
Cimarex Dos Equis 11-14 Federal Com 5H Rev3 IC 03Dec21 (Def Plan)													Warning Alert
	59.92	32.81	58.11	27.11	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	59.91	32.81	58.11	27.11	N/A	MAS = 10.00 (m)	22.00	22.00				WRP	
	59.91	32.81	46.39	27.11	4.96	MAS = 10.00 (m)	1230.00	1230.00	OSF<5.00			Enter Alert	
	59.91	32.81	43.69	27.11	4.03	MAS = 10.00 (m)	1500.00	1500.00				MinPts	
	60.07	32.81	43.55	27.26	3.96	MAS = 10.00 (m)	1530.00	1530.00				MINPT-O-EOU	
	62.03	32.81	44.71	29.22	3.88	MAS = 10.00 (m)	1610.00	1609.97				MinPt-O-SF	
	95.18	32.81	74.54	62.38	4.96	MAS = 10.00 (m)	1950.00	1948.15	OSF>5.00			Exit Alert	
	2139.71	155.52	2035.43	1984.20	20.86	OSF1.50	10290.00	10194.78				MinPt-CtCt	
	2140.15	157.76	2034.38	1982.39	20.57	OSF1.50	10460.00	10364.78				MINPT-O-EOU	
	2140.55	158.25	2034.45	1982.30	20.51	OSF1.50	10500.00	10404.78				MinPt-O-ADP	
	2160.55	649.81	1726.74	1510.74	5.00	OSF1.50	20000.00	11000.00	OSF<5.00			Enter Alert	
	2160.55	700.47	1692.97	1460.08	4.63	OSF1.50	20760.00	11000.00				MinPt-CtCt	
	2160.58	701.08	1692.59	1459.50	4.63	OSF1.50	20775.47	11000.00				MinPts	
Final Surveys - Cimarex Dos Equis 11-14 Federal Com 4H MWD 0ft-13100ft (Surcon Corrected) (Def Survey)													Warning Alert
	1335.57	32.81	1333.87	1302.76	N/A	MAS = 10.00 (m)	0.00	0.00				MinPts	
	1335.59	32.81	1333.87	1302.78	47111.11	MAS = 10.00 (m)	22.00	22.00				WRP	
	1335.78	32.81	1333.79	1302.98	4512.13	MAS = 10.00 (m)	90.00	90.00				MINPT-O-EOU	
	1336.24	32.81	1333.69	1303.43	1581.56	MAS = 10.00 (m)	170.00	170.00				MINPT-O-EOU	
	301.78	91.88	239.98	209.89	4.99	OSF1.50	8400.00	8315.26	OSF<5.00			Enter Alert	
	177.07	103.94	107.21	73.13	2.57	OSF1.50	9470.00	9374.78				MinPt-CtCt	
	177.16	104.15	107.15	73.00	2.57	OSF1.50	9490.00	9394.78				MINPT-O-EOU	
	177.25	104.26	107.17	72.99	2.57	OSF1.50	9500.00	9404.78				MinPt-O-ADP	
	177.58	104.50	107.35	73.08	2.57	OSF1.50	9522.26	9427.04				MinPt-O-SF	
	171.77	115.77	94.06	55.99	2.24	OSF1.50	10750.00	10648.83				MinPt-CtCt	
	171.83	115.93	94.02	55.90	2.23	OSF1.50	10760.00	10658.02				MINPT-O-EOU	
	172.00	116.10	94.08	55.90	2.23	OSF1.50	10770.00	10667.13				MinPts	
	427.49	131.60	339.22	295.89	4.91	OSF1.50	11280.00	10982.43	OSF>5.00			Exit Alert	
	9886.50	146.90	9788.05	9739.61	102.03	OSF1.50	20775.47	11000.00				TD	
Final Surveys - Cimarex Dos Equis 11-14 Federal Com 4H ST01 MWD 0ft-21967 (Def Survey)													Warning Alert
	1335.57	32.81	1333.87	1302.76	N/A	MAS = 10.00 (m)	0.00	0.00				MinPts	

Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
	1335.59	32.81	1333.87	1302.78	47111.11	MAS = 10.00 (m)	22.00	22.00				WRP	
	1335.78	32.81	1333.79	1302.98	4512.13	MAS = 10.00 (m)	90.00	90.00				MINPT-O-EOU	
	1336.24	32.81	1333.69	1303.43	1581.56	MAS = 10.00 (m)	170.00	170.00				MINPT-O-EOU	
	301.78	91.88	239.98	209.89	4.99	OSF1.50	8400.00	8315.26	OSF<5.00			Enter Alert	
	177.07	103.94	107.21	73.13	2.57	OSF1.50	9470.00	9374.78				MinPt-CtCt	
	177.16	104.15	107.15	73.00	2.57	OSF1.50	9490.00	9394.78				MINPT-O-EOU	
	177.25	104.26	107.17	72.99	2.57	OSF1.50	9500.00	9404.78				MinPt-O-ADP	
	177.58	104.50	107.35	73.08	2.57	OSF1.50	9522.26	9427.04				MinPt-O-SF	
	171.77	115.77	94.06	55.99	2.24	OSF1.50	10750.00	10648.83				MinPt-CtCt	
	171.83	115.93	94.02	55.90	2.23	OSF1.50	10760.00	10658.02				MINPT-O-EOU	
	172.00	116.10	94.08	55.90	2.23	OSF1.50	10770.00	10667.13				MinPts	
	427.49	131.60	339.22	295.89	4.91	OSF1.50	11280.00	10982.43	OSF>5.00			Exit Alert	
	1348.52	80.19	1294.58	1268.33	25.66	OSF1.50	12320.00	11000.00				MinPt-CtCt	
	1348.70	80.74	1294.39	1267.95	25.48	OSF1.50	12360.00	11000.00				MINPT-O-EOU	
	1349.04	81.16	1294.45	1267.88	25.36	OSF1.50	12390.00	11000.00				MinPt-O-ADP	
	1350.01	82.48	1294.54	1267.53	24.96	OSF1.50	12490.00	11000.00				MINPT-O-EOU	
	1350.29	82.80	1294.61	1267.49	24.87	OSF1.50	12510.00	11000.00				MinPt-O-ADP	
	1353.89	84.68	1296.96	1269.21	24.37	OSF1.50	12620.00	11000.00				MinPt-O-SF	
	1352.98	86.07	1295.12	1266.91	23.95	OSF1.50	12730.00	11000.00				MinPt-CtCt	
	1333.51	103.80	1263.83	1229.70	19.52	OSF1.50	13640.00	11000.00				MinPt-CtCt	
	1334.63	107.16	1262.71	1227.46	18.92	OSF1.50	13790.00	11000.00				MINPT-O-EOU	
	1334.87	119.53	1254.70	1215.34	16.94	OSF1.50	14300.00	11000.00				MinPt-CtCt	
	1337.23	125.48	1253.10	1211.76	16.15	OSF1.50	14540.00	11000.00				MINPT-O-EOU	
	1336.99	131.21	1249.04	1205.78	15.44	OSF1.50	14760.00	11000.00				MinPt-CtCt	
	1337.23	139.45	1243.78	1197.78	14.52	OSF1.50	15070.00	11000.00				MinPt-CtCt	
	1336.32	147.13	1237.76	1189.19	13.74	OSF1.50	15350.00	11000.00				MinPt-CtCt	
	1327.92	180.29	1207.25	1147.63	11.12	OSF1.50	16520.00	11000.00				MinPt-CtCt	
	1327.05	187.15	1201.81	1139.90	10.71	OSF1.50	16760.00	11000.00				MinPt-CtCt	
	1330.50	195.60	1199.62	1134.90	10.27	OSF1.50	17060.00	11000.00				MINPT-O-EOU	
	1331.87	197.24	1199.90	1134.63	10.19	OSF1.50	17120.00	11000.00				MinPt-O-ADP	
	1334.65	217.08	1189.46	1117.58	9.27	OSF1.50	17770.00	11000.00				MinPt-CtCt	
	1335.33	226.52	1183.84	1108.81	8.89	OSF1.50	18090.00	11000.00				MinPt-CtCt	
	1360.69	308.29	1154.68	1052.40	6.64	OSF1.50	20775.47	11000.00				MinPts	
MCI Operating Hanagan Federal #2 (Offset) Oil Blind 0ft-4962ft (Def Survey)													Warning Alert
	3181.44	32.81	3178.94	3148.63	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	3181.40	32.81	3178.23	3148.59	4741.10	MAS = 10.00 (m)	22.00	22.00				WRP	
	3181.40	453.83	2878.01	2727.57	10.57	OSF1.50	1500.00	1500.00				MinPt-CtCt	
	3309.79	995.27	2645.44	2314.52	5.00	OSF1.50	3240.00	3221.58	OSF<5.00			Enter Alert	
	3476.53	1547.59	2443.97	1928.94	3.37	OSF1.50	5020.00	4978.70				MinPts	
	4377.32	1317.53	3497.55	3059.78	4.99	OSF1.50	7360.00	7288.63	OSF>5.00			Exit Alert	
	6649.66	668.33	6202.28	5981.33	15.04	OSF1.50	13590.00	11000.00				MinPt-CtCt	
	6649.69	668.40	6202.26	5981.29	15.03	OSF1.50	13610.00	11000.00				MINPT-O-EOU	
	6649.73	668.44	6202.27	5981.29	15.03	OSF1.50	13620.00	11000.00				MinPt-O-ADP	
	8496.85	1110.84	7754.68	7386.02	11.52	OSF1.50	18880.00	11000.00				MinPt-O-SF	
	9789.87	1239.51	8962.01	8550.35	11.89	OSF1.50	20775.47	11000.00				TD	
MCI Operating Gulf Hanagan Federal #2 (Offset) Oil Blind 0ft-5046ft (Def Survey)													Warning Alert
	4427.20	32.81	4424.70	4394.40	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	4427.17	32.81	4424.07	4394.37	7281.75	MAS = 10.00 (m)	22.00	22.00				WRP	
	4427.17	453.64	4123.91	3973.53	14.71	OSF1.50	1500.00	1500.00				MinPt-CtCt	
	4605.82	1386.32	3680.78	3219.50	4.99	OSF1.50	4500.00	4465.38	OSF<5.00			Enter Alert	
	4649.90	1574.05	3599.70	3075.85	4.44	OSF1.50	5110.00	5067.54				MinPts	
	4998.82	1502.83	3995.76	3495.99	5.00	OSF1.50	6630.00	6568.01	OSF>5.00			Exit Alert	
	6572.38	692.51	6108.84	5879.86	14.34	OSF1.50	14970.00	11000.00				MinPt-CtCt	
	6572.44	692.67	6108.80	5879.77	14.34	OSF1.50	15000.00	11000.00				MINPT-O-EOU	
	6572.56	692.81	6108.82	5879.75	14.33	OSF1.50	15020.00	11000.00				MinPt-O-ADP	
	8355.04	1131.32	7599.18	7223.72	11.12	OSF1.50	20130.00	11000.00				MinPt-O-SF	
	8768.28	1181.95	7978.71	7586.33	11.17	OSF1.50	20775.47	11000.00				TD	
Cimarex Dos Equis 11-14 Federal Com 49H Rev0 RM 22Aug19 (Non-Def Plan)													Pass
	1095.81	32.81	1093.31	1063.00	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	1095.79	32.81	1093.29	1062.98	N/A	MAS = 10.00 (m)	22.00	22.00				WRP	
	1095.79	32.81	1081.28	1062.98	90.98	MAS = 10.00 (m)	1500.00	1500.00				MinPts	
	1095.86	32.81	1081.18	1063.05	89.76	MAS = 10.00 (m)	1520.00	1520.00				MINPT-O-EOU	
	2298.92	134.84	2208.20	2164.08	26.03	OSF1.50	10590.00	10494.62				MINPT-O-EOU	
	2299.12	135.07	2208.24	2164.05	25.99	OSF1.50	10610.00	10514.44				MinPt-O-ADP	
	2326.71	139.58	2232.82	2187.13	25.43	OSF1.50	11060.00	10889.24				MinPt-O-SF	
	2748.68	511.73	2406.69	2236.94	8.09	OSF1.50	20760.00	11000.00				MinPt-CtCt	
	2748.70	512.08	2406.48	2236.62	8.08	OSF1.50	20775.47	11000.00				MinPts	
Bill J Graham Oil Hanagan D #4 (Offset) Plugged Oil Inc Only 0ft-5107ft (Def Survey)													Pass
	1451.46	32.81	1448.96	1418.65	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	1451.43	32.81	1448.90	1418.62	50690.65	MAS = 10.00 (m)	10.00	10.00				MinPts	
	1451.43	32.81	1448.70	1418.62	6127.43	MAS = 10.00 (m)	22.00	22.00				WRP	
	1450.43	64.13	1406.84	1386.30	35.24	OSF1.50	1220.00	1220.00				MinPt-CtCt	
	1459.13	95.46	1394.65	1363.67	23.50	OSF1.50	1770.00	1769.60				MINPT-O-EOU	
	1471.88	122.01	1389.71	1349.87	18.44	OSF1.50	2270.00	2264.04				MINPT-O-EOU	
	1473.49	123.93	1390.04	1349.56	18.17	OSF1.50	2320.00	2313.40				MinPt-O-ADP	
	1482.25	132.90	1392.81	1349.35	17.02	OSF1.50	2490.00	2481.21				MinPt-O-ADP	
	1548.50	186.75	1423.17	1361.75	12.59	OSF1.50	3440.00	3419.01				MinPt-O-ADP	
	1567.15	206.42	1428.71	1360.73	11.51	OSF1.50	3860.00	3833.61				MinPt-O-ADP	
	1647.50	265.39	1469.74	1382.11	9.39	OSF1.50	4820.00	4781.27				MinPts	
	1650.58	269.11	1470.34	1381.47	9.27	OSF1.50	4930.00	4889.86				MINPT-O-EOU	
	1651.70	270.44	1470.58	1381.26	9.23	OSF1.50	4970.00	4929.34				MinPt-O-ADP	
	1662.75	276.25	1477.75	1386.50	9.10	OSF1.50	5160.00	5116.90				MinPt-O-SF	
	6078.65	108.94	6004.06	5969.71	88.39	OSF1.50	12270.00	11000.00				MinPt-CtCt	
	6078.75	109.22	6003.98	5969.54	88.15	OSF1.50	12310.00	11000.00				MINPT-O-EOU	
	6078.82	109.29	6004.00	5969.53	88.09	OSF1.50	12320.00	11000.00				MinPt-O-ADP	
	8088.19	245.59	7922.78	7842.59	50.40	OSF1.50	17610.00	11000.00				MinPt-O-SF	
	10450.77	289.80	10256.08	10160.96	54.92	OSF1.50	20775.47	11000.00				TD	

Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
Continental Wimberly #6 (Offset) - Plugged Oil Inc Only 0ft-5100ft (Def Survey)													Pass
	1616.29	32.81	1613.79	1583.48	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	1615.49	32.81	1612.86	1582.68	12109.02	MAS = 10.00 (m)	22.00	22.00				MinPt-O-SF	
	1614.80	32.81	1612.13	1581.99	9463.04	MAS = 10.00 (m)	70.00	70.00				MinPts	
	1614.52	38.89	1587.76	1575.63	66.46	OSF1.50	870.00	870.00				MinPt-CtCt	
	1622.27	82.51	1566.43	1539.76	30.37	OSF1.50	1660.00	1659.92				MINPT-O-EOU	
	1625.12	86.15	1566.85	1538.96	29.10	OSF1.50	1720.00	1719.78				MinPt-O-ADP	
	2185.68	266.20	2007.34	1919.48	12.42	OSF1.50	5290.00	5245.23				MinPt-O-SF	
	8458.25	240.41	8296.34	8217.84	53.84	OSF1.50	16380.00	11000.00				MinPt-O-SF	
	11775.87	293.58	11578.74	11482.29	61.02	OSF1.50	20775.47	11000.00				TD	
Cimarex Dos Equis 11 Federal #2H XEM + MWD 0ft to 11103ft (Def Survey)													Pass
	1965.13	32.81	1962.63	1932.32	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	1965.09	32.81	1962.59	1932.29	812565.86	MAS = 10.00 (m)	10.00	10.00				MinPt-O-SF	
	1965.09	32.81	1962.59	1932.28	N/A	MAS = 10.00 (m)	22.00	22.00				WRP	
	1962.57	32.81	1951.91	1929.76	240.30	MAS = 10.00 (m)	1210.00	1210.00				MinPts	
	1961.60	32.81	1948.76	1928.79	189.50	MAS = 10.00 (m)	1520.00	1520.00				MinPts	
	1961.69	32.81	1948.71	1928.88	187.00	MAS = 10.00 (m)	1540.00	1540.00				MINPT-O-EOU	
	3066.15	115.90	2988.03	2950.25	40.55	OSF1.50	10600.00	10504.54				MinPt-CtCt	
	3066.39	116.58	2987.81	2949.81	40.31	OSF1.50	10670.00	10573.15				MINPT-O-EOU	
	3066.55	116.77	2987.84	2949.78	40.25	OSF1.50	10690.00	10592.39				MinPt-O-ADP	
	3102.49	121.57	3020.61	2980.92	39.05	OSF1.50	11250.00	10974.30				MinPt-O-SF	
	10500.44	166.51	10388.58	10333.93	96.05	OSF1.50	20775.47	11000.00				TD	
Cimarex Dos Equis 11 Federal #2H ST01 Xem+MWD 10343ft to 15244ft (Def Survey)													Pass
	1965.13	32.81	1962.63	1932.32	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	1965.09	32.81	1962.59	1932.29	812565.86	MAS = 10.00 (m)	10.00	10.00				MinPt-O-SF	
	1965.09	32.81	1962.59	1932.28	N/A	MAS = 10.00 (m)	22.00	22.00				WRP	
	1962.57	32.81	1951.91	1929.76	240.30	MAS = 10.00 (m)	1210.00	1210.00				MinPts	
	1961.60	32.81	1948.76	1928.79	189.50	MAS = 10.00 (m)	1520.00	1520.00				MinPts	
	1961.69	32.81	1948.71	1928.88	187.00	MAS = 10.00 (m)	1540.00	1540.00				MINPT-O-EOU	
	2805.07	139.33	2710.97	2665.74	30.97	OSF1.50	11680.00	11000.00				MinPt-CtCt	
	2805.54	140.68	2710.53	2664.86	30.68	OSF1.50	11750.00	11000.00				MINPT-O-EOU	
	2806.05	141.26	2710.65	2664.79	30.56	OSF1.50	11780.00	11000.00				MinPt-O-ADP	
	2837.22	179.49	2716.32	2657.73	24.18	OSF1.50	12650.00	11000.00				MINPT-O-EOU	
	2847.65	220.41	2699.51	2627.24	19.68	OSF1.50	13330.00	11000.00				MinPt-CtCt	
	2821.39	377.77	2568.32	2443.62	11.30	OSF1.50	15240.00	11000.00				MinPt-CtCt	
	2821.54	378.27	2568.11	2443.27	11.29	OSF1.50	15270.00	11000.00				MINPT-O-EOU	
	2821.66	378.43	2568.11	2443.23	11.28	OSF1.50	15280.00	11000.00				MinPt-O-ADP	
	2827.06	380.24	2572.19	2446.82	11.26	OSF1.50	15420.00	11000.00				MinPt-O-SF	
	6212.00	260.47	6035.23	5951.53	37.05	OSF1.50	20775.47	11000.00				TD	
Continental Wimberly #1 (Offset) Plugged Oil Inc Only 0ft-5091ft (Def Survey)													Pass
	2143.81	32.81	2141.31	2111.00	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	2143.80	32.81	2141.26	2110.99	47115.42	MAS = 10.00 (m)	10.00	10.00				MinPts	
	2143.80	32.81	2141.05	2110.99	8653.82	MAS = 10.00 (m)	22.00	22.00				WRP	
	2144.64	84.22	2087.66	2060.42	39.32	OSF1.50	1560.00	1560.00				MinPt-CtCt	
	2147.05	91.68	2085.10	2055.37	36.07	OSF1.50	1700.00	1699.84				MINPT-O-EOU	
	2150.17	95.42	2085.72	2054.75	34.67	OSF1.50	1770.00	1769.60				MinPt-O-ADP	
	2589.34	270.97	2407.86	2318.36	14.45	OSF1.50	5140.00	5097.16				MinPt-O-SF	
	6548.08	146.58	6448.49	6401.50	69.62	OSF1.50	12260.00	11000.00				MinPt-CtCt	
	6548.15	146.77	6448.43	6401.38	69.53	OSF1.50	12290.00	11000.00				MINPT-O-EOU	
	6548.27	146.90	6448.46	6401.37	69.47	OSF1.50	12310.00	11000.00				MinPt-O-ADP	
	8330.12	252.88	8159.88	8077.24	50.37	OSF1.50	17410.00	11000.00				MinPt-O-SF	
	10741.31	297.81	10541.30	10443.50	54.89	OSF1.50	20775.47	11000.00				TD	
Cimarex Dos Equis 11-14 Federal Com 63H Rev0 RM 26Aug19 (Def Plan)													Pass
	2424.40	32.81	2421.90	2391.59	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	2424.38	32.81	2421.88	2391.57	N/A	MAS = 10.00 (m)	10.00	10.00				MinPts	
	2424.38	32.81	2421.88	2391.57	N/A	MAS = 10.00 (m)	22.00	22.00				WRP	
	2424.38	32.81	2409.87	2391.57	201.75	MAS = 10.00 (m)	1500.00	1500.00				MinPts	
	2424.45	32.81	2409.78	2391.64	199.03	MAS = 10.00 (m)	1520.00	1520.00				MINPT-O-EOU	
	3631.46	135.04	3540.60	3496.42	41.07	OSF1.50	10610.00	10514.44				MINPT-O-EOU	
	3631.84	135.50	3540.68	3496.35	40.93	OSF1.50	10650.00	10553.72				MinPt-O-ADP	
	3678.83	141.33	3583.77	3537.49	39.72	OSF1.50	11290.00	10984.80				MinPt-O-SF	
	3682.15	141.46	3587.01	3540.69	39.72	OSF1.50	11310.00	10989.04				MinPt-O-SF	
	3698.71	140.06	3604.50	3558.64	40.30	OSF1.50	11410.00	10999.87				MinPt-O-SF	
	3685.59	529.38	3331.84	3156.21	10.49	OSF1.50	20760.00	11000.00				MinPt-CtCt	
	3685.63	529.81	3331.59	3155.82	10.48	OSF1.50	20775.47	11000.00				MinPts	
Cimarex Dos Equis 11-14 Federal Com 62H Rev0 RM 23Aug19 (Def Plan)													Pass
	2444.35	32.81	2441.85	2411.54	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	2444.33	32.81	2441.83	2411.52	N/A	MAS = 10.00 (m)	10.00	10.00				MinPts	
	2444.33	32.81	2441.83	2411.52	N/A	MAS = 10.00 (m)	22.00	22.00				WRP	
	2444.33	32.81	2429.82	2411.52	203.40	MAS = 10.00 (m)	1500.00	1500.00				MinPts	
	2444.40	32.81	2429.73	2411.59	200.66	MAS = 10.00 (m)	1520.00	1520.00				MINPT-O-EOU	
	3961.64	126.42	3876.53	3835.22	47.92	OSF1.50	10610.00	10514.44				MINPT-O-EOU	
	3961.99	126.86	3876.59	3835.13	47.76	OSF1.50	10650.00	10553.72				MinPt-O-ADP	
	4019.81	133.23	3930.15	3886.58	46.09	OSF1.50	11380.00	10998.44				MinPt-O-SF	
	4046.70	134.04	3956.51	3912.66	46.12	OSF1.50	11520.00	11000.00				MinPt-O-SF	
	4068.75	134.69	3978.13	3934.06	46.14	OSF1.50	11620.00	11000.00				MinPt-O-SF	
	4093.13	135.43	4002.01	3957.71	46.16	OSF1.50	11720.00	11000.00				MinPt-O-SF	
	4117.03	136.14	4025.43	3980.89	46.18	OSF1.50	11810.00	11000.00				MinPt-O-SF	
	4168.91	532.62	3812.99	3636.29	11.79	OSF1.50	20750.00	11000.00				MinPt-CtCt	
	4168.96	533.43	3812.50	3635.53	11.77	OSF1.50	20775.47	11000.00				MinPts	
Cimarex Dos Equis 11-14 Federal Com 8H Rev0 RM 22Aug19 (Def Plan)													Pass
	2464.31	32.81	2461.81	2431.50	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	2464.29	32.81	2461.79	2431.48	N/A	MAS = 10.00 (m)	10.00	10.00				MinPts	
	2464.29	32.81	2461.79	2431.48	N/A	MAS = 10.00 (m)	22.00	22.00				WRP	
	2464.29	32.81	2449.78	2431.48	205.05	MAS = 10.00 (m)	1500.00	1500.00				MinPts	

Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
	2464.36	32.81	2449.69	2431.55	202.29	MAS = 10.00 (m)	1520.00	1520.00				MINPT-O-EOU	
	4474.21	125.46	4389.74	4348.75	54.55	OSF1.50	10620.00	10524.31				MINPT-O-EOU	
	4474.56	125.87	4389.81	4348.69	54.37	OSF1.50	10660.00	10563.46				MinPt-O-ADP	
	4658.46	536.10	4300.22	4122.35	13.09	OSF1.50	20750.00	11000.00				MinPt-CtCt	
	4658.52	536.98	4299.70	4121.54	13.07	OSF1.50	20775.47	11000.00				MinPts	
Rover Operating Co Wimberly #5 (Offset) Oil Inc Only 0ft-5050ft (Def Survey)													Pass
	2932.21	32.81	2929.71	2899.40	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	2932.03	32.81	2929.51	2899.22	127679.55	MAS = 10.00 (m)	20.00	20.00				MinPt-O-SF	
	2932.02	32.81	2929.50	2899.21	132305.27	MAS = 10.00 (m)	22.00	22.00				WRP	
	2931.98	32.81	2929.40	2899.18	32942.95	MAS = 10.00 (m)	40.00	40.00				MinPts	
	2929.04	62.31	2886.67	2866.73	73.40	OSF1.50	1210.00	1210.00				MinPt-CtCt	
	2935.01	82.15	2879.41	2852.86	55.23	OSF1.50	1610.00	1609.97				MINPT-O-EOU	
	2938.79	86.78	2880.10	2852.00	52.26	OSF1.50	1680.00	1679.88				MinPt-O-ADP	
	3484.32	267.83	3304.93	3216.48	19.68	OSF1.50	5130.00	5087.29				MinPt-O-SF	
	9067.10	257.45	8893.89	8809.65	53.79	OSF1.50	16420.00	11000.00				MinPt-O-SF	
	12203.12	310.51	11994.73	11892.61	59.73	OSF1.50	20775.47	11000.00				TD	
Cimarex Dos Equis 11 Federal #1H Extreme+MWD 0ft to 15324ft (Def Survey)													Pass
	2950.71	32.81	2948.21	2917.90	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	2950.69	32.81	2948.18	2917.88	420665.03	MAS = 10.00 (m)	22.00	22.00				WRP	
	2949.94	32.81	2946.64	2917.13	3685.52	MAS = 10.00 (m)	170.00	170.00				MinPts	
	2950.14	32.81	2946.50	2917.34	2570.51	MAS = 10.00 (m)	220.00	220.00				MINPT-O-EOU	
	2951.34	32.81	2946.50	2918.54	1259.37	MAS = 10.00 (m)	390.00	390.00				MINPT-O-EOU	
	2952.53	32.81	2940.57	2919.72	311.94	MAS = 10.00 (m)	1380.00	1380.00				MinPts	
	2952.81	32.81	2939.86	2920.00	282.39	MAS = 10.00 (m)	1520.00	1520.00				MINPT-O-EOU	
	4119.46	115.53	4041.61	4003.93	54.64	OSF1.50	10600.00	10504.54				MinPt-CtCt	
	4119.56	115.84	4041.47	4003.71	54.53	OSF1.50	10630.00	10534.15				MINPT-O-EOU	
	4119.65	115.95	4041.48	4003.70	54.49	OSF1.50	10640.00	10543.95				MinPt-O-ADP	
	4082.79	140.89	3987.89	3941.90	44.36	OSF1.50	11740.00	11000.00				MinPt-CtCt	
	4085.71	147.80	3986.19	3937.90	42.28	OSF1.50	11980.00	11000.00				MINPT-O-EOU	
	4093.63	163.73	3983.51	3929.90	38.16	OSF1.50	12340.00	11000.00				MINPT-O-EOU	
	4096.51	167.13	3984.11	3929.38	37.40	OSF1.50	12440.00	11000.00				MinPt-O-ADP	
	4133.65	237.76	3974.22	3895.90	26.37	OSF1.50	13610.00	11000.00				MinPt-CtCt	
	4117.20	335.51	3892.57	3781.68	18.55	OSF1.50	15140.00	11000.00				MinPt-CtCt	
	4117.66	386.44	3859.05	3731.23	16.10	OSF1.50	15280.00	11000.00				MINPT-O-EOU	
	4118.22	387.07	3859.17	3731.15	16.07	OSF1.50	15310.00	11000.00				MinPt-O-ADP	
	4148.82	394.18	3884.78	3754.64	15.92	OSF1.50	15730.00	11000.00				MinPt-O-SF	
	6915.73	340.48	6685.91	6575.25	31.21	OSF1.50	20775.47	11000.00				TD	
Rover Operating Co Wimberly #7 (Offset) Oil Inc Only 0ft-5118ft (Def Survey)													Pass
	2958.50	32.81	2956.00	2925.69	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	2958.35	32.81	2955.84	2925.54	187498.18	MAS = 10.00 (m)	20.00	20.00				MinPt-O-SF	
	2958.35	32.81	2955.83	2925.54	207108.45	MAS = 10.00 (m)	22.00	22.00				WRP	
	2958.33	32.81	2955.80	2925.52	104021.52	MAS = 10.00 (m)	30.00	30.00				MinPts	
	2962.42	46.68	2930.46	2915.74	100.48	OSF1.50	890.00	890.00				MinPt-CtCt	
	2964.04	51.45	2928.90	2912.58	90.75	OSF1.50	1030.00	1030.00				MINPT-O-EOU	
	2963.32	64.36	2919.58	2898.96	71.79	OSF1.50	1220.00	1220.00				MinPt-CtCt	
	2964.15	66.85	2918.75	2897.30	69.04	OSF1.50	1310.00	1310.00				MINPT-O-EOU	
	2965.06	84.19	2908.10	2880.87	54.40	OSF1.50	1560.00	1560.00				MinPt-CtCt	
	2965.64	85.91	2907.53	2879.73	53.29	OSF1.50	1610.00	1609.97				MINPT-O-EOU	
	2966.16	86.57	2907.62	2879.60	52.88	OSF1.50	1630.00	1629.96				MinPt-O-ADP	
	3024.16	114.96	2946.69	2909.20	40.30	OSF1.50	2120.00	2115.97				MinPt-O-ADP	
	3467.30	271.15	3285.68	3196.14	19.35	OSF1.50	5230.00	5186.00				MinPts	
	6987.08	174.55	6868.91	6812.54	61.93	OSF1.50	12260.00	11000.00				MinPt-CtCt	
	6987.17	174.73	6868.86	6812.43	61.86	OSF1.50	12290.00	11000.00				MINPT-O-EOU	
	6987.22	174.80	6868.88	6812.43	61.84	OSF1.50	12300.00	11000.00				MinPt-O-ADP	
	8599.89	266.29	8420.74	8333.61	49.32	OSF1.50	17270.00	11000.00				MinPt-O-SF	
	11018.09	312.28	10808.46	10705.82	53.65	OSF1.50	20775.47	11000.00				TD	
Bill J Graham Oil Hanagan D #3 (Offset) Oil Plugged Inc Only 0ft-4986ft (Def Survey)													Pass
	4008.57	32.81	4006.07	3975.76	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	4008.53	32.81	4006.00	3975.72	114239.29	MAS = 10.00 (m)	20.00	20.00				MinPts	
	4008.53	32.81	4005.96	3975.72	60731.06	MAS = 10.00 (m)	22.00	22.00				WRP	
	4005.61	85.04	3948.08	3920.57	72.75	OSF1.50	1560.00	1560.00				MinPt-CtCt	
	4006.94	88.83	3946.89	3918.11	69.58	OSF1.50	1650.00	1649.93				MINPT-O-EOU	
	4008.73	90.98	3947.25	3917.75	67.92	OSF1.50	1700.00	1699.84				MinPt-O-ADP	
	4426.53	267.95	4247.05	4158.58	25.00	OSF1.50	5130.00	5087.29				MinPts	
	7296.57	194.42	7165.21	7102.15	57.81	OSF1.50	13570.00	11000.00				MinPt-CtCt	
	7296.82	195.21	7164.94	7101.62	57.57	OSF1.50	13630.00	11000.00				MINPT-O-EOU	
	7297.27	195.74	7165.03	7101.52	57.41	OSF1.50	13670.00	11000.00				MinPt-O-ADP	
	8674.28	286.70	8481.55	8387.58	46.13	OSF1.50	18260.00	11000.00				MinPt-O-SF	
	10255.23	322.00	10039.08	9933.23	48.42	OSF1.50	20775.47	11000.00				TD	
Rover Operating Co Wimberly #6 (Offset) Oil Inc Only 0ft-5075ft (Def Survey)													Pass
	4115.63	32.81	4113.13	4082.83	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	4115.62	32.81	4112.97	4082.81	27566.83	MAS = 10.00 (m)	20.00	20.00				MinPts	
	4115.62	32.81	4112.94	4082.81	22414.15	MAS = 10.00 (m)	22.00	22.00				WRP	
	4118.71	85.74	4060.72	4032.97	74.18	OSF1.50	1600.00	1599.98				MinPt-CtCt	
	4140.61	154.02	4037.09	3986.59	40.97	OSF1.50	2930.00	2915.56				MINPT-O-EOU	
	4150.79	167.99	4037.96	3982.80	37.60	OSF1.50	3210.00	3191.96				MinPt-O-ADP	
	4169.86	195.69	4038.57	3974.17	32.36	OSF1.50	3580.00	3557.21				MinPt-CtCt	
	4173.07	205.26	4035.39	3967.80	30.85	OSF1.50	3840.00	3813.87				MINPT-O-EOU	
	4177.41	210.47	4036.26	3966.94	30.11	OSF1.50	3980.00	3952.07				MinPt-O-ADP	
	4185.37	218.47	4038.88	3966.90	29.05	OSF1.50	4160.00	4129.75				MinPt-O-ADP	
	4233.53	270.48	4052.38	3963.05	23.68	OSF1.50	5010.00	4968.83				MinPts	
	4237.12	270.92	4055.67	3966.20	23.66	OSF1.50	5130.00	5087.29				MinPt-O-SF	
	6191.13	152.12	6087.79	6039.01	63.41	OSF1.50	14920.00	11000.00				MinPt-CtCt	
	6191.50	153.28	6087.39	6038.22	62.91	OSF1.50	14990.00	11000.00				MINPT-O-EOU	
	6192.07	153.97	6087.49	6038.10	62.62	OSF1.50	15030.00	11000.00				MinPt-O-ADP	
	7634.91	260.72	7459.38	7374.19	44.78	OSF1.50	19390.00	11000.00				MinPt-O-SF	
	8520.07	283.86	8329.20	8236.22	45.79	OSF1.50	20775.47	11000.00				TD	

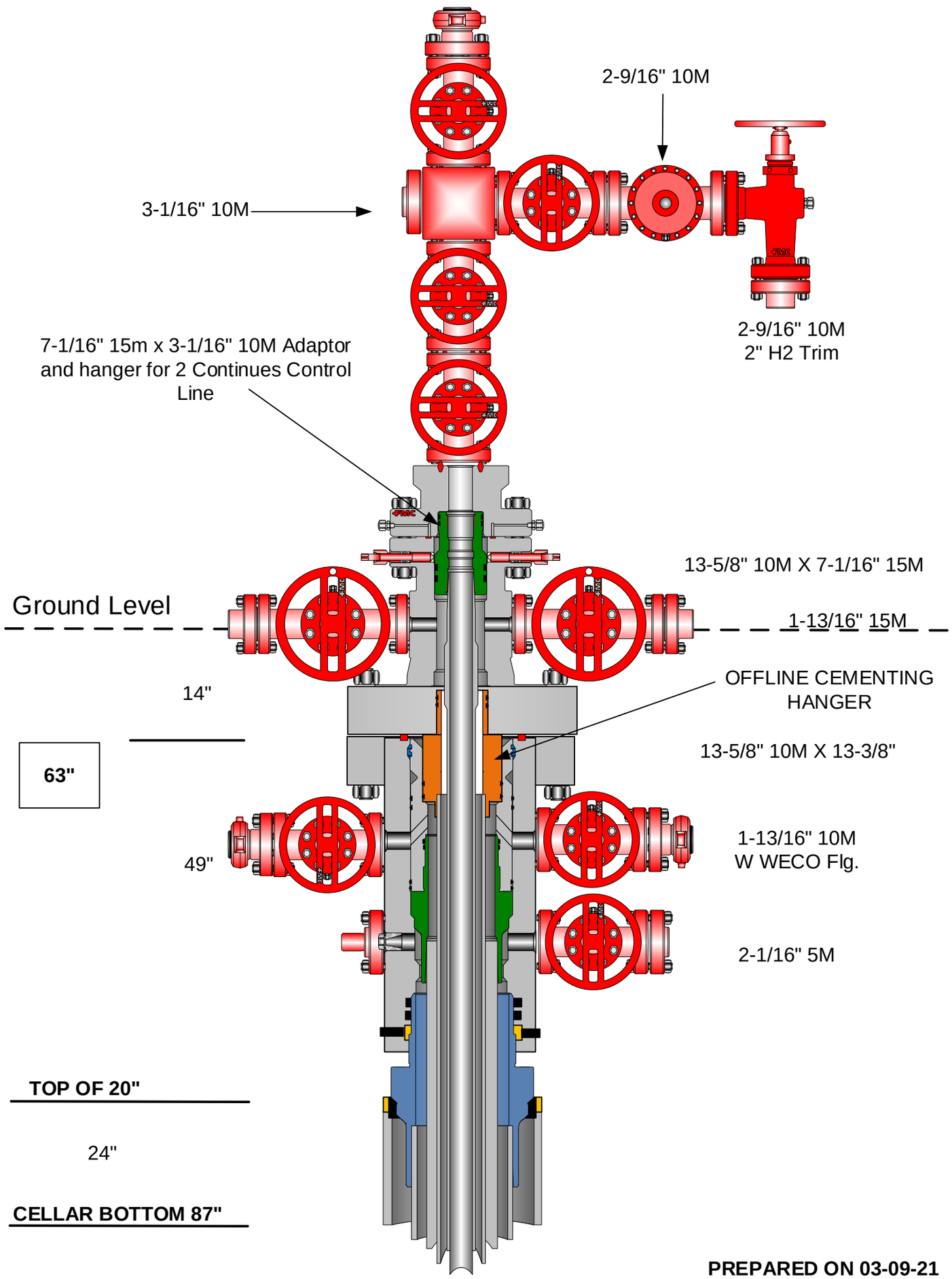
Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
Marks and Garner Hanagan Federal #1 (Offset) Oil Blind 0ft-5065ft (Def Survey)													Pass
	5003.64	32.81	5001.14	4970.83	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	5003.62	32.81	5000.23	4970.81	5616.04	MAS = 10.00 (m)	22.00	22.00				WRP	
	5003.62	454.49	4699.79	4549.12	16.60	OSF1.50	1500.00	1500.00				MinPt-CtCt	
	5338.22	1579.64	4284.30	3758.58	5.07	OSF1.50	5120.00	5077.42				MinPts	
	5339.27	1579.99	4285.11	3759.28	5.07	OSF1.50	5130.00	5087.29				MinPt-O-SF	
	7224.54	921.19	6608.64	6303.35	11.82	OSF1.50	14900.00	11000.00				MinPt-CtCt	
	7224.59	921.33	6608.60	6303.26	11.82	OSF1.50	14930.00	11000.00				MINPT-O-EOU	
	7224.63	921.38	6608.61	6303.26	11.82	OSF1.50	14940.00	11000.00				MinPt-O-ADP	
	8365.28	1143.58	7601.25	7221.71	11.01	OSF1.50	19120.00	11000.00				MinPt-O-SF	
	9310.27	1247.85	8476.81	8062.42	11.23	OSF1.50	20775.47	11000.00				TD	
MCI Operating Jennings Federal #1 (Offset) SWD Blind 0ft-5019ft (Def Survey)													Pass
	5400.59	32.81	5398.09	5367.78	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	5400.56	32.81	5398.06	5367.75	N/A	MAS = 10.00 (m)	10.00	10.00				MinPt-O-SF	
	5400.55	32.81	5398.05	5367.74	N/A	MAS = 10.00 (m)	22.00	22.00				WRP	
	5400.55	32.81	5386.03	5367.74	449.25	MAS = 10.00 (m)	1500.00	1500.00				MinPts	
	5402.32	32.81	5384.18	5369.51	345.28	MAS = 10.00 (m)	1940.00	1938.27				MINPT-O-EOU	
	5414.63	40.51	5386.79	5374.12	213.59	OSF1.50	3020.00	3004.40				MinPt-O-ADP	
	6029.92	92.51	5966.96	5937.41	101.96	OSF1.50	7530.00	7456.45				MinPt-O-SF	
	6142.70	155.04	6037.41	5987.66	61.67	OSF1.50	16240.00	11000.00				MinPt-CtCt	
	6143.21	156.68	6036.83	5986.53	61.01	OSF1.50	16320.00	11000.00				MINPT-O-EOU	
	6144.06	157.70	6037.00	5986.36	60.61	OSF1.50	16370.00	11000.00				MinPt-O-ADP	
	6809.82	206.29	6670.47	6603.53	50.82	OSF1.50	19180.00	11000.00				MinPt-O-SF	
	7635.38	222.14	7485.57	7413.24	52.74	OSF1.50	20775.47	11000.00				TD	
Tenneco Oil Company USA Jennings Fed #3 (Offset) Plugged Oil Inc Only 0ft-5030ft (Def Survey)													Pass
	5619.47	32.81	5616.97	5586.66	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	5619.37	32.81	5616.85	5586.56	376728.02	MAS = 10.00 (m)	20.00	20.00				MinPt-O-SF	
	5619.36	32.81	5616.84	5586.55	379908.60	MAS = 10.00 (m)	22.00	22.00				WRP	
	5619.33	32.81	5616.76	5586.52	88068.83	MAS = 10.00 (m)	40.00	40.00				MinPts	
	5619.43	33.84	5596.04	5585.60	268.86	OSF1.50	680.00	680.00				MinPt-CtCt	
	5636.40	116.61	5557.83	5519.79	74.06	OSF1.50	2130.00	2125.84				MINPT-O-EOU	
	5645.37	127.42	5559.59	5517.94	67.76	OSF1.50	2400.00	2392.37				MinPt-O-ADP	
	5739.65	222.39	5590.55	5517.25	39.14	OSF1.50	4090.00	4060.65				MINPT-O-EOU	
	5744.55	228.30	5591.52	5516.25	38.14	OSF1.50	4260.00	4228.47				MinPt-O-ADP	
	5794.30	266.01	5616.12	5528.28	32.97	OSF1.50	5050.00	5008.32				MinPts	
	5798.26	267.44	5619.13	5530.82	32.81	OSF1.50	5120.00	5077.42				MinPt-O-SF	
	6569.41	208.59	6428.50	6360.82	48.49	OSF1.50	16230.00	11000.00				MinPt-CtCt	
	6570.03	210.33	6427.96	6359.70	48.09	OSF1.50	16320.00	11000.00				MINPT-O-EOU	
	6570.70	211.12	6428.10	6359.58	47.91	OSF1.50	16360.00	11000.00				MinPt-O-ADP	
	7530.02	288.53	7335.95	7241.49	39.83	OSF1.50	19910.00	11000.00				MinPt-O-SF	
	7988.77	302.98	7785.11	7685.79	40.19	OSF1.50	20775.47	11000.00				TD	
MCI Operating Jennings Federal #2 (Offset) Inc Only 0ft-5000ft (Def Survey)													Pass
	9182.85	32.81	9180.35	9150.05	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	9182.75	32.81	9180.24	9149.94	574876.88	MAS = 10.00 (m)	22.00	22.00				WRP	
	9182.69	32.81	9180.06	9149.89	68182.81	MAS = 10.00 (m)	60.00	60.00				MinPts	
	9152.82	375.52	8901.63	8777.30	36.80	OSF1.50	5160.00	5116.90				MinPt-CtCt	
	9152.83	375.56	8901.61	8777.27	36.79	OSF1.50	5180.00	5136.65				MinPts	
	9155.35	375.90	8903.88	8779.44	36.78	OSF1.50	5380.00	5334.08				MinPt-O-SF	
	7523.92	263.40	7346.60	7260.52	43.67	OSF1.50	15390.00	11000.00				MinPt-O-SF	
	5952.86	229.85	5797.67	5723.01	39.82	OSF1.50	19990.00	11000.00				MinPt-CtCt	
	5953.67	232.22	5796.91	5721.45	39.41	OSF1.50	20090.00	11000.00				MINPT-O-EOU	
	5954.71	233.45	5797.12	5721.26	39.21	OSF1.50	20140.00	11000.00				MinPt-O-ADP	
	6004.27	251.41	5834.72	5752.86	36.64	OSF1.50	20775.47	11000.00				MinPt-O-SF	
MCI Operating Jennings Federal #4 (Offset) Oil Inc Only 0ft-5000ft (Def Survey)													Pass
	8043.23	32.81	8040.73	8010.43	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	8043.21	32.81	8040.65	8010.40	125863.82	MAS = 10.00 (m)	22.00	22.00				WRP	
	8043.21	45.07	8012.33	7998.14	283.34	OSF1.50	860.00	860.00				MinPt-CtCt	
	8037.29	146.85	7938.56	7890.44	83.49	OSF1.50	2780.00	2767.49				MinPt-CtCt	
	8041.95	161.63	7933.36	7880.33	75.80	OSF1.50	3210.00	3191.96				MINPT-O-EOU	
	8047.45	168.23	7934.45	7879.22	72.83	OSF1.50	3410.00	3389.39				MinPt-O-ADP	
	8035.27	231.10	7880.37	7804.17	52.71	OSF1.50	4310.00	4277.83				MinPt-CtCt	
	8040.29	245.84	7875.54	7794.45	49.56	OSF1.50	4730.00	4692.43				MINPT-O-EOU	
	8045.61	252.32	7876.53	7793.28	48.31	OSF1.50	4920.00	4879.99				MinPt-O-ADP	
	8058.11	269.24	7877.77	7788.88	45.31	OSF1.50	5230.00	5186.00				MinPts	
	8064.63	269.61	7884.01	7795.01	45.30	OSF1.50	5390.00	5343.95				MinPt-O-SF	
	6096.99	218.62	5949.31	5878.36	42.93	OSF1.50	18890.00	11000.00				MinPt-CtCt	
	6097.69	220.55	5948.73	5877.14	42.55	OSF1.50	18980.00	11000.00				MINPT-O-EOU	
	6098.43	221.42	5948.89	5877.01	42.38	OSF1.50	19020.00	11000.00				MinPt-O-ADP	
	6382.63	263.07	6205.37	6119.56	37.16	OSF1.50	20775.47	11000.00				MinPt-O-SF	
MCI Operating Jennings Federal #5 (Offset) Oil Inc Only 0ft-4950ft (Def Survey)													Pass
	6722.41	32.81	6719.91	6689.60	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	6722.32	32.81	6719.81	6689.51	539167.26	MAS = 10.00 (m)	20.00	20.00				MinPt-O-SF	
	6722.31	32.81	6719.80	6689.51	543719.65	MAS = 10.00 (m)	22.00	22.00				WRP	
	6722.29	32.81	6719.73	6689.48	105362.90	MAS = 10.00 (m)	40.00	40.00				MinPts	
	6728.12	122.03	6645.93	6606.09	84.40	OSF1.50	2290.00	2283.78				MinPt-CtCt	
	6738.44	154.43	6634.64	6584.00	66.51	OSF1.50	3060.00	3043.89				MINPT-O-EOU	
	6761.80	253.65	6591.87	6508.15	40.37	OSF1.50	4720.00	4682.56				MinPt-CtCt	
	6763.83	259.75	6589.82	6504.07	39.42	OSF1.50	4950.00	4909.60				MINPT-O-EOU	
	6766.45	262.92	6590.33	6503.53	38.96	OSF1.50	5070.00	5028.06				MinPt-O-ADP	
	6772.02	263.46	6595.51	6508.56	38.93	OSF1.50	5220.00	5176.13				MinPt-O-SF	
	6207.35	196.87	6074.21	6010.48	48.66	OSF1.50	17560.00	11000.00				MinPt-CtCt	
	6207.90	198.51	6073.66	6009.39	48.25	OSF1.50	17640.00	11000.00				MINPT-O-EOU	
	6208.76	199.56	6073.83	6009.20	47.99	OSF1.50	17690.00	11000.00				MinPt-O-ADP	
	6991.93	271.47	6809.17	6720.45	39.38	OSF1.50	20775.47	11000.00				MinPt-O-SF	

Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
MCI Operating Jennings Federal #6 (Offset) Oil Inc Only 0ft-4933ft (Def Survey)													Pass
	8192.62	32.81	8190.12	8159.81	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	8192.52	32.81	8190.00	8159.71	575067.88	MAS = 10.00 (m)	22.00	22.00				WRP	
	8192.48	32.81	8189.87	8159.67	76873.43	MAS = 10.00 (m)	50.00	50.00				MinPts	
	8223.82	137.11	8131.58	8086.71	91.61	OSF1.50	2580.00	2570.06				MINPT-O-EOU	
	8295.88	248.72	8129.23	8047.16	50.52	OSF1.50	4640.00	4603.58				MINPT-O-EOU	
	8300.23	253.74	8130.23	8046.49	49.54	OSF1.50	4800.00	4761.53				MinPt-O-ADP	
	8320.95	262.41	8145.14	8058.54	48.02	OSF1.50	5250.00	5205.75				MinPt-O-SF	
	6643.42	269.36	6462.03	6374.07	37.73	OSF1.50	18880.00	11000.00				MinPt-CtCt	
	6644.19	271.57	6461.32	6372.61	37.42	OSF1.50	18980.00	11000.00				MINPT-O-EOU	
	6645.13	272.69	6461.52	6372.44	37.27	OSF1.50	19030.00	11000.00				MinPt-O-ADP	
	6908.72	310.80	6699.74	6597.92	33.90	OSF1.50	20775.47	11000.00				MinPt-O-SF	

Dos Equis 11-14 Fed Com 25H **LEA CO., NM**

Hole Size	Casing Depth From	Casing Depth To	Setting Depth TVD	Casing Size	Weight (lb/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17 1/2	0	1216	1216	13-3/8"	48.00	H-40	ST&C	1.40	3.28	5.52
12 1/4	0	4860	4860	9-5/8"	40.00	HCK-55	LT&C	1.46	1.52	2.89
8 3/4	0	10522	10522	7"	29.00	L-80	LT&C	1.43	1.66	1.84
8 3/4	10522	11422	11000	7"	29.00	P-110	BT&C	1.66	2.18	67.02
6	9522	20775	11000	4-1/2"	11.60	P-110	BT&C	1.47	2.08	21.41
						BLM Minimum Safety Factor		1.125	1	1.6 Dry 1.8 Wet

CACTUS FOR SERVICE
WEARBUSHING
IN CASING HEAD &
CASING SPOOL



PREPARED ON 03-09-21

Cimarex Energy Offline Cementing 7” Casing Information for Sundry Approval Plan REV0

Cementing Operational Workflow

Conventional Cementing

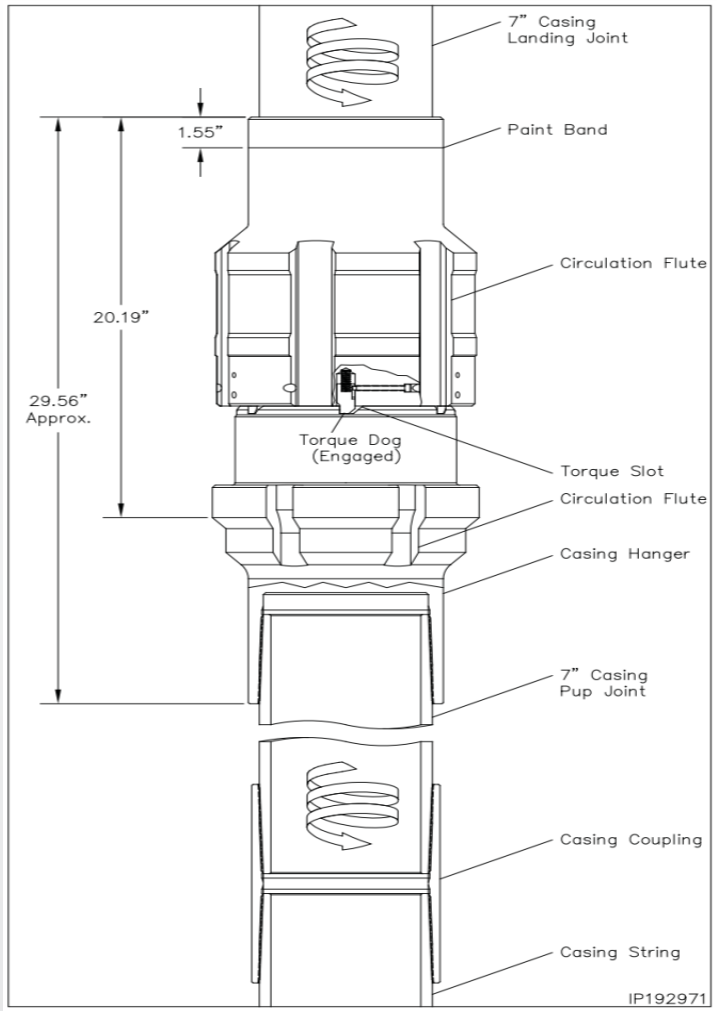
1. Land casing on fluted mandrel hanger
2. Circulate down casing, taking returns through BOP stack
3. Pump lead and tail cement
4. Displace cement and bump the plug
5. Ensure floats are holding pressure
6. RD cement crew
7. Install packoff to isolate pressure
8. Install BPV and skid rig

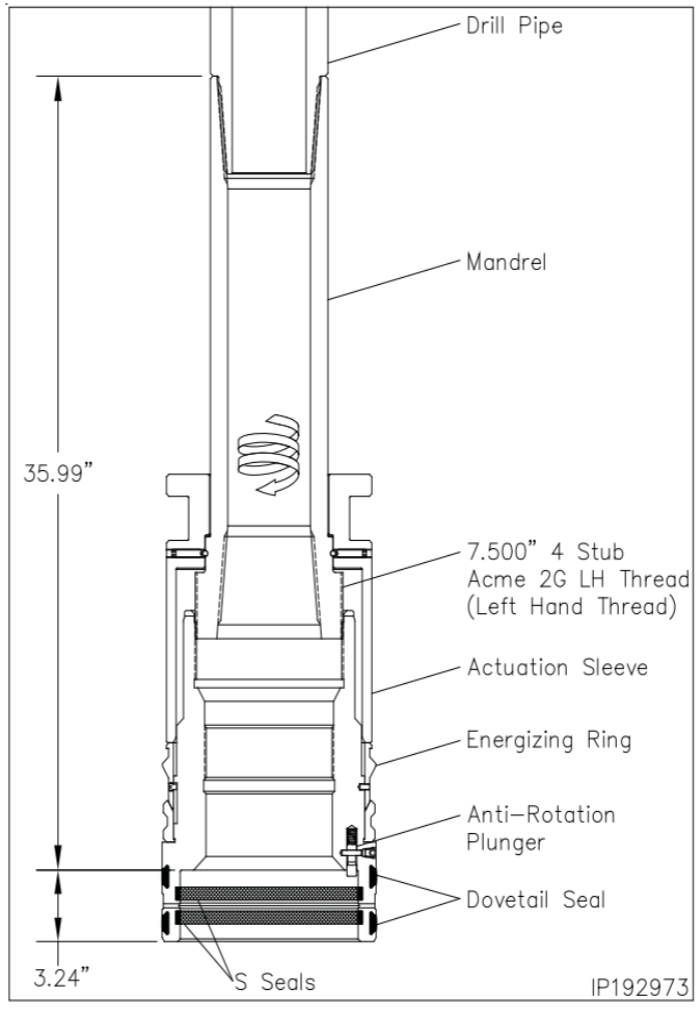
Offline Cementing

1. Land casing on **solid body** mandrel hanger
   a) Engage packoff and lockring
2. Install BPV
3. Skid rig
4. Check for pressure and remove BPV
5. Circulate down casing, taking returns through casing valves
6. Pump lead and tail cement
7. Displace cement and bump the plug
8. Ensure floats are holding pressure
9. RD cement crew
10. Install BPV and TA cap

Conventional Cementing Equipment-Fluted Mandrel

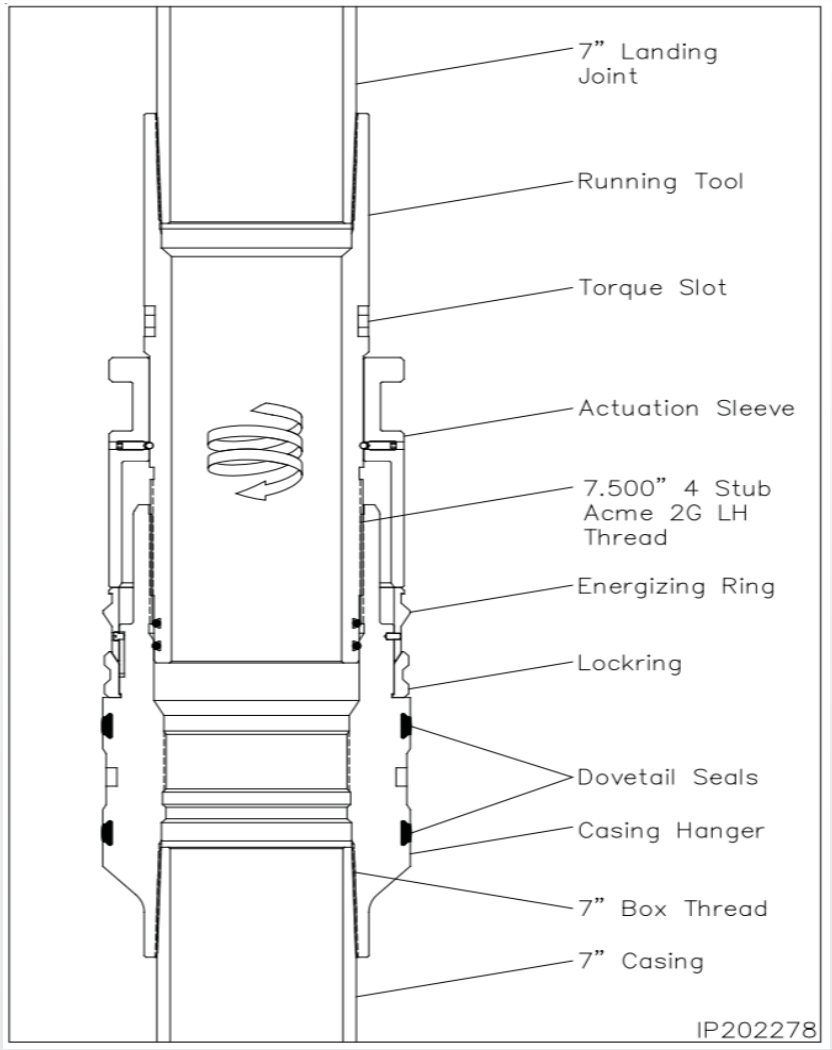
- Fluted Hanger allows returns up past the hanger body
- Returns throughout cement job flow up through BOP stack and into flowline
- Packoff is installed **after** cement job to isolate pressure above and below hanger
- Lockring engaged during packoff installation



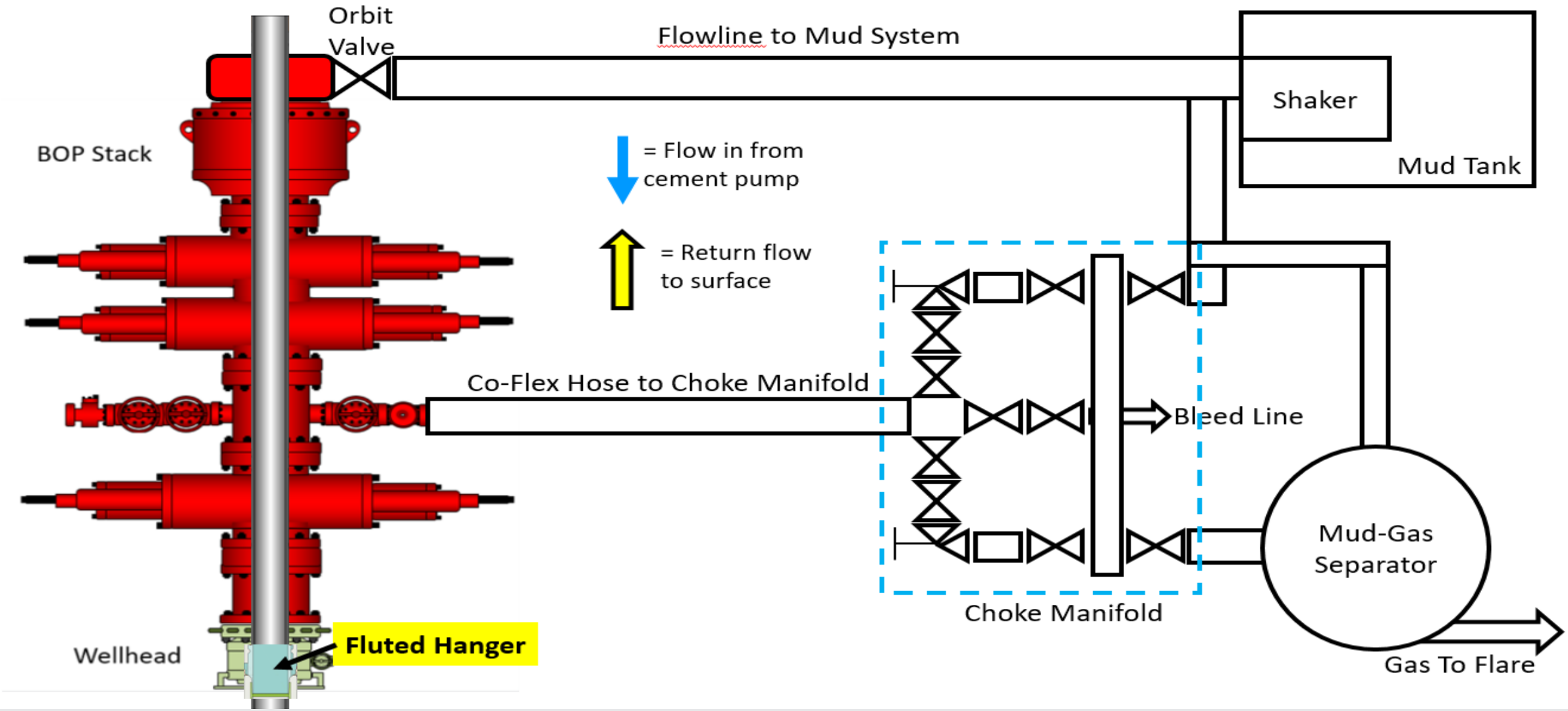


Offline Cementing Equipment-Solid Body Mandrel Hanger

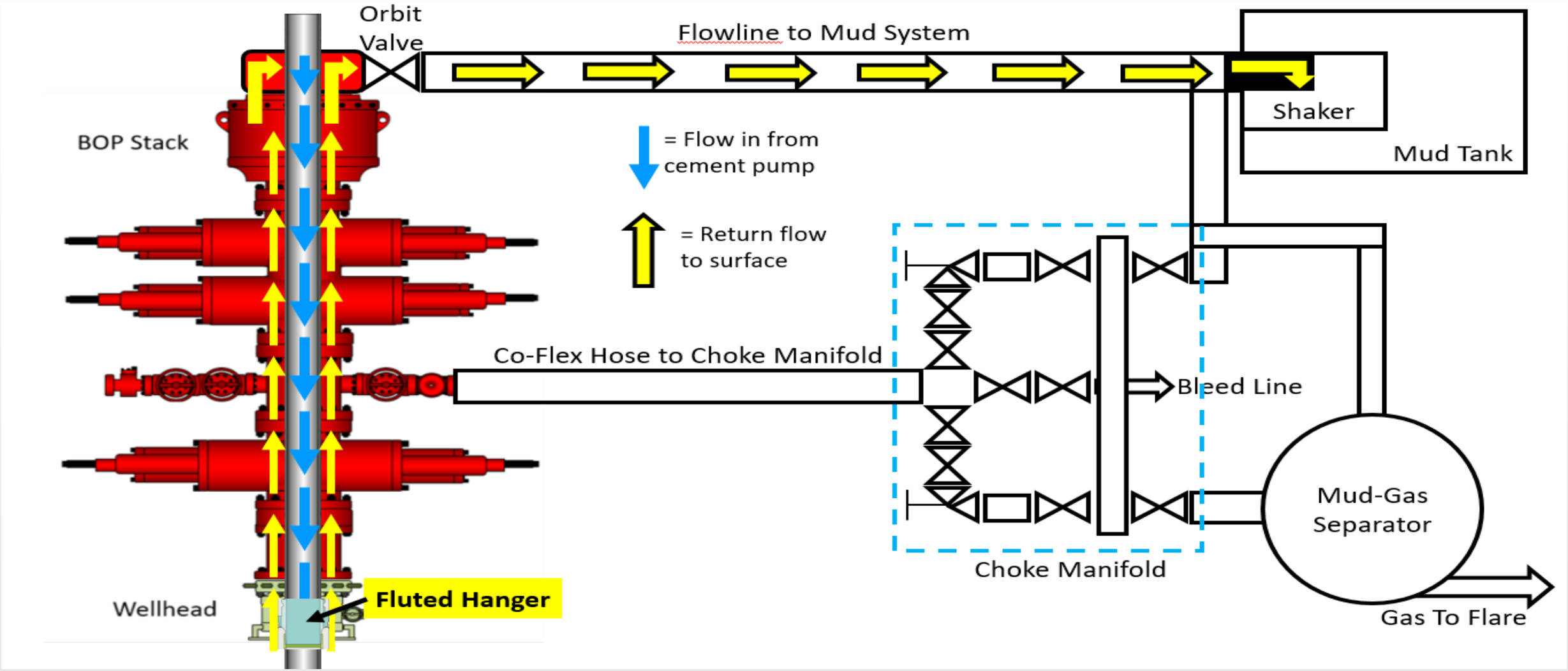
- Solid Body Mandrel Hanger allows for casing to be landed and pressure isolated in one step, **prior** to cementing
- Lockring is engaged to lock casing in place
- Casing is isolated and returns throughout cement job flow through the casing valves and through flowback iron independent of rig



Conventional Cementing Flow Diagram



Conventional Cementing Flow Diagram



Offline Cementing -- Intermediate Casing

= Flow in from cement pump

= Return flow to surface

Cement Company Iron

Tank

Mud-Gas Separator

Gas To Flare

Solid Body Hanger

3” Flowback Iron

Same process flow as other casing valve

Choke Manifold

Open Top Tank

Offline Cementing -- Intermediate Casing

= Flow in from cement pump

= Return flow to surface

Cement Company Iron

Tank

Mud-Gas Separator

Gas To Flare

Solid Body Hanger

3” Flowback Iron

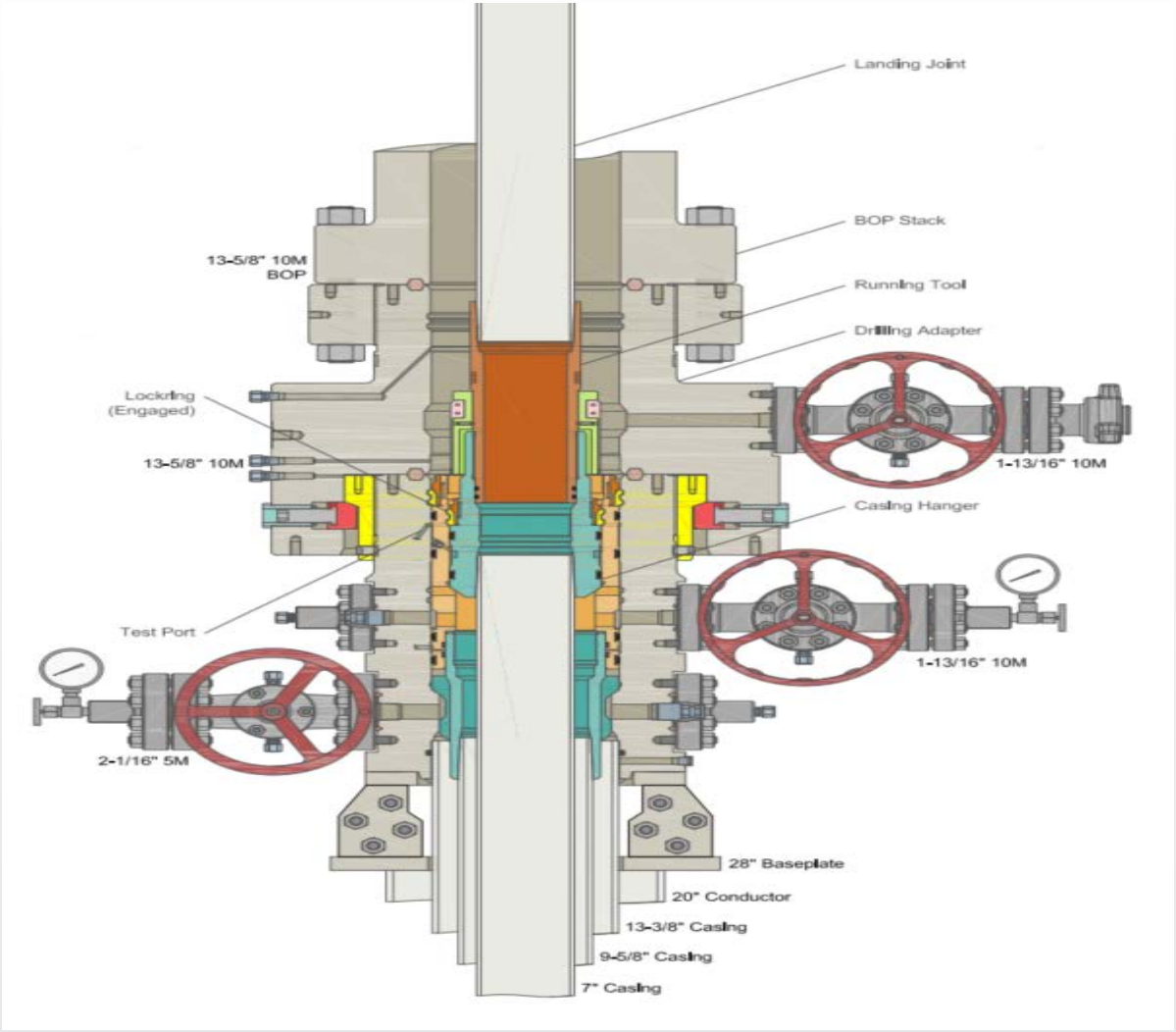
Same process flow as other casing valve

Choke Manifold

Open Top Tank

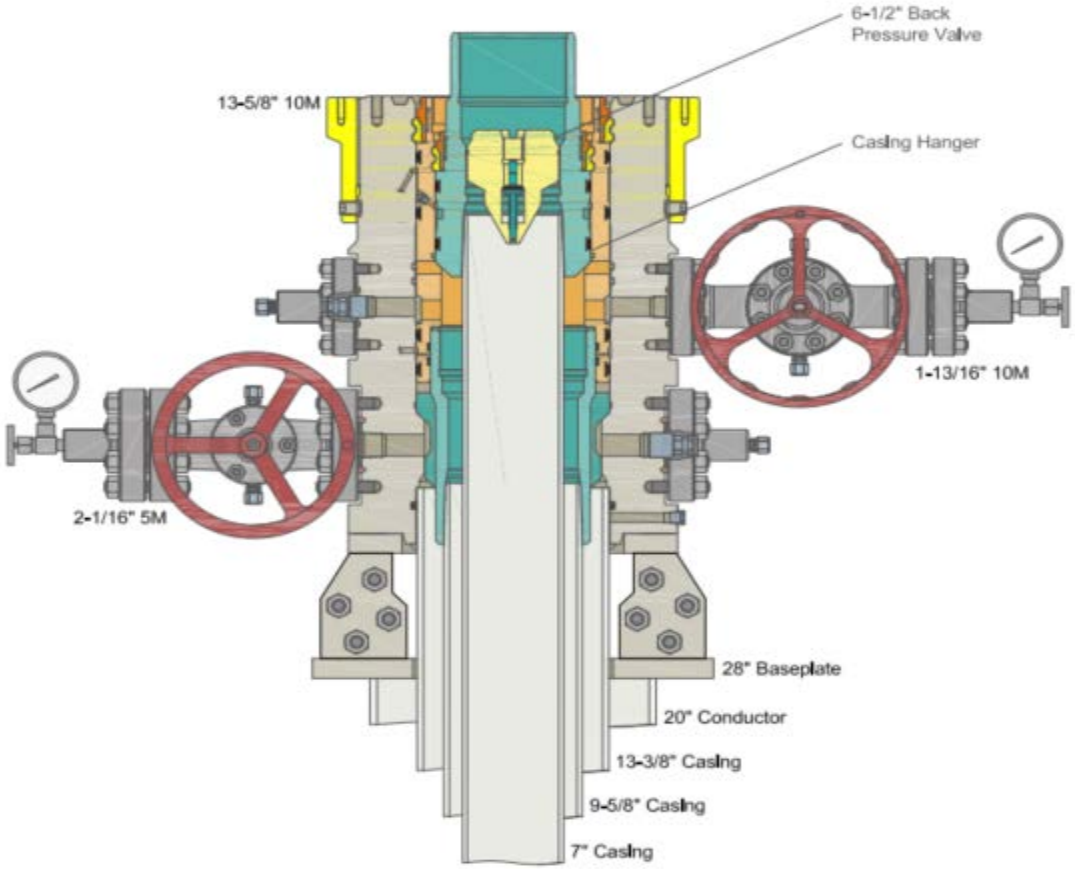
Offline Cementing Progression

- Run 7” casing
- Land 11” nominal x 7” hanger
- Test casing hanger
- Energize 11” nom x 7” hanger lock ring and pull test
- Re-test casing hanger
- Barriers & Procedures after landing casing before setting packoff
  - 10K BOP & 5K Annular-Internal and Annular barrier
  - Kill Weight Fluid in annulus and casing (ensure well is static before setting solid body packoff) Internal and Annular barrier
    - **If well is not static we <u>WILL NOT</u> set solid body packoff.**
  - 10K float collar-Internal Barrier
  - 10k float Shoe-Internal Barrier
    - **<u>After circulating a 1.5 casing capacities to ensure full column of mud and no entrained gas pumps will be shut off and floats checked for flow</u>**



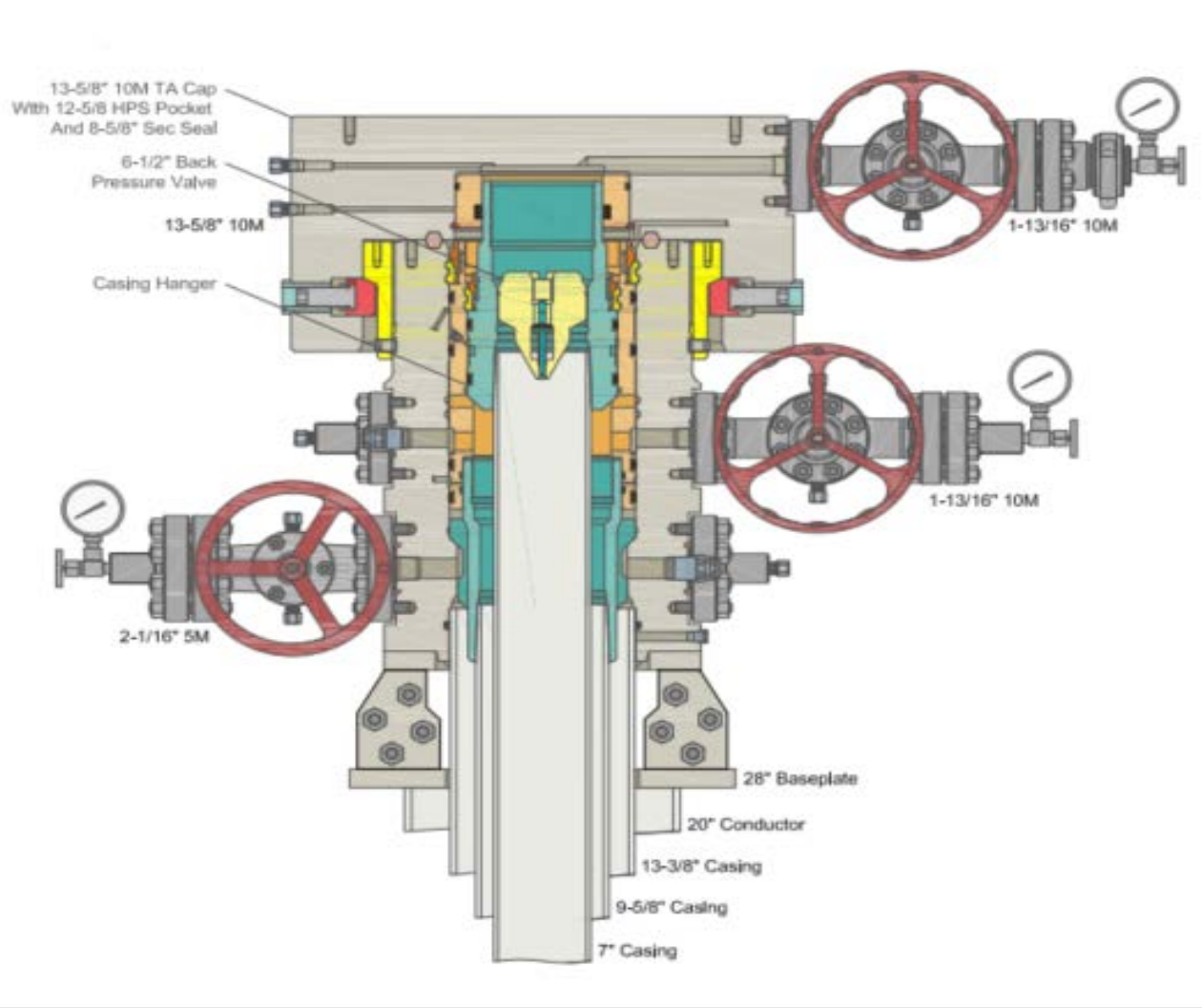
Offline Cementing Progression

- Pick up running tool with 6-1/2” nominal Back Pressure valve run into well and set
- Barriers and procedures **BEFORE** removing BOP’s
  - Kill weight Fluid in annulus-Annular Barrier
  - Solid Body Packoff-Annular Barrier
  - 10K Float Equipment-Internal Barrier
  - 10K Back pressure valve installed with BOP still on well-Internal Barrier
    - BPV will be tested before it arrives on location by Cactus



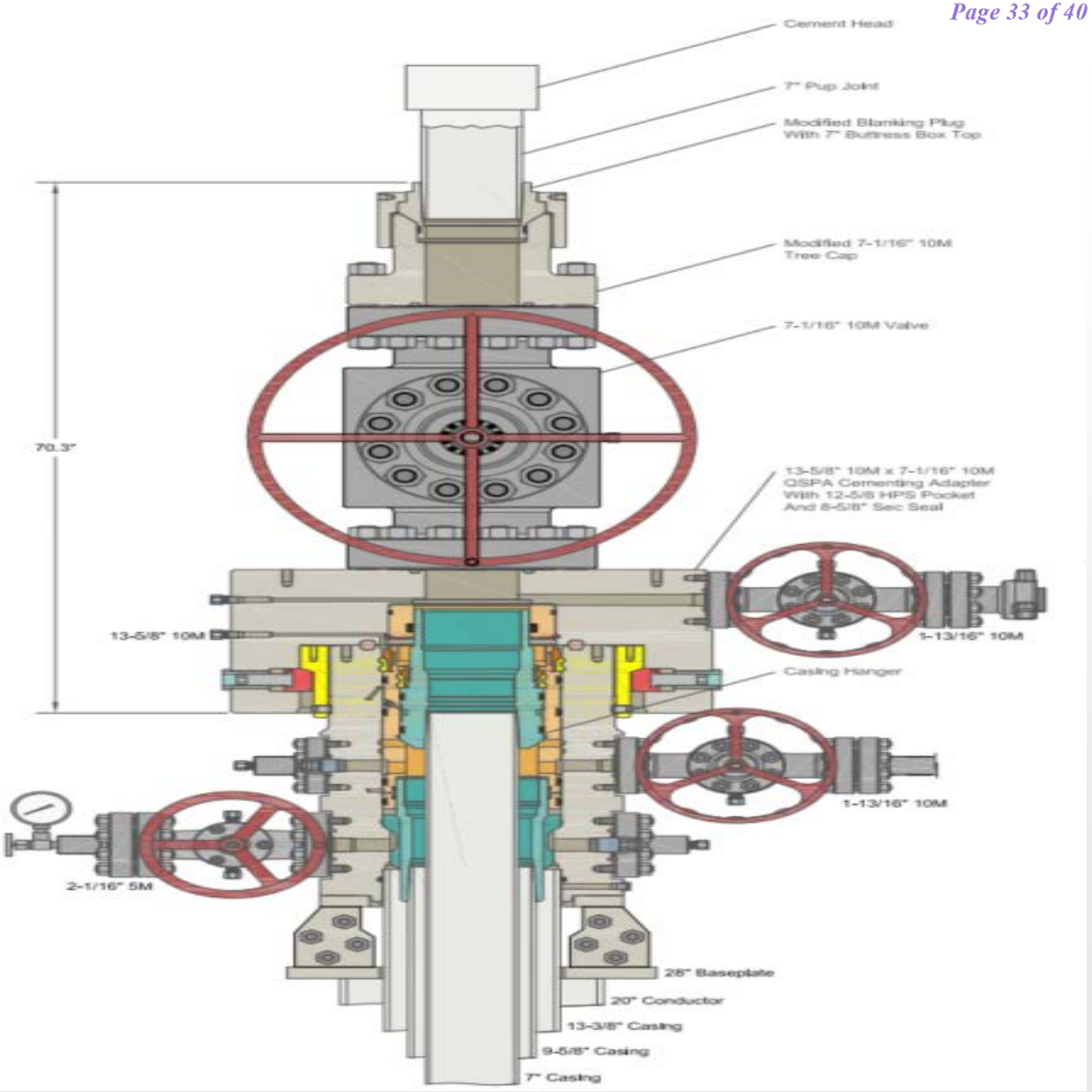
Offline Cementing Progression

- Nipple down BOP
- Nipple up TA Cap and test
- Skid Drilling Rig
- Barriers and procedures **AFTER** removing BOP's
  - Kill weight Fluid in annulus-Annular Barrier
  - Solid Body Packoff-Annular Barrier
  - 10K Float Equipment-Internal Barrier
  - 10K Back pressure valve-Internal Barrier
  - 10K rated TA cap with Valve-Internal Barrier



Offline Cementing Progression

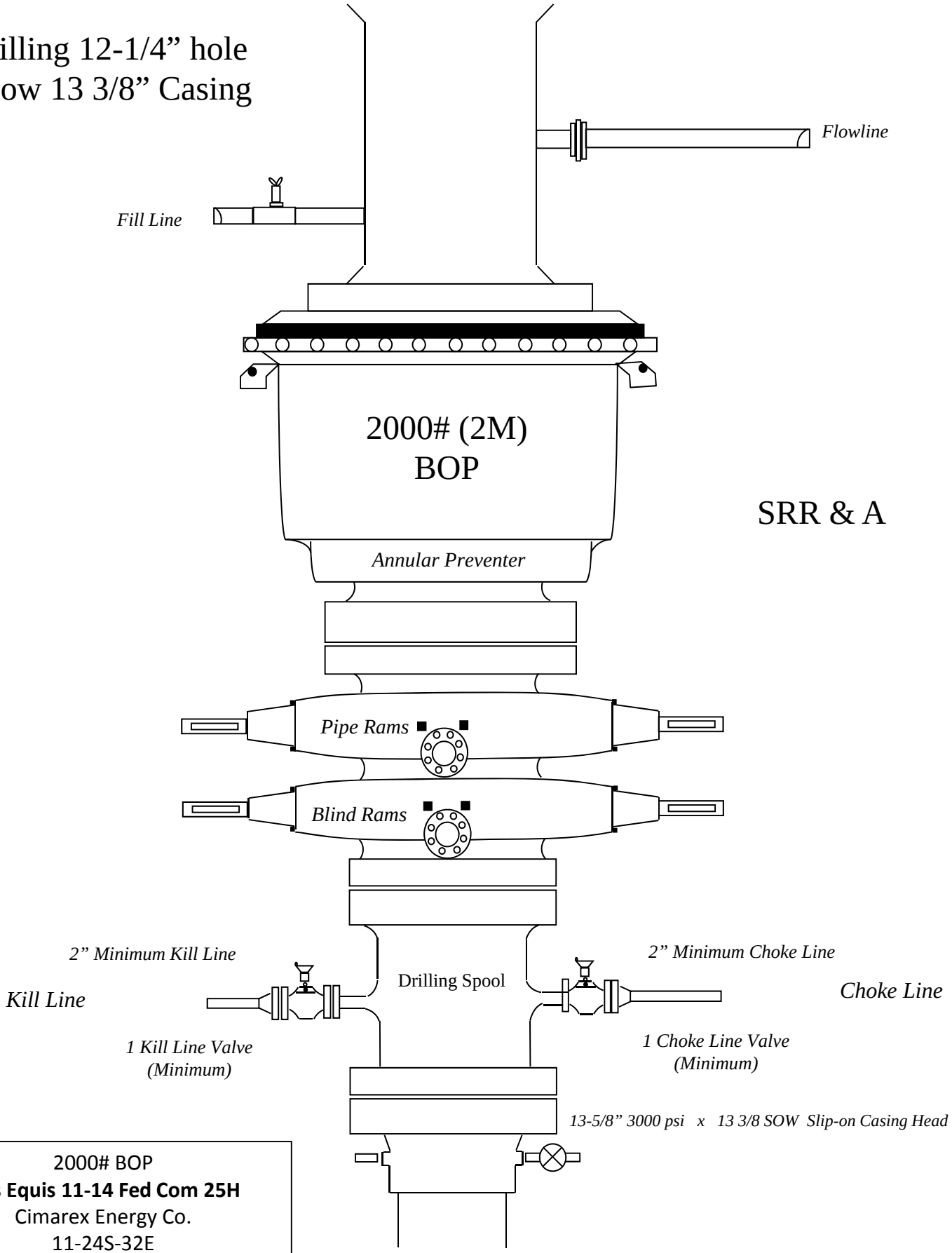
- Check Pressure on TA Cap and remove
- Install adaptor with Gate valve for off line cementing and test
- Rig up flowback iron independent of rig
- Retrieve Back Pressure Valve
- Shut in well
- Rig up to cement and pump job
- NU 10K TA cap after cement job
- Barriers and procedures before **rigging up cementing equipment**
  - **Address well and ensure no pressure on TA cap**
    - **Ability to pump into well through casing valves on backside to kill if needed**
  - Kill weight Fluid in annulus-Annular barrier
  - Solid Body Packoff-Annular barrier
  - 10K Float Equipment-Internal Barrier
  - 10K Back pressure valve-Internal Barrier



Offline Cementing Risk and COA Compliance

- All testing and breaks tested in accordance with Onshore Order # 2 and COA's
- If no cement to surface, bradenhead squeeze still possible with offline cementing equipment
- Time from skid rig to offline cementing ops typically 24 hours
- Conditions where we would not Offline Cement
  - Well is flowing
- All wellhead equipment equipment rated to 10K maintaining APD compliant
  - 10K flowback iron independent of rig circulating system
  - 10K Back Pressure Valve
  - 10K Gate Valve & TA combo for second barrier during operations
  - 10K 1-13/16 Valve coming off TA cap
  - 10K TA Cap

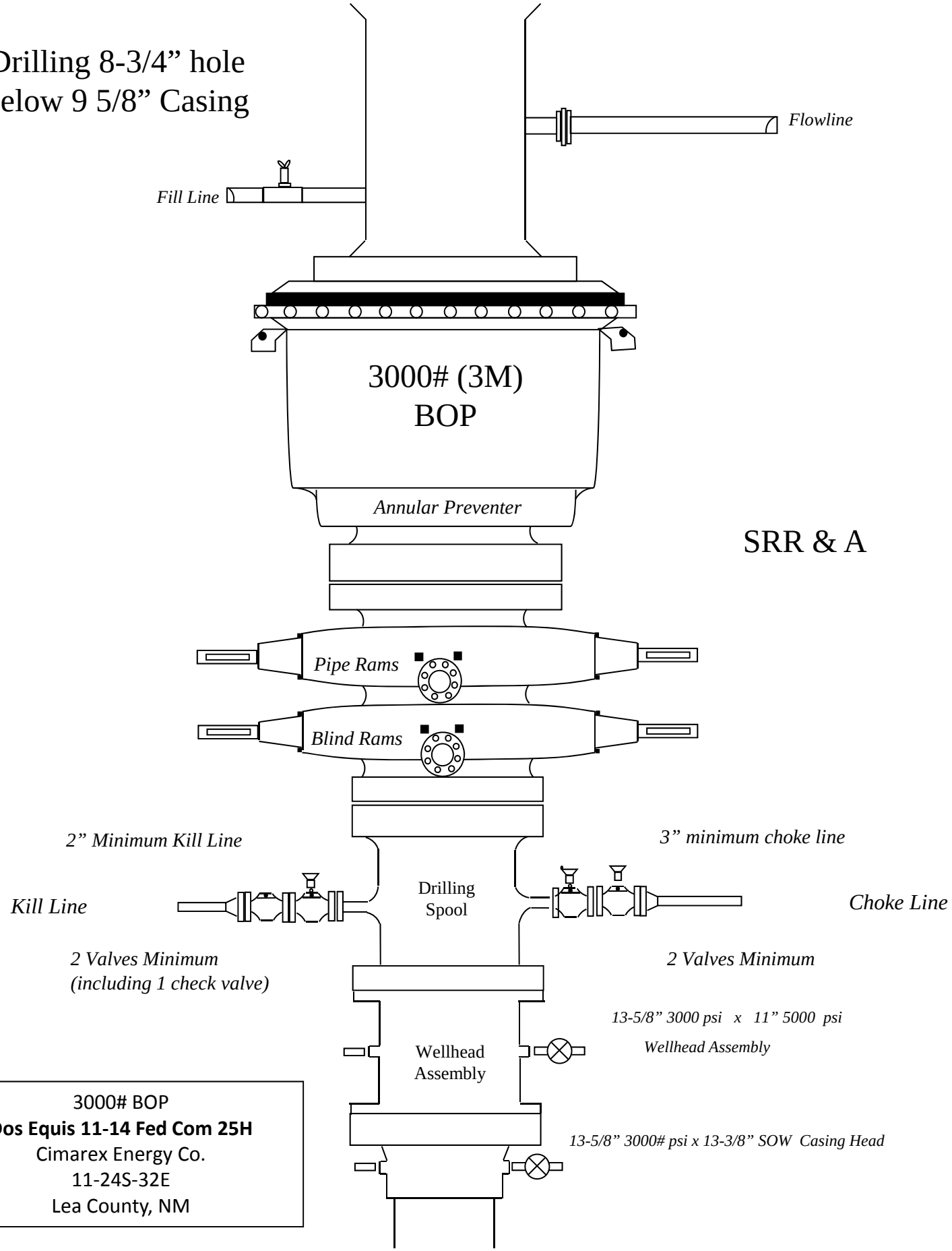
Drilling 12-1/4” hole
below 13 3/8” Casing



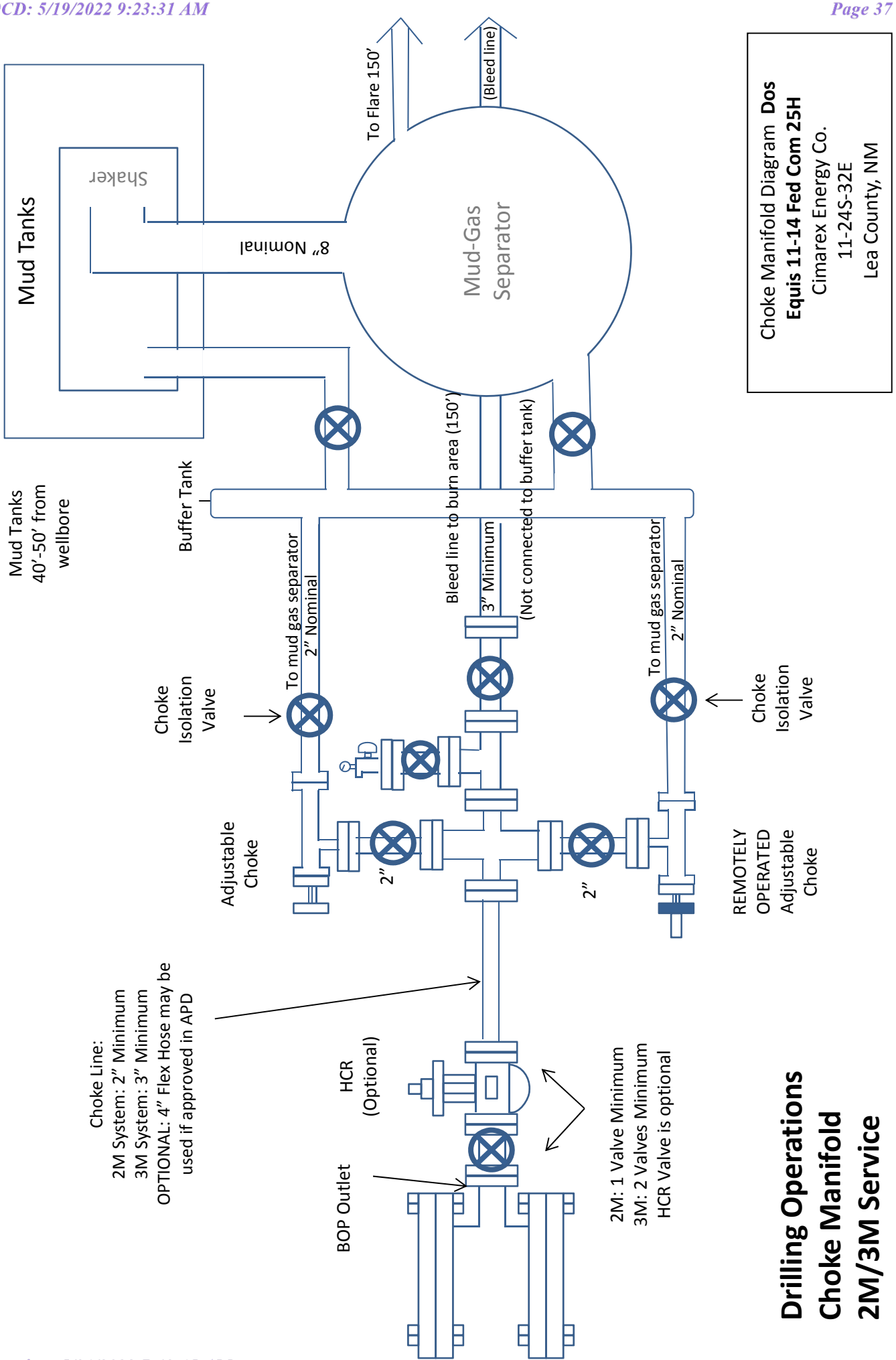
SRR & A

2000# BOP
Dos Equis 11-14 Fed Com 25H
Cimarex Energy Co.
11-24S-32E
Lea County, NM

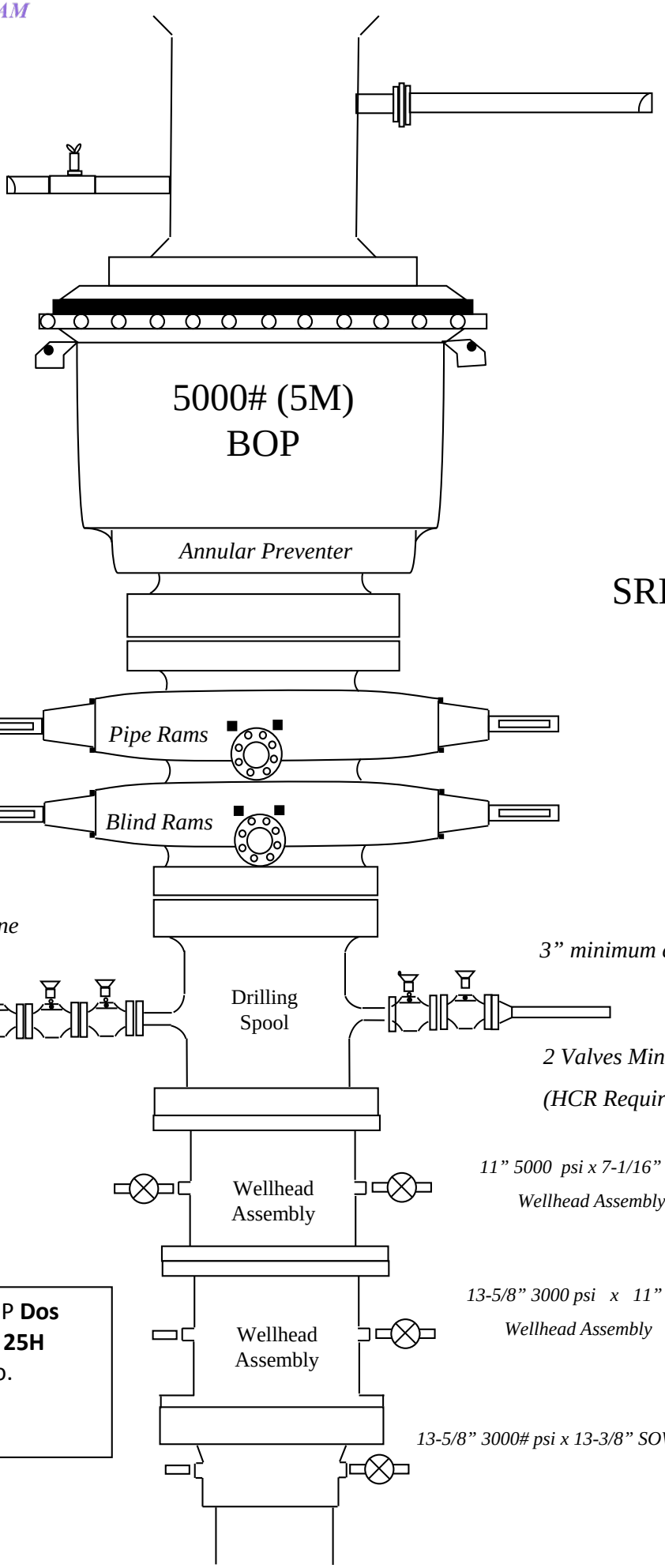
Drilling 8-3/4" hole below 9 5/8" Casing



3000# BOP
Dos Equis 11-14 Fed Com 25H
Cimarex Energy Co.
11-24S-32E
Lea County, NM

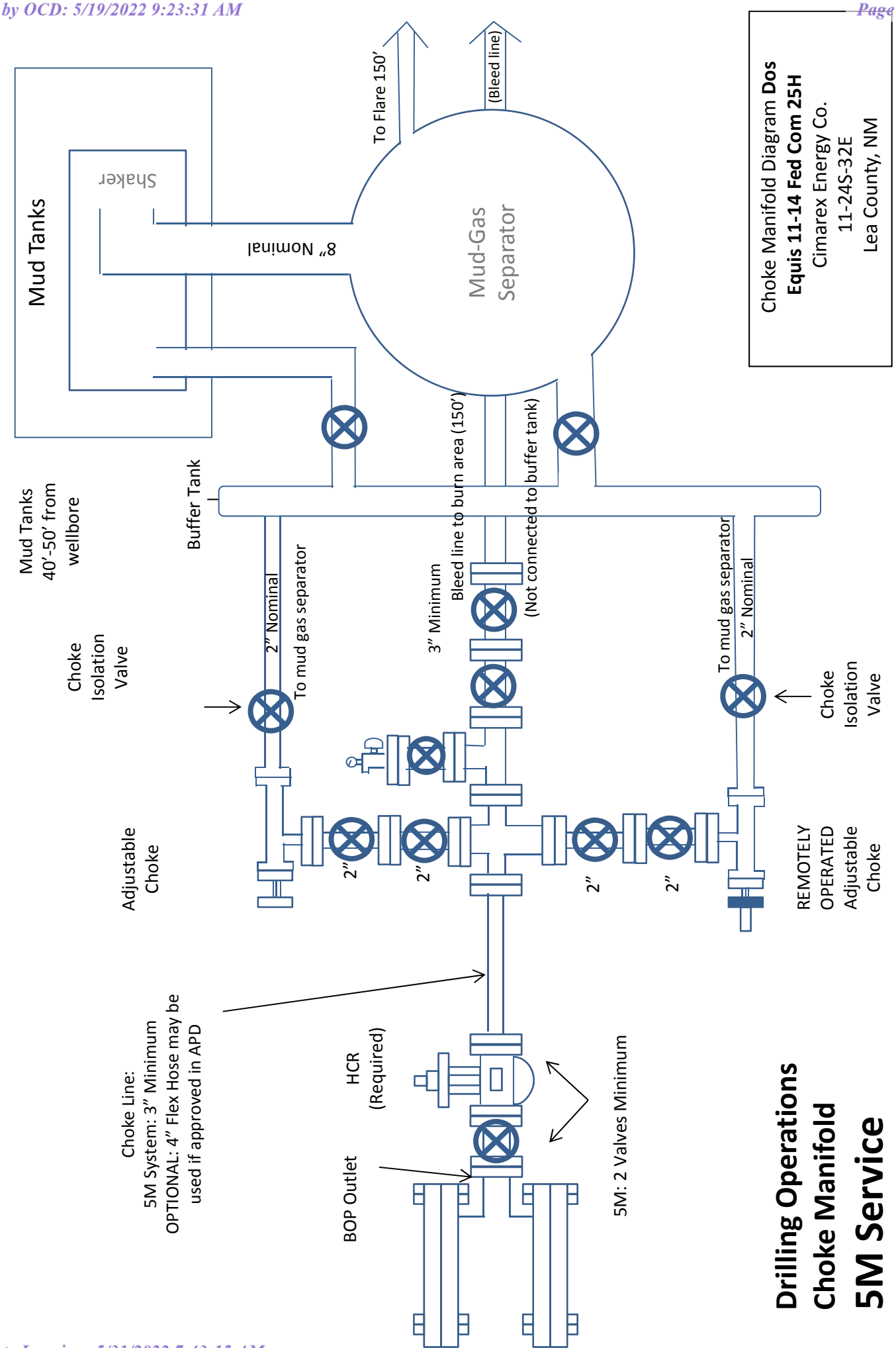

Mud Tanks
Shaker
8" Nominal
Mud-Gas Separator
To Flare 150'
(Bleed line)
Mud Tanks 40'-50' from wellbore
Buffer Tank
Bleed line to burn area (150')
3" Minimum
(Not connected to buffer tank)
To mud gas separator
2" Nominal
To mud gas separator
2" Nominal
Choke Isolation Valve
Choke Isolation Valve
Adjustable Choke
REMOTELY OPERATED Adjustable Choke
2"
2"
Choke Line:
2M System: 2" Minimum
3M System: 3" Minimum
OPTIONAL: 4" Flex Hose may be used if approved in APD
HCR (Optional)
BOP Outlet
2M: 1 Valve Minimum
3M: 2 Valves Minimum
HCR Valve is optional
Choke Manifold Diagram Dos Equis 11-14 Fed Com 25H
Cimarex Energy Co.
11-24S-32E
Lea County, NM
Drilling Operations
Choke Manifold
2M/3M Service

Drilling 6” hole
below 7” Casing



SRR & A

Exhibit E-1 – 5000# BOP **Dos Equis 11-14 Fed Com 25H**
Cimarex Energy Co.
11-24S-32E
Lea Co., NM


Choke Manifold Diagram Dos Equis 11-14 Fed Com 25H
Cimarex Energy Co.
11-24S-32E
Lea County, NM
Mud Tanks
Shaker
8" Nominal
Mud-Gas Separator
To Flare 150'
(Bleed line)
Mud Tanks 40'-50' from wellbore
Buffer Tank
Choke Isolation Valve
2" Nominal
To mud gas separator
3" Minimum
Bleed line to burn area (150')
(Not connected to buffer tank)
To mud gas separator
2" Nominal
Choke Isolation Valve
Adjustable Choke
2"
2"
2"
2"
REMOTELY OPERATED Adjustable Choke
Choke Line:
5M System: 3" Minimum
OPTIONAL: 4" Flex Hose may be used if approved in APD
HCR (Required)
BOP Outlet
5M: 2 Valves Minimum
Drilling Operations
Choke Manifold
5M Service

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

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

CONDITIONS

Action 108578

CONDITIONS

Operator: CIMAREX ENERGY CO. 600 N. Marienfeld Street Midland, TX 79701	OGRID: 215099
	Action Number: 108578
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
pkautz	None	5/31/2022