Form 3160-5
(June 2019)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

SUNDRY NOTICES AND REPORTS ON WELLS

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

SUBMIT IN TRIPLICATE *- Other instructions on page 2*

5. Lease Serial No. NMNM026394

6. If Indian, Allottee or Tribe Name

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

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

8. Well Name and No.

2. Name of Operator Cimarex Energy Company

9. API Well No. 30-025-50179

3a. Address 600 N. Marienfeld St., Suite 600, Midland, TX 79701

3b. Phone No. *(include area code)* 432-620-1936

10. Field and Pool or Exploratory Area

4. Location of Well *(Footage, Sec., T.,R.,M., or Survey Description)*

11. Country or Parish, State

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

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

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

14. I hereby certify that the foregoing is true and correct. Name *(Printed/Typed)*

Title

Signature

Date

THE SPACE FOR FEDERAL OR STATE OFICE USE

Approved by

Title

Date

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

Office

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

(Instructions on page 2)

GENERAL INSTRUCTIONS

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

SPECIFIC INSTRUCTIONS

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

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

NOTICES

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

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

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

Additional Information

Location of Well

0. SHL: SESE / 330 FSL / 290 FEL / TWSP: 25S / RANGE: 33E / SECTION: 20 / LAT: 32.109729 / LONG: -103.586706 (TVD: 0 feet, MD: 0 feet)

PPP: SENE / 100 FNL / 745 FEL / TWSP: 25S / RANGE: 33E / SECTION: 20 / LAT: 32.109732 / LONG: -103.588175 (TVD: 12140 feet, MD: 12200 feet)

BHL: NENE / 100 FNL / 745 FEL / TWSP: 25S / RANGE: 33E / SECTION: 17 / LAT: 32.137507 / LONG: -103.639172 (TVD: 12320 feet, MD: 22367 feet)

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- 50179	97903	WC-025 G-08 S253235G;LWR Bone Spring

[4] Property Code	[5] Property Name	[6] Well Number
	VACA DRAW 20-17 FEDERAL	74H

[7] OGRID No.	[8] Operator Name	[9] Elevation
215099	CIMAREX ENERGY CO.	3396.0'

[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
P	20	25S	33E		330	SOUTH	290	EAST	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
A	17	25S	33E		100	NORTH	440	EAST	LEA

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

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

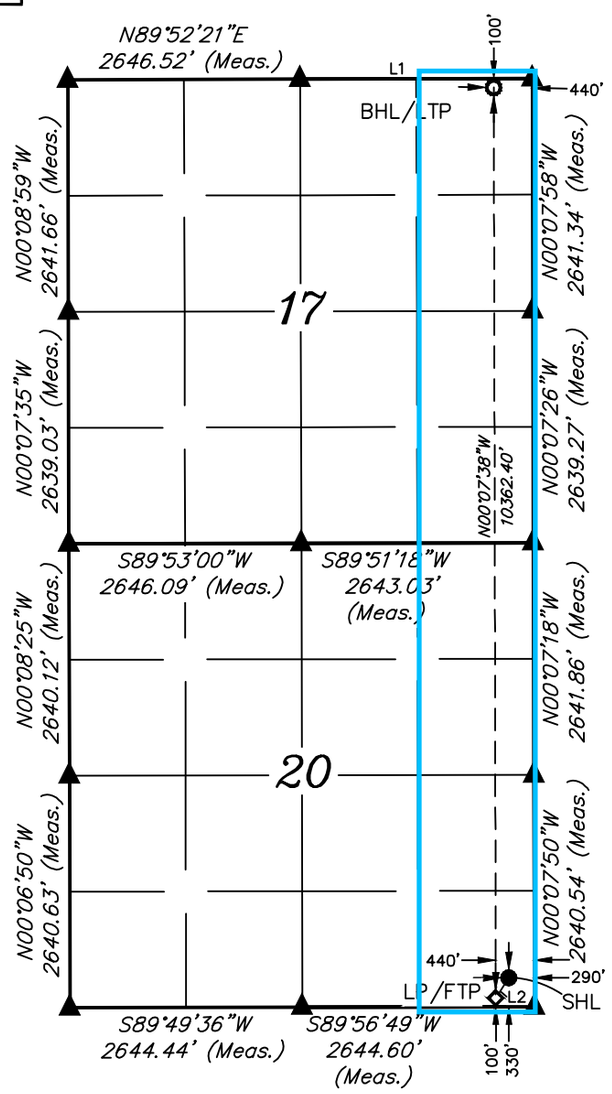
[16]

● = SURFACE HOLE LOCATION
◇ = LANDING POINT/FIRST TAKE POINT
○ = BOTTOM HOLE LOCATION/ LAST TAKE POINT
▲ = SECTION CORNER LOCATED

LINE TABLE		
LINE	DIRECTION	LENGTH
L1	N89°52'03"E	2643.50'
L2	S32°59'41"W	274.35'

2000' 1000' 0' 2000'

DRAWN BY: T.A. 08-08-19
REV: 1 05-04-22 C.D.L.
(WELL BORE CHANGE)



NAD 83 (SURFACE HOLE LOCATION)
LATITUDE = 32°06'35.03" (32.109729°)
LONGITUDE = 103°35'12.14" (103.586706°)
NAD 27 (SURFACE HOLE LOCATION)
LATITUDE = 32°06'34.58" (32.109605°)
LONGITUDE = 103°35'10.44" (103.586234°)
STATE PLANE NAD 83 (N.M. EAST)
N: 404456.58' E: 772509.85'
STATE PLANE NAD 27 (N.M. EAST)
N: 404398.81' E: 731323.66'

NAD 83 (LP/FTP)
LATITUDE = 32°06'32.75" (32.109098°)
LONGITUDE = 103°35'13.89" (103.587191°)
NAD 27 (LP/FTP)
LATITUDE = 32°06'32.30" (32.108973°)
LONGITUDE = 103°35'12.19" (103.586719°)
STATE PLANE NAD 83 (N.M. EAST)
N: 404225.89' E: 772361.44'
STATE PLANE NAD 27 (N.M. EAST)
N: 404168.12' E: 731175.24'

NAD 83 (BHL/LTP)
LATITUDE = 32°08'15.28" (32.137577°)
LONGITUDE = 103°35'13.82" (103.587173°)
NAD 27 (BHL/LTP)
LATITUDE = 32°08'14.83" (32.137453°)
LONGITUDE = 103°35'12.12" (103.586699°)
STATE PLANE NAD 83 (N.M. EAST)
N: 414586.30' E: 772295.17'
STATE PLANE NAD 27 (N.M. EAST)
N: 414528.27' E: 731109.46'

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"

[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.

Fatima Vasquez 05/18/2022
Signature Date

Fatima Vasquez
Printed Name

fatima.vasquez@coterra.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.

July 27, 2018
Date of Survey
Signature and Seal of Professional Surveyor:

PAUL BUCHELE NEW MEXICO 23782 PROFESSIONAL SURVEYOR 05-04-22

Certificate Number:

1. Geological Formations

TVD of target 11,040
MD at TD 21,154

Pilot Hole TD N/A
Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
Rustler	980	Useable Water	
Top of Salt	1340	N/A	
Base of Salt	4920	N/A	
Bell Canyon	4960	N/A	
Cherry Canyon	6030	N/A	
Brushy Canyon	7515	Hydrocarbons	
Bone Spring	9080	Hydrocarbons	
1st Bone Spring	10060	Hydrocarbons	
2nd Bone Spring	10270	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	1020	1020	13-3/8"	48.00	H-40	ST&C	1.67	3.92	6.58
12 1/4	0	4920	4920	9-5/8"	40.00	HCK-55	LT&C	1.45	1.50	2.85
8 3/4	0	10459	10459	7"	26.00	P-110	LT&C	1.27	2.03	2.42
8 3/4	10459	11209	10996	7"	26.00	P-110	BT&C	1.21	1.94	59.45
6	9459	21154	11040	4-1/2"	11.60	P-110	BT&C	1.47	2.07	20.01
					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.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	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	495	13.50	1.72	9.15	15.5	Lead: Class C + Bentonite
	133	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Intermediate	933	12.90	1.88	9.65	12	Lead: 35:65 (Poz:C) + Salt + Bentonite
	284	14.80	1.36	6.57	9.5	Tail: Class C + Retarder
Production	352	10.30	3.64	22.18		Lead: Tuned Light + LCM
	125	14.80	1.36	6.57	9.5	Tail: Class C + Retarder
Completion System	739	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	49
Production	4720	25
Completion System	11009	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	100% of working pressure
			Blind Ram		
			Pipe Ram		2M
			Double Ram	X	
			Other		
8 3/4	13 5/8	3M	Annular	X	100% of working pressure
			Blind Ram		
			Pipe Ram		3M
			Double Ram	X	
			Other		
6	13 5/8	5M	Annular	X	100% of working pressure
			Blind Ram		
			Pipe Ram		5M
			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.	
	Y	Are anchors required by manufacturer?

5. Mud Program

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0' to 1020'	Fresh Water	7.83 - 8.33	28	N/C
1020' to 4920'	Brine Water	9.80 - 10.30	30-32	N/C
4920' to 11209'	Cut Brine or OBM	8.50 - 9.00	27-70	N/C
11209' to 21154'	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.
X	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	5166 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 at least 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.

10. Other Variances

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 74H 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 74H 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 74H 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 COTERRA

Cimarex Vaca Draw 20-17 Federal 74H Rev1 kFc 09May22 Proposal
Geodetic Report
(Def Plan)

Report Date:	May 10, 2022 - 11:34 AM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	Cimarex Energy	**Vertical Section Azimuth:**	359.630 ° (Grid North)
Field:	NM Lea County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Cimarex Vaca Draw 20-17 Federal 74H / 74H	**TVD Reference Datum:**	RKB = 22ft
Well:	Vaca Draw 20-17 Federal 74H	**TVD Reference Elevation:**	3418.000 ft above MSL
Borehole:	Vaca Draw 20-17 Federal 74H	**Seabed / Ground Elevation:**	3396.000 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	6.321 °
Survey Name:	Cimarex Vaca Draw 20-17 Federal 74H Rev1 kFc 09May22	**Total Gravity Field Strength:**	998.4335mgn (9.80665 Based)
Survey Date:	September 12, 2019	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	103.957 ° / 10692.863 ft / 6.328 / 0.969	**Total Magnetic Field Strength:**	47476.043 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.680 °
Location Lat / Long:	N 32° 6' 35.02589", W 103° 35' 12.14182"	**Declination Date:**	May 09, 2022
Location Grid N/E Y/X:	N 404456.580 ftUS, E 772509.850 ftUS	**Magnetic Declination Model:**	HDGM 2022
CRS Grid Convergence Angle:	0.3969 °	**North Reference:**	Grid North
Grid Scale Factor:	0.9999703	**Grid Convergence Used:**	0.3969 °
Version / Patch:	2.10.829.1	**Total Corr Mag North->Grid North:**	5.9242 °
		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 [330' FSL, 290' FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	404456.58	772509.85	N 32.109729	W 103.586706
	100.00	0.00	224.88	100.00	0.00	0.00	0.00	0.00	404456.58	772509.85	N 32.109729	W 103.586706
	200.00	0.00	224.88	200.00	0.00	0.00	0.00	0.00	404456.58	772509.85	N 32.109729	W 103.586706
	300.00	0.00	224.88	300.00	0.00	0.00	0.00	0.00	404456.58	772509.85	N 32.109729	W 103.586706
	400.00	0.00	224.88	400.00	0.00	0.00	0.00	0.00	404456.58	772509.85	N 32.109729	W 103.586706
	500.00	0.00	224.88	500.00	0.00	0.00	0.00	0.00	404456.58	772509.85	N 32.109729	W 103.586706
	600.00	0.00	224.88	600.00	0.00	0.00	0.00	0.00	404456.58	772509.85	N 32.109729	W 103.586706
	700.00	0.00	224.88	700.00	0.00	0.00	0.00	0.00	404456.58	772509.85	N 32.109729	W 103.586706
	800.00	0.00	224.88	800.00	0.00	0.00	0.00	0.00	404456.58	772509.85	N 32.109729	W 103.586706
	900.00	0.00	224.88	900.00	0.00	0.00	0.00	0.00	404456.58	772509.85	N 32.109729	W 103.586706
Rustler	*931.00*	*0.00*	*224.88*	*931.00*	*0.00*	*0.00*	*0.00*	*0.00*	*404456.58*	*772509.85*	*N 32.109729*	*W 103.586706*
	1000.00	0.00	224.88	1000.00	0.00	0.00	0.00	0.00	404456.58	772509.85	N 32.109729	W 103.586706
	1100.00	0.00	224.88	1100.00	0.00	0.00	0.00	0.00	404456.58	772509.85	N 32.109729	W 103.586706
	1200.00	0.00	224.88	1200.00	0.00	0.00	0.00	0.00	404456.58	772509.85	N 32.109729	W 103.586706
Top of Salt	*1294.00*	*0.00*	*224.88*	*1294.00*	*0.00*	*0.00*	*0.00*	*0.00*	*404456.58*	*772509.85*	*N 32.109729*	*W 103.586706*
	1300.00	0.00	224.88	1300.00	0.00	0.00	0.00	0.00	404456.58	772509.85	N 32.109729	W 103.586706
Nudge, Build 2°/100ft	1350.00	0.00	224.88	1350.00	0.00	0.00	0.00	0.00	404456.58	772509.85	N 32.109729	W 103.586706
	1400.00	1.00	224.88	1400.00	-0.31	-0.31	-0.31	2.00	404456.27	772509.54	N 32.109729	W 103.586707
	1500.00	3.00	224.88	1499.93	-2.76	-2.78	-2.77	2.00	404453.80	772507.08	N 32.109722	W 103.586715
	1600.00	5.00	224.88	1599.68	-7.67	-7.72	-7.69	2.00	404448.86	772502.16	N 32.109708	W 103.586731
Hold	1650.00	6.00	224.88	1649.45	-11.05	-11.12	-11.07	2.00	404445.46	772498.78	N 32.109699	W 103.586742
	1700.00	6.00	224.88	1699.18	-14.73	-14.82	-14.76	0.00	404441.76	772495.09	N 32.109689	W 103.586754
	1800.00	6.00	224.88	1798.63	-22.09	-22.23	-22.14	0.00	404434.35	772487.71	N 32.109669	W 103.586778
	1900.00	6.00	224.88	1898.08	-29.44	-29.63	-29.52	0.00	404426.95	772480.34	N 32.109649	W 103.586802
	2000.00	6.00	224.88	1997.53	-36.80	-37.04	-36.89	0.00	404419.54	772472.96	N 32.109628	W 103.586826
	2100.00	6.00	224.88	2096.99	-44.16	-44.45	-44.27	0.00	404412.13	772465.58	N 32.109608	W 103.586850

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 °)
	2200.00	6.00	224.88	2196.44	-51.52	-51.85	-51.64	0.00	404404.73	772458.21	N 32.109588	W 103.586874
	2300.00	6.00	224.88	2295.89	-58.88	-59.26	-59.02	0.00	404397.32	772450.83	N 32.109568	W 103.586898
	2400.00	6.00	224.88	2395.34	-66.23	-66.66	-66.40	0.00	404389.92	772443.46	N 32.109547	W 103.586922
	2500.00	6.00	224.88	2494.80	-73.59	-74.07	-73.77	0.00	404382.51	772436.08	N 32.109527	W 103.586946
	2600.00	6.00	224.88	2594.25	-80.95	-81.48	-81.15	0.00	404375.11	772428.70	N 32.109507	W 103.586970
	2700.00	6.00	224.88	2693.70	-88.31	-88.88	-88.53	0.00	404367.70	772421.33	N 32.109487	W 103.586994
	2800.00	6.00	224.88	2793.15	-95.67	-96.29	-95.90	0.00	404360.29	772413.95	N 32.109467	W 103.587018
	2900.00	6.00	224.88	2892.60	-103.03	-103.70	-103.28	0.00	404352.89	772406.57	N 32.109446	W 103.587042
	3000.00	6.00	224.88	2992.06	-110.38	-111.10	-110.65	0.00	404345.48	772399.20	N 32.109426	W 103.587066
	3100.00	6.00	224.88	3091.51	-117.74	-118.51	-118.03	0.00	404338.08	772391.82	N 32.109406	W 103.587090
	3200.00	6.00	224.88	3190.96	-125.10	-125.91	-125.41	0.00	404330.67	772384.45	N 32.109386	W 103.587114
	3300.00	6.00	224.88	3290.41	-132.46	-133.32	-132.78	0.00	404323.26	772377.07	N 32.109365	W 103.587138
	3400.00	6.00	224.88	3389.87	-139.82	-140.73	-140.16	0.00	404315.86	772369.69	N 32.109345	W 103.587162
	3500.00	6.00	224.88	3489.32	-147.18	-148.13	-147.54	0.00	404308.45	772362.32	N 32.109325	W 103.587186
	3600.00	6.00	224.88	3588.77	-154.53	-155.54	-154.91	0.00	404301.05	772354.94	N 32.109305	W 103.587210
	3700.00	6.00	224.88	3688.22	-161.89	-162.94	-162.29	0.00	404293.64	772347.57	N 32.109285	W 103.587234
	3800.00	6.00	224.88	3787.67	-169.25	-170.35	-169.67	0.00	404286.24	772340.19	N 32.109264	W 103.587258
	3900.00	6.00	224.88	3887.13	-176.61	-177.76	-177.04	0.00	404278.83	772332.81	N 32.109244	W 103.587282
	4000.00	6.00	224.88	3986.58	-183.97	-185.16	-184.42	0.00	404271.42	772325.44	N 32.109224	W 103.587306
	4100.00	6.00	224.88	4086.03	-191.33	-192.57	-191.79	0.00	404264.02	772318.06	N 32.109204	W 103.587330
	4200.00	6.00	224.88	4185.48	-198.68	-199.97	-199.17	0.00	404256.61	772310.69	N 32.109184	W 103.587354
	4300.00	6.00	224.88	4284.94	-206.04	-207.38	-206.55	0.00	404249.21	772303.31	N 32.109163	W 103.587378
	4400.00	6.00	224.88	4384.39	-213.40	-214.79	-213.92	0.00	404241.80	772295.93	N 32.109143	W 103.587402
Drop 2°/100ft	4473.92	6.00	224.88	4457.90	-218.84	-220.26	-219.38	0.00	404236.33	772290.48	N 32.109128	W 103.587419
	4500.00	5.48	224.88	4483.85	-220.68	-222.11	-221.22	2.00	404234.48	772288.64	N 32.109123	W 103.587425
	4600.00	3.48	224.88	4583.54	-226.17	-227.64	-226.73	2.00	404228.95	772283.13	N 32.109108	W 103.587443
	4700.00	1.48	224.88	4683.44	-229.22	-230.70	-229.78	2.00	404225.88	772280.08	N 32.109100	W 103.587453
Base of Salt	*4726.56*	*0.95*	*224.88*	*4710.00*	*-229.61*	*-231.10*	*-230.17*	*2.00*	*404225.48*	*772279.68*	*N 32.109099*	*W 103.587455*
Hold	4773.92	0.00	224.88	4757.35	-229.89	-231.38	-230.45	2.00	404225.21	772279.41	N 32.109098	W 103.587455
	4800.00	0.00	224.88	4783.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	4900.00	0.00	224.88	4883.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
Lamar	*4921.57*	*0.00*	*224.88*	*4905.00*	*-229.89*	*-231.38*	*-230.45*	*0.00*	*404225.21*	*772279.41*	*N 32.109098*	*W 103.587455*
Bell Canyon	*4949.57*	*0.00*	*224.88*	*4933.00*	*-229.89*	*-231.38*	*-230.45*	*0.00*	*404225.21*	*772279.41*	*N 32.109098*	*W 103.587455*
	5000.00	0.00	224.88	4983.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	5100.00	0.00	224.88	5083.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	5200.00	0.00	224.88	5183.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	5300.00	0.00	224.88	5283.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	5400.00	0.00	224.88	5383.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	5500.00	0.00	224.88	5483.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	5600.00	0.00	224.88	5583.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	5700.00	0.00	224.88	5683.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	5800.00	0.00	224.88	5783.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	5900.00	0.00	224.88	5883.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	6000.00	0.00	224.88	5983.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
Cherry Canyon	*6002.57*	*0.00*	*224.88*	*5986.00*	*-229.89*	*-231.38*	*-230.45*	*0.00*	*404225.21*	*772279.41*	*N 32.109098*	*W 103.587455*
	6100.00	0.00	224.88	6083.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	6200.00	0.00	224.88	6183.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	6300.00	0.00	224.88	6283.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	6400.00	0.00	224.88	6383.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	6500.00	0.00	224.88	6483.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	6600.00	0.00	224.88	6583.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	6700.00	0.00	224.88	6683.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	6800.00	0.00	224.88	6783.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	6900.00	0.00	224.88	6883.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	7000.00	0.00	224.88	6983.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	7100.00	0.00	224.88	7083.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	7200.00	0.00	224.88	7183.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	7300.00	0.00	224.88	7283.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455

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 °)
	7400.00	0.00	224.88	7383.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	7500.00	0.00	224.88	7483.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
Brushy Canyon	*7548.57*	*0.00*	*224.88*	*7532.00*	*-229.89*	*-231.38*	*-230.45*	*0.00*	*404225.21*	*772279.41*	*N 32.109098*	*W 103.587455*
	7600.00	0.00	224.88	7583.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	7700.00	0.00	224.88	7683.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	7800.00	0.00	224.88	7783.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	7900.00	0.00	224.88	7883.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	8000.00	0.00	224.88	7983.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	8100.00	0.00	224.88	8083.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	8200.00	0.00	224.88	8183.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	8300.00	0.00	224.88	8283.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	8400.00	0.00	224.88	8383.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	8500.00	0.00	224.88	8483.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	8600.00	0.00	224.88	8583.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	8700.00	0.00	224.88	8683.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	8800.00	0.00	224.88	8783.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	8900.00	0.00	224.88	8883.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	9000.00	0.00	224.88	8983.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
Bone Spring Lime	*9044.57*	*0.00*	*224.88*	*9028.00*	*-229.89*	*-231.38*	*-230.45*	*0.00*	*404225.21*	*772279.41*	*N 32.109098*	*W 103.587455*
Leonard Shale	*9099.57*	*0.00*	*224.88*	*9083.00*	*-229.89*	*-231.38*	*-230.45*	*0.00*	*404225.21*	*772279.41*	*N 32.109098*	*W 103.587455*
	9100.00	0.00	224.88	9083.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	9200.00	0.00	224.88	9183.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	9300.00	0.00	224.88	9283.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
Avalon Shale	*9324.57*	*0.00*	*224.88*	*9308.00*	*-229.89*	*-231.38*	*-230.45*	*0.00*	*404225.21*	*772279.41*	*N 32.109098*	*W 103.587455*
	9400.00	0.00	224.88	9383.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	9500.00	0.00	224.88	9483.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	9600.00	0.00	224.88	9583.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	9700.00	0.00	224.88	9683.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	9800.00	0.00	224.88	9783.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	9900.00	0.00	224.88	9883.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	10000.00	0.00	224.88	9983.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
1st Bone Spring Sand	*10023.57*	*0.00*	*224.88*	*10007.00*	*-229.89*	*-231.38*	*-230.45*	*0.00*	*404225.21*	*772279.41*	*N 32.109098*	*W 103.587455*
	10100.00	0.00	224.88	10083.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	10200.00	0.00	224.88	10183.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
2nd Bone Spring Carb	*10235.57*	*0.00*	*224.88*	*10219.00*	*-229.89*	*-231.38*	*-230.45*	*0.00*	*404225.21*	*772279.41*	*N 32.109098*	*W 103.587455*
	10300.00	0.00	224.88	10283.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	10400.00	0.00	224.88	10383.43	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
KOP, Build 10°/100ft	10458.92	0.00	224.88	10442.35	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
	10500.00	4.11	7.63	10483.40	-228.43	-229.92	-230.25	10.00	404226.67	772279.60	N 32.109102	W 103.587455
2nd Bone Spring Sand	*10596.90*	*13.80*	*7.63*	*10579.00*	*-213.51*	*-214.99*	*-228.25*	*10.00*	*404241.59*	*772281.60*	*N 32.109143*	*W 103.587448*
	10600.00	14.11	7.63	10582.01	-212.77	-214.25	-228.15	10.00	404242.34	772281.70	N 32.109145	W 103.587448
	10700.00	24.11	7.63	10676.38	-180.40	-181.85	-223.81	10.00	404274.74	772286.05	N 32.109234	W 103.587433
	10800.00	34.11	7.63	10763.64	-132.29	-133.69	-217.36	10.00	404322.89	772292.50	N 32.109366	W 103.587411
	10900.00	44.11	7.63	10841.14	-69.90	-71.25	-208.99	10.00	404385.33	772300.87	N 32.109538	W 103.587383
	11000.00	54.11	7.63	10906.52	4.86	3.58	-198.96	10.00	404460.16	772310.90	N 32.109743	W 103.587348
	11100.00	64.11	7.63	10957.80	89.73	88.52	-187.57	10.00	404545.10	772322.28	N 32.109976	W 103.587310
	11200.00	74.11	7.63	10993.41	182.13	181.00	-175.18	10.00	404637.58	772334.68	N 32.110230	W 103.587268
Build & Turn 5°/100ft	11208.92	75.00	7.63	10995.78	190.64	189.52	-174.04	10.00	404646.10	772335.82	N 32.110254	W 103.587264
	11300.00	79.01	5.42	11016.26	278.73	277.68	-163.96	5.00	404734.25	772345.89	N 32.110496	W 103.587229
	11400.00	83.43	3.06	11031.52	377.21	376.20	-156.67	5.00	404832.77	772353.19	N 32.110766	W 103.587204
	11500.00	87.87	0.74	11039.10	476.81	475.83	-153.37	5.00	404932.39	772356.49	N 32.111040	W 103.587191
Landing Point	11548.05	90.00	359.63	11040.00	524.84	523.87	-153.21	5.00	404980.43	772356.65	N 32.111172	W 103.587189

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 °)
	11600.00	90.00	359.63	11040.00	576.80	575.82	-153.54	0.00	405032.38	772356.31	N 32.111315	W 103.587189
	11700.00	90.00	359.63	11040.00	676.80	675.81	-154.18	0.00	405132.37	772355.68	N 32.111590	W 103.587189
	11800.00	90.00	359.63	11040.00	776.80	775.81	-154.82	0.00	405232.37	772355.04	N 32.111865	W 103.587189
	11900.00	90.00	359.63	11040.00	876.80	875.81	-155.46	0.00	405332.36	772354.40	N 32.112140	W 103.587189
	12000.00	90.00	359.63	11040.00	976.80	975.81	-156.10	0.00	405432.36	772353.76	N 32.112415	W 103.587188
	12100.00	90.00	359.63	11040.00	1076.80	1075.81	-156.73	0.00	405532.35	772353.12	N 32.112689	W 103.587188
	12200.00	90.00	359.63	11040.00	1176.80	1175.80	-157.37	0.00	405632.35	772352.48	N 32.112964	W 103.587188
	12300.00	90.00	359.63	11040.00	1276.80	1275.80	-158.01	0.00	405732.34	772351.84	N 32.113239	W 103.587188
	12400.00	90.00	359.63	11040.00	1376.80	1375.80	-158.65	0.00	405832.34	772351.20	N 32.113514	W 103.587188
	12500.00	90.00	359.63	11040.00	1476.80	1475.80	-159.29	0.00	405932.33	772350.56	N 32.113789	W 103.587187
	12600.00	90.00	359.63	11040.00	1576.80	1575.80	-159.93	0.00	406032.33	772349.93	N 32.114064	W 103.587187
	12700.00	90.00	359.63	11040.00	1676.80	1675.79	-160.57	0.00	406132.32	772349.29	N 32.114339	W 103.587187
	12800.00	90.00	359.63	11040.00	1776.80	1775.79	-161.21	0.00	406232.32	772348.65	N 32.114613	W 103.587187
	12900.00	90.00	359.63	11040.00	1876.80	1875.79	-161.85	0.00	406332.31	772348.01	N 32.114888	W 103.587187
	13000.00	90.00	359.63	11040.00	1976.80	1975.79	-162.49	0.00	406432.30	772347.37	N 32.115163	W 103.587187
	13100.00	90.00	359.63	11040.00	2076.80	2075.79	-163.12	0.00	406532.30	772346.73	N 32.115438	W 103.587186
	13200.00	90.00	359.63	11040.00	2176.80	2175.78	-163.76	0.00	406632.29	772346.09	N 32.115713	W 103.587186
	13300.00	90.00	359.63	11040.00	2276.80	2275.78	-164.40	0.00	406732.29	772345.45	N 32.115988	W 103.587186
	13400.00	90.00	359.63	11040.00	2376.80	2375.78	-165.04	0.00	406832.28	772344.81	N 32.116263	W 103.587186
	13500.00	90.00	359.63	11040.00	2476.80	2475.78	-165.68	0.00	406932.28	772344.18	N 32.116538	W 103.587186
	13600.00	90.00	359.63	11040.00	2576.80	2575.78	-166.32	0.00	407032.27	772343.54	N 32.116812	W 103.587186
	13700.00	90.00	359.63	11040.00	2676.80	2675.77	-166.96	0.00	407132.27	772342.90	N 32.117087	W 103.587185
	13800.00	90.00	359.63	11040.00	2776.80	2775.77	-167.60	0.00	407232.26	772342.26	N 32.117362	W 103.587185
	13900.00	90.00	359.63	11040.00	2876.80	2875.77	-168.24	0.00	407332.26	772341.62	N 32.117637	W 103.587185
	14000.00	90.00	359.63	11040.00	2976.80	2975.77	-168.87	0.00	407432.25	772340.98	N 32.117912	W 103.587185
	14100.00	90.00	359.63	11040.00	3076.80	3075.76	-169.51	0.00	407532.25	772340.34	N 32.118187	W 103.587185
	14200.00	90.00	359.63	11040.00	3176.80	3175.76	-170.15	0.00	407632.24	772339.70	N 32.118462	W 103.587185
	14300.00	90.00	359.63	11040.00	3276.80	3275.76	-170.79	0.00	407732.24	772339.06	N 32.118737	W 103.587184
	14400.00	90.00	359.63	11040.00	3376.80	3375.76	-171.43	0.00	407832.23	772338.43	N 32.119011	W 103.587184
	14500.00	90.00	359.63	11040.00	3476.80	3475.76	-172.07	0.00	407932.23	772337.79	N 32.119286	W 103.587184
	14600.00	90.00	359.63	11040.00	3576.80	3575.75	-172.71	0.00	408032.22	772337.15	N 32.119561	W 103.587184
	14700.00	90.00	359.63	11040.00	3676.80	3675.75	-173.35	0.00	408132.22	772336.51	N 32.119836	W 103.587184
	14800.00	90.00	359.63	11040.00	3776.80	3775.75	-173.99	0.00	408232.21	772335.87	N 32.120111	W 103.587184
	14900.00	90.00	359.63	11040.00	3876.80	3875.75	-174.63	0.00	408332.21	772335.23	N 32.120386	W 103.587183
	15000.00	90.00	359.63	11040.00	3976.80	3975.75	-175.26	0.00	408432.20	772334.59	N 32.120661	W 103.587183
	15100.00	90.00	359.63	11040.00	4076.80	4075.74	-175.90	0.00	408532.20	772333.95	N 32.120935	W 103.587183
	15200.00	90.00	359.63	11040.00	4176.80	4175.74	-176.54	0.00	408632.19	772333.31	N 32.121210	W 103.587183
	15300.00	90.00	359.63	11040.00	4276.80	4275.74	-177.18	0.00	408732.18	772332.67	N 32.121485	W 103.587183
	15400.00	90.00	359.63	11040.00	4376.80	4375.74	-177.82	0.00	408832.18	772332.04	N 32.121760	W 103.587182
	15500.00	90.00	359.63	11040.00	4476.80	4475.74	-178.46	0.00	408932.17	772331.40	N 32.122035	W 103.587182
	15600.00	90.00	359.63	11040.00	4576.80	4575.73	-179.10	0.00	409032.17	772330.76	N 32.122310	W 103.587182
	15700.00	90.00	359.63	11040.00	4676.80	4675.73	-179.74	0.00	409132.16	772330.12	N 32.122585	W 103.587182
	15800.00	90.00	359.63	11040.00	4776.80	4775.73	-180.38	0.00	409232.16	772329.48	N 32.122860	W 103.587182
	15900.00	90.00	359.63	11040.00	4876.80	4875.73	-181.01	0.00	409332.15	772328.84	N 32.123134	W 103.587182
Section 17-20 Line Cross	*15974.85*	*90.00*	*359.63*	*11040.00*	*4951.65*	*4950.58*	*-181.49*	*0.00*	*409407.00*	*772328.36*	*N 32.123340*	*W 103.587181*
	16000.00	90.00	359.63	11040.00	4976.80	4975.73	-181.65	0.00	409432.15	772328.20	N 32.123409	W 103.587181
	16100.00	90.00	359.63	11040.00	5076.80	5075.72	-182.29	0.00	409532.14	772327.56	N 32.123684	W 103.587181
	16200.00	90.00	359.63	11040.00	5176.80	5175.72	-182.93	0.00	409632.14	772326.92	N 32.123959	W 103.587181
	16300.00	90.00	359.63	11040.00	5276.80	5275.72	-183.57	0.00	409732.13	772326.29	N 32.124234	W 103.587181
	16400.00	90.00	359.63	11040.00	5376.80	5375.72	-184.21	0.00	409832.13	772325.65	N 32.124509	W 103.587181
	16500.00	90.00	359.63	11040.00	5476.80	5475.72	-184.85	0.00	409932.12	772325.01	N 32.124784	W 103.587181
	16600.00	90.00	359.63	11040.00	5576.80	5575.71	-185.49	0.00	410032.12	772324.37	N 32.125059	W 103.587180
	16700.00	90.00	359.63	11040.00	5676.80	5675.71	-186.13	0.00	410132.11	772323.73	N 32.125333	W 103.587180
	16800.00	90.00	359.63	11040.00	5776.80	5775.71	-186.76	0.00	410232.11	772323.09	N 32.125608	W 103.587180
	16900.00	90.00	359.63	11040.00	5876.80	5875.71	-187.40	0.00	410332.10	772322.45	N 32.125883	W 103.587180
	17000.00	90.00	359.63	11040.00	5976.80	5975.71	-188.04	0.00	410432.10	772321.81	N 32.126158	W 103.587180
	17100.00	90.00	359.63	11040.00	6076.80	6075.70	-188.68	0.00	410532.09	772321.17	N 32.126433	W 103.587180

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 °)
	17200.00	90.00	359.63	11040.00	6176.80	6175.70	-189.32	0.00	410632.09	772320.54	N 32.126708	W 103.587179
	17300.00	90.00	359.63	11040.00	6276.80	6275.70	-189.96	0.00	410732.08	772319.90	N 32.126983	W 103.587179
	17400.00	90.00	359.63	11040.00	6376.80	6375.70	-190.60	0.00	410832.08	772319.26	N 32.127257	W 103.587179
	17500.00	90.00	359.63	11040.00	6476.80	6475.70	-191.24	0.00	410932.07	772318.62	N 32.127532	W 103.587179
	17600.00	90.00	359.63	11040.00	6576.80	6575.69	-191.88	0.00	411032.07	772317.98	N 32.127807	W 103.587179
	17700.00	90.00	359.63	11040.00	6676.80	6675.69	-192.52	0.00	411132.06	772317.34	N 32.128082	W 103.587178
	17800.00	90.00	359.63	11040.00	6776.80	6775.69	-193.15	0.00	411232.05	772316.70	N 32.128357	W 103.587178
	17900.00	90.00	359.63	11040.00	6876.80	6875.69	-193.79	0.00	411332.05	772316.06	N 32.128632	W 103.587178
	18000.00	90.00	359.63	11040.00	6976.80	6975.69	-194.43	0.00	411432.04	772315.42	N 32.128907	W 103.587178
	18100.00	90.00	359.63	11040.00	7076.80	7075.68	-195.07	0.00	411532.04	772314.79	N 32.129182	W 103.587178
	18200.00	90.00	359.63	11040.00	7176.80	7175.68	-195.71	0.00	411632.03	772314.15	N 32.129456	W 103.587178
	18300.00	90.00	359.63	11040.00	7276.80	7275.68	-196.35	0.00	411732.03	772313.51	N 32.129731	W 103.587177
	18400.00	90.00	359.63	11040.00	7376.80	7375.68	-196.99	0.00	411832.02	772312.87	N 32.130006	W 103.587177
	18500.00	90.00	359.63	11040.00	7476.80	7475.68	-197.63	0.00	411932.02	772312.23	N 32.130281	W 103.587177
	18600.00	90.00	359.63	11040.00	7576.80	7575.67	-198.27	0.00	412032.01	772311.59	N 32.130556	W 103.587177
	18700.00	90.00	359.63	11040.00	7676.80	7675.67	-198.90	0.00	412132.01	772310.95	N 32.130831	W 103.587177
	18800.00	90.00	359.63	11040.00	7776.80	7775.67	-199.54	0.00	412232.00	772310.31	N 32.131106	W 103.587177
	18900.00	90.00	359.63	11040.00	7876.80	7875.67	-200.18	0.00	412332.00	772309.67	N 32.131381	W 103.587176
	19000.00	90.00	359.63	11040.00	7976.80	7975.66	-200.82	0.00	412431.99	772309.03	N 32.131655	W 103.587176
	19100.00	90.00	359.63	11040.00	8076.80	8075.66	-201.46	0.00	412531.99	772308.40	N 32.131930	W 103.587176
	19200.00	90.00	359.63	11040.00	8176.80	8175.66	-202.10	0.00	412631.98	772307.76	N 32.132205	W 103.587176
	19300.00	90.00	359.63	11040.00	8276.80	8275.66	-202.74	0.00	412731.98	772307.12	N 32.132480	W 103.587176
	19400.00	90.00	359.63	11040.00	8376.80	8375.66	-203.38	0.00	412831.97	772306.48	N 32.132755	W 103.587176
	19500.00	90.00	359.63	11040.00	8476.80	8475.65	-204.02	0.00	412931.97	772305.84	N 32.133030	W 103.587175
	19600.00	90.00	359.63	11040.00	8576.80	8575.65	-204.66	0.00	413031.96	772305.20	N 32.133305	W 103.587175
	19700.00	90.00	359.63	11040.00	8676.80	8675.65	-205.29	0.00	413131.96	772304.56	N 32.133579	W 103.587175
	19800.00	90.00	359.63	11040.00	8776.80	8775.65	-205.93	0.00	413231.95	772303.92	N 32.133854	W 103.587175
	19900.00	90.00	359.63	11040.00	8876.80	8875.65	-206.57	0.00	413331.95	772303.28	N 32.134129	W 103.587175
	20000.00	90.00	359.63	11040.00	8976.80	8975.64	-207.21	0.00	413431.94	772302.65	N 32.134404	W 103.587175
	20100.00	90.00	359.63	11040.00	9076.80	9075.64	-207.85	0.00	413531.93	772302.01	N 32.134679	W 103.587174
	20200.00	90.00	359.63	11040.00	9176.80	9175.64	-208.49	0.00	413631.93	772301.37	N 32.134954	W 103.587174
	20300.00	90.00	359.63	11040.00	9276.80	9275.64	-209.13	0.00	413731.92	772300.73	N 32.135229	W 103.587174
	20400.00	90.00	359.63	11040.00	9376.80	9375.64	-209.77	0.00	413831.92	772300.09	N 32.135504	W 103.587174
	20500.00	90.00	359.63	11040.00	9476.80	9475.63	-210.41	0.00	413931.91	772299.45	N 32.135778	W 103.587174
	20600.00	90.00	359.63	11040.00	9576.80	9575.63	-211.04	0.00	414031.91	772298.81	N 32.136053	W 103.587173
	20700.00	90.00	359.63	11040.00	9676.80	9675.63	-211.68	0.00	414131.90	772298.17	N 32.136328	W 103.587173
	20800.00	90.00	359.63	11040.00	9776.80	9775.63	-212.32	0.00	414231.90	772297.53	N 32.136603	W 103.587173
	20900.00	90.00	359.63	11040.00	9876.80	9875.63	-212.96	0.00	414331.89	772296.90	N 32.136878	W 103.587173
	21000.00	90.00	359.63	11040.00	9976.80	9975.62	-213.60	0.00	414431.89	772296.26	N 32.137153	W 103.587173
	21100.00	90.00	359.63	11040.00	10076.80	10075.62	-214.24	0.00	414531.88	772295.62	N 32.137428	W 103.587173
Cimarex Vaca Draw 20-17 Federal 74H - PBHL [100' FNL, 440' FEL]	21154.42	90.00	359.63	11040.00	10131.22	10130.04	-214.59	0.00	414586.30	772295.27	N 32.137577	W 103.587172

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

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 °)
		1	0.000	22.000	1/100.000	30.000	30.000		A001Mb_MWD-Depth Only		Vaca Draw 20-17 Federal 74H / Cimarex Vaca Draw 20-17	
		1	22.000	21154.420	1/100.000	30.000	30.000		A001Mb_MWD		Vaca Draw 20-17 Federal 74H / Cimarex Vaca Draw 20-17	

Schlumberger

Cimarex Energy

Rev 1

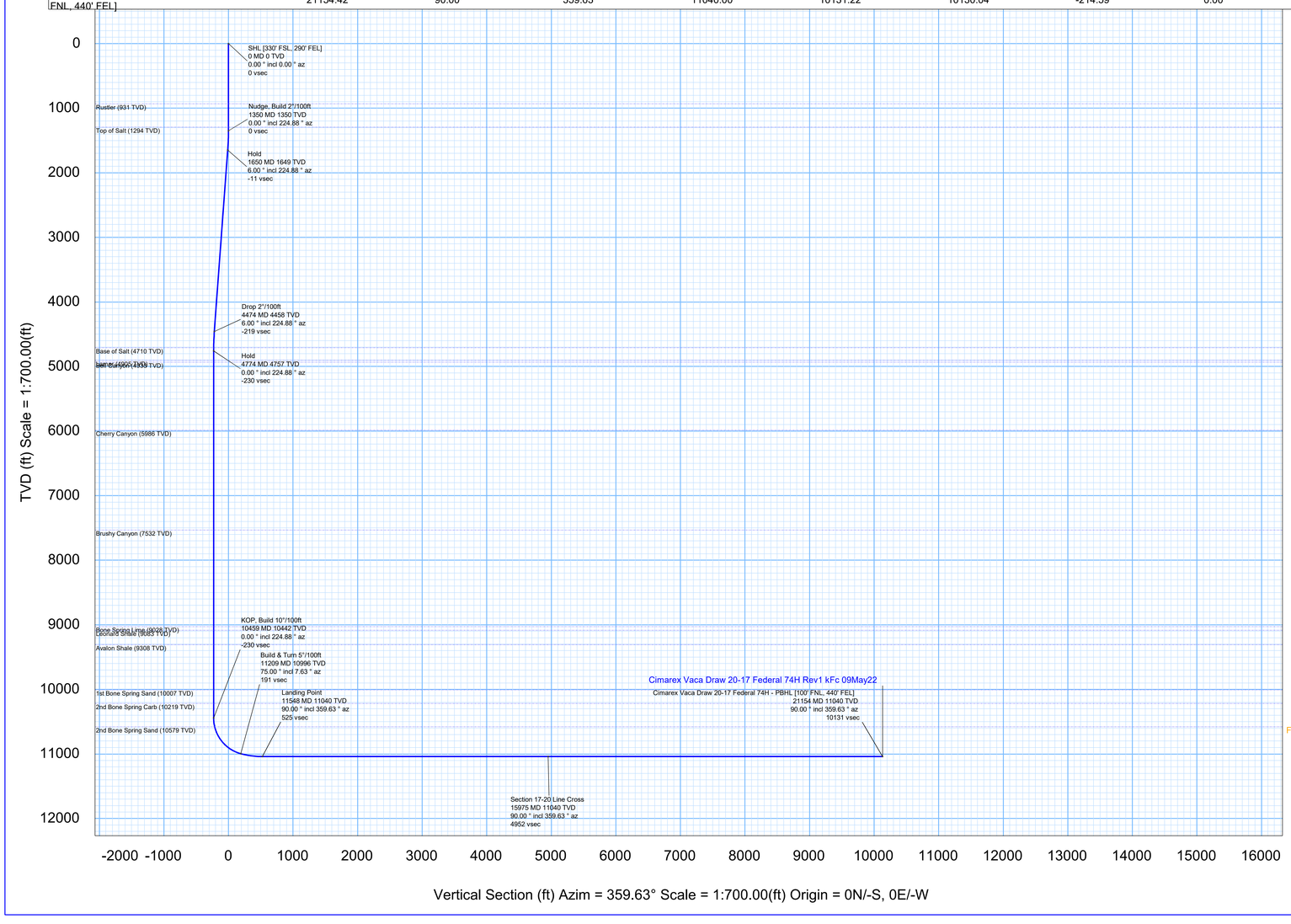
COTERRA

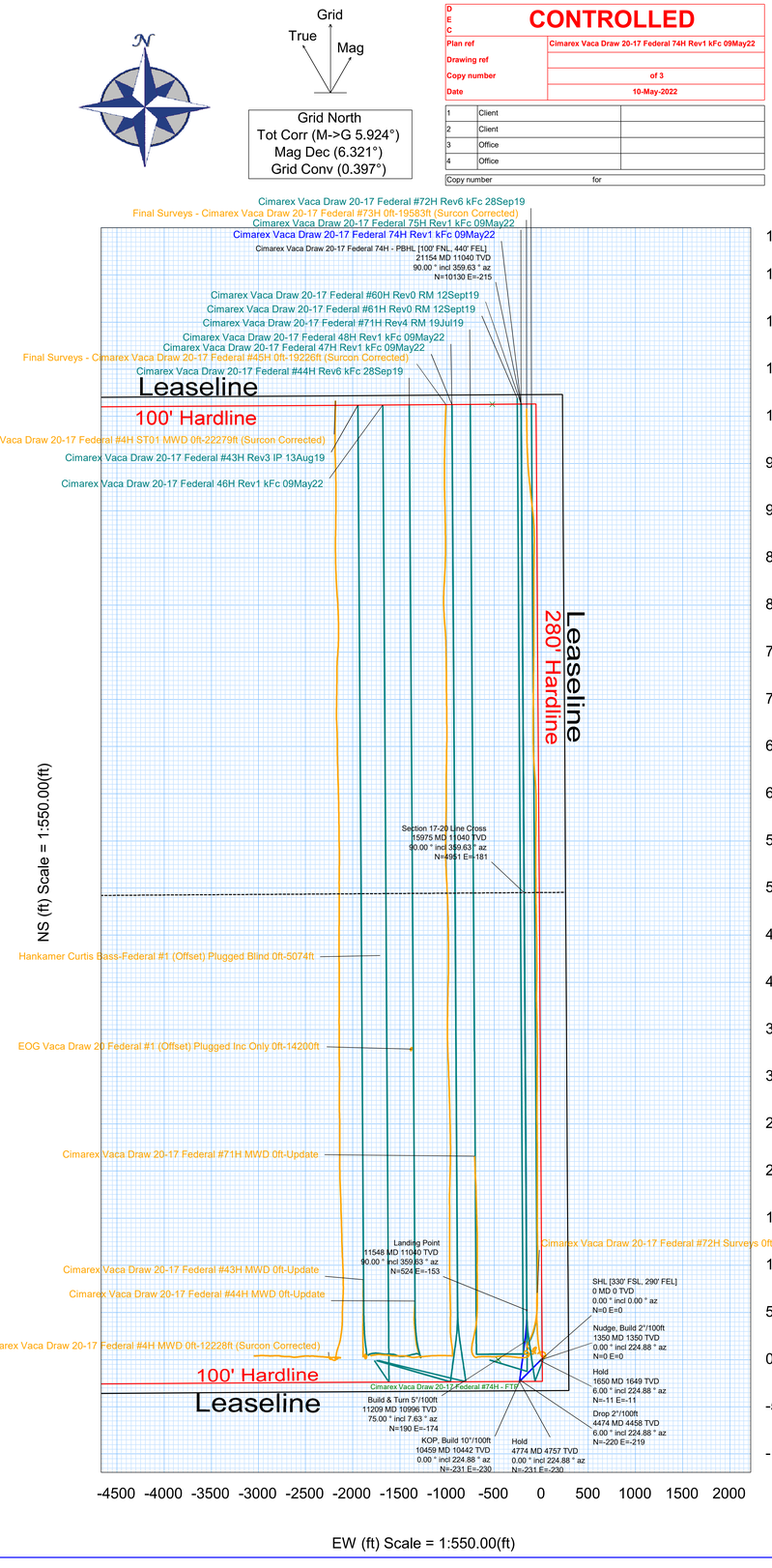
Borehole:	Well:	Field:	Structure:
Vaca Draw 20-17 Federal 74H	Vaca Draw 20-17 Federal 74H	NM Lea County (NAD 83)	Cimarex Vaca Draw 20-17 Federal 74H

Gravity & Magnetic Parameters						Surface Location		NAD83 New Mexico State Plane, Eastern Zone, US Feet				Miscellaneous			
Model:	HDGM 2022	Dip:	59.68°	Date:	09-May-2022	Lat:	N 32 6 35.03	Northing:	404456.58ftUS	Grid Conv:	0.3969°	Slot:	74H	TVD Ref:	RKB = 22ft (3418ft above MSL)
MagDec:	6.321°	FS:	47476.043nT	Gravity FS:	998.434mgn (9.80665 Based)	Lon:	W 103 35 12.14	Easting:	772509.85ftUS	Scale Fact:	0.9999703	Plan:	Cimarex Vaca Draw 20-17 Federal 74H Rev1 kFc 09May22		

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL [330' FSL, 290' FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rustler	931.00	0.00	224.88	931.00	0.00	0.00	0.00	0.00
Top of Salt	1294.00	0.00	224.88	1294.00	0.00	0.00	0.00	0.00
Nudge, Build 2°/100ft	1350.00	0.00	224.88	1350.00	0.00	0.00	0.00	0.00
Hold	1650.00	6.00	224.88	1649.45	-11.05	-11.12	-11.07	2.00
Drop 2°/100ft	4473.92	6.00	224.88	4457.90	-218.84	-220.26	-219.38	0.00
Base of Salt	4726.56	0.95	224.88	4710.00	-229.61	-231.10	-230.17	2.00
Hold	4773.92	0.00	224.88	4757.35	-229.89	-231.38	-230.45	2.00
Lamar	4921.57	0.00	224.88	4905.00	-229.89	-231.38	-230.45	0.00
Bell Canyon	4949.57	0.00	224.88	4933.00	-229.89	-231.38	-230.45	0.00
Cherry Canyon	6002.57	0.00	224.88	5986.00	-229.89	-231.38	-230.45	0.00
Brushy Canyon	7548.57	0.00	224.88	7532.00	-229.89	-231.38	-230.45	0.00
Bone Spring Lime	9044.57	0.00	224.88	9028.00	-229.89	-231.38	-230.45	0.00
Leonard Shale	9099.57	0.00	224.88	9083.00	-229.89	-231.38	-230.45	0.00
Avalon Shale	9324.57	0.00	224.88	9308.00	-229.89	-231.38	-230.45	0.00
1st Bone Spring Sand	10023.57	0.00	224.88	10007.00	-229.89	-231.38	-230.45	0.00
2nd Bone Spring Carb	10235.57	0.00	224.88	10219.00	-229.89	-231.38	-230.45	0.00
KOP, Build 10°/100ft	10458.92	0.00	224.88	10442.35	-229.89	-231.38	-230.45	0.00
2nd Bone Spring Sand	10596.90	13.80	7.63	10579.00	-213.51	-214.99	-228.25	10.00
Build & Turn 5°/100ft	11208.92	75.00	7.63	10995.78	190.64	189.52	-174.04	10.00
Landing Point	11548.05	90.00	359.63	11040.00	524.84	523.87	-153.21	5.00
Section 17-20 Line Cross	15974.85	90.00	359.63	11040.00	4951.65	4950.58	-181.49	0.00
Cimarex Vaca Draw 20-17 Federal 74H - PBHL [100' FNL, 440' FEL]	21154.42	90.00	359.63	11040.00	10131.22	10130.04	-214.59	0.00





Schlumberger COTERRA

Cimarex Vaca Draw 20-17 Federal 74H Rev1 kFc 09May22 Proposal
Geodetic Report
(Def Plan)

Report Date:	May 10, 2022 - 11:36 AM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	Cimarex Energy	**Vertical Section Azimuth:**	359.630 ° (Grid North)
Field:	NM Lea County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Cimarex Vaca Draw 20-17 Federal 74H / 74H	**TVD Reference Datum:**	RKB = 22ft
Well:	Vaca Draw 20-17 Federal 74H	**TVD Reference Elevation:**	3418.000 ft above MSL
Borehole:	Vaca Draw 20-17 Federal 74H	**Seabed / Ground Elevation:**	3396.000 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	6.321 °
Survey Name:	Cimarex Vaca Draw 20-17 Federal 74H Rev1 kFc 09May22	**Total Gravity Field Strength:**	998.4335mgn (9.80665 Based)
Survey Date:	September 12, 2019	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	103.957 ° / 10692.863 ft / 6.328 / 0.969	**Total Magnetic Field Strength:**	47476.043 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.680 °
Location Lat / Long:	N 32° 6' 35.02589", W 103° 35' 12.14182"	**Declination Date:**	May 09, 2022
Location Grid N/E Y/X:	N 404456.580 ftUS, E 772509.850 ftUS	**Magnetic Declination Model:**	HDGM 2022
CRS Grid Convergence Angle:	0.3969 °	**North Reference:**	Grid North
Grid Scale Factor:	0.9999703	**Grid Convergence Used:**	0.3969 °
Version / Patch:	2.10.829.1	**Total Corr Mag North->Grid North:**	5.9242 °
		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 [330' FSL, 290' FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	404456.58	772509.85	N 32.109729	W 103.586706
Nudge, Build 2°/100ft	1350.00	0.00	224.88	1350.00	0.00	0.00	0.00	0.00	404456.58	772509.85	N 32.109729	W 103.586706
Hold	1650.00	6.00	224.88	1649.45	-11.05	-11.12	-11.07	2.00	404445.46	772498.78	N 32.109699	W 103.586742
Drop 2°/100ft	4473.92	6.00	224.88	4457.90	-218.84	-220.26	-219.38	0.00	404236.33	772290.48	N 32.109128	W 103.587419
Hold	4773.92	0.00	224.88	4757.35	-229.89	-231.38	-230.45	2.00	404225.21	772279.41	N 32.109098	W 103.587455
KOP, Build 10°/100ft	10458.92	0.00	224.88	10442.35	-229.89	-231.38	-230.45	0.00	404225.21	772279.41	N 32.109098	W 103.587455
Build & Turn 5°/100ft	11208.92	75.00	7.63	10995.78	190.64	189.52	-174.04	10.00	404646.10	772335.82	N 32.110254	W 103.587264
Landing Point	11548.05	90.00	359.63	11040.00	524.84	523.87	-153.21	5.00	404980.43	772356.65	N 32.111172	W 103.587189
Cimarex Vaca Draw 20-17 Federal 74H - PBHL [100' FNL, 440' FEL]	21154.42	90.00	359.63	11040.00	10131.22	10130.04	-214.59	0.00	414586.30	772295.27	N 32.137577	W 103.587172

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	Vaca Draw 20-17 Federal 74H / Cimarex Vaca Draw 20-17
	1	22.000	21154.420	1/100.000	30.000	30.000		A001Mb_MWD	Vaca Draw 20-17 Federal 74H / Cimarex Vaca Draw 20-17

Schlumberger COTERRA

Cimarex Vaca Draw 20-17 Federal 74H Rev1 kFc 09May22 Anti-Collision Summary Report

Analysis Date-24hr Time:	May 10, 2022 - 11:36	**Analysis Method:**	3D Least Distance
Client:	Cimarex Energy	**Reference Trajectory:**	Cimarex Vaca Draw 20-17 Federal 74H Rev1 kFc 09May22 (Def Plan)
Field:	NM Lea County (NAD 83)	**Depth Interval:**	Every 10.00 Measured Depth (ft)
Structure:	Cimarex Vaca Draw 20-17 Federal 74H	**Rule Set:**	NAL Procedure: D&M AntiCollision Standard S002
Slot:	74H	**Min Pts:**	All local minima indicated.
Well:	Vaca Draw 20-17 Federal 74H	**Version / Patch:**	2.10.829.1
Borehole:	Vaca Draw 20-17 Federal 74H	**Database \ Project:**	Us1455vsm3172\drilling-NM Lea County 2.10
Scan MD Range:	0.00ft ~ 21154.42ft		

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: Not performed!
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		
Cimarex Vaca Draw 20-17 Federal #60H Rev0 RM 12Sept19 (Non-Def Plan)													Fail Major
	549.93	32.81	547.43	517.13	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	549.93	32.81	547.43	517.13	164259.22	MAS = 10.00 (m)	22.00	22.00				WRP	
	235.53	72.69	186.23	162.84	4.98	OSF1.50	6100.00	6083.43	OSF<5.00			Enter Alert	
	125.21	91.94	63.08	33.27	2.06	OSF1.50	8010.00	7993.43				MinPt-CtCt	
	125.52	92.87	62.77	32.66	2.04	OSF1.50	8100.00	8083.43				MINPT-O-EOU	
	125.79	93.18	62.82	32.61	2.04	OSF1.50	8130.00	8113.43				MinPt-O-ADP	
	126.39	93.70	63.08	32.69	2.04	OSF1.50	8180.00	8163.43				MinPt-O-SF	
	118.95	120.36	37.88	-1.41	1.48	OSF1.50	10600.00	10582.01		OSF<1.50		Enter Minor	
	82.13	122.58	-0.94	-40.44	0.99	OSF1.50	10770.00	10738.37			OSF<1.00	Enter Major	
	51.16	122.79	-31.53	-71.63	0.61	OSF1.50	11000.00	10906.52				MinPt-O-ADP	
	50.76	122.29	-31.60	-71.53	0.60	OSF1.50	11010.00	10912.31				MINPT-O-EOU	
	50.45	121.65	-31.48	-71.20	0.60	OSF1.50	11020.00	10917.96				MinPt-O-SF	
	50.03	118.92	-30.08	-68.89	0.61	OSF1.50	11050.00	10934.03				MinPt-CtCt	
	57.45	86.65	-1.15	-29.20	0.98	OSF1.50	11230.00	11001.08			OSF>1.00	Exit Major	
	48.17	72.69	-1.12	-24.51	0.98	OSF1.50	11400.00	11031.52			OSF<1.00	Enter Major	
	39.50	336.08	-185.39	-296.58	0.17	OSF1.50	21154.42	11040.00				MinPts	
Cimarex Vaca Draw 20-17 Federal 75H Rev1 kFc 09May22 (Def Plan)													Fail Minor
	20.00	16.50	17.50	3.50	N/A	MAS = 5.03 (m)	0.00	0.00	CtCt<=15m<15.00			Enter Alert	
	20.00	16.50	17.50	3.50	N/A	MAS = 5.03 (m)	22.00	22.00				WRP	
	20.00	20.07	5.79	-0.07	1.49	OSF1.50	1230.00	1230.00		OSF<1.50		Enter Minor	
	20.00	21.87	4.59	-1.87	1.35	OSF1.50	1350.00	1350.00				MinPt-CtCt	
	20.20	22.46	4.39	-2.26	1.33	OSF1.50	1390.00	1390.00				MINPT-O-EOU	
	20.31	22.61	4.41	-2.30	1.33	OSF1.50	1400.00	1400.00				MinPt-O-SF	
	20.45	22.75	4.45	-2.30	1.33	OSF1.50	1410.00	1410.00				MinPt-O-ADP	
	24.26	24.48	7.11	-0.21	1.49	OSF1.50	1530.00	1529.88		OSF>1.50		Exit Minor	
	162.43	149.43	61.98	13.01	1.63	OSF1.50	10010.00	9993.43				MinPt-CtCt	
	162.46	149.53	61.94	12.93	1.63	OSF1.50	10020.00	10003.43				MINPT-O-EOU	
	162.54	149.62	61.96	12.92	1.63	OSF1.50	10030.00	10013.43				MinPts	
	392.16	120.16	311.22	272.00	4.97	OSF1.50	10620.00	10601.32	OSF>5.00			Exit Alert	
	609.60	184.72	485.62	424.88	5.00	OSF1.50	15720.00	11040.00	OSF<5.00			Enter Alert	
	609.60	351.94	374.14	257.66	2.61	OSF1.50	21154.42	11040.00				MinPts	
Cimarex Vaca Draw 20-17 Federal #61H Rev0 RM 12Sept19 (Non-Def Plan)													Fail Minor
	573.07	32.81	570.57	540.26	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	573.07	32.81	570.57	540.26	111653.10	MAS = 10.00 (m)	22.00	22.00				WRP	
	295.83	54.34	258.77	241.49	8.49	OSF1.50	4400.00	4384.39				MinPt-CtCt	
	296.04	55.05	258.51	240.99	8.38	OSF1.50	4460.00	4444.06				MINPT-O-EOU	
	290.40	64.11	246.82	226.28	7.01	OSF1.50	5280.00	5263.43				MinPt-CtCt	
	291.10	66.22	246.12	224.88	6.79	OSF1.50	5470.00	5453.43				MINPT-O-EOU	
	291.52	66.77	246.17	224.75	6.75	OSF1.50	5520.00	5503.43				MinPt-O-ADP	
	293.39	89.84	232.67	203.56	5.00	OSF1.50	7710.00	7693.43	OSF<5.00			Enter Alert	
	293.51	121.03	211.93	172.48	3.69	OSF1.50	10350.00	10333.43				MINPT-O-EOU	
	293.74	121.28	211.93	172.46	3.68	OSF1.50	10360.00	10343.43				MinPts	
	245.58	90.47	179.31	155.11	4.70	OSF1.50	11570.00	11040.00				MinPt-CtCt	
	245.58	245.78	75.77	-0.20	1.50	OSF1.50	17660.00	11040.00		OSF<1.50		Enter Minor	
	245.58	356.04	2.27	-110.46	1.01	OSF1.50	21154.42	11040.00				MinPts	
Cimarex Vaca Draw 20-17 Federal #71H Rev4 RM 19Jul19 (Non-Def Plan)													Warning Alert
	99.98	32.81	98.18	67.18	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	99.98	32.81	98.18	67.18	N/A	MAS = 10.00 (m)	22.00	22.00				WRP	
	98.94	32.81	84.03	66.13	7.41	MAS = 10.00 (m)	1640.00	1639.50				MinPts	
	99.22	32.81	83.75	66.41	7.13	MAS = 10.00 (m)	1710.00	1709.12				MINPT-O-EOU	
	115.06	32.81	95.52	82.25	6.39	MAS = 10.00 (m)	2200.00	2196.44				MinPt-O-SF	
	290.19	76.53	238.57	213.66	5.79	OSF1.50	6310.00	6293.43				MinPt-CtCt	
	290.54	77.51	238.25	213.02	5.72	OSF1.50	6400.00	6383.43				MINPT-O-EOU	
	290.90	77.95	238.32	212.95	5.70	OSF1.50	6440.00	6423.43				MinPt-O-ADP	
	300.69	82.11	245.30	218.58	5.59	OSF1.50	6820.00	6803.43				MinPt-O-SF	
	539.99	111.12	465.31	428.88	7.39	OSF1.50	9580.00	9563.43				MinPts	
	541.38	111.65	466.35	429.74	7.37	OSF1.50	9630.00	9613.43				MinPt-O-SF	
	1112.09	171.00	993.77	941.09	10.43	OSF1.50	14310.00	11040.00				MinPt-CtCt	
	1130.17	348.32	893.62	781.85	5.00	OSF1.50	19360.00	11040.00	OSF<5.00			Enter Alert	
	1136.63	414.02	856.26	722.61	4.20	OSF1.50	21154.42	11040.00				MinPts	
Cimarex Vaca Draw 20-17 Federal 48H Rev1 kFc 09May22 (Def Plan)													Warning Alert
	1729.78	32.81	1727.28	1696.97	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	1729.78	32.81	1727.25	1696.97	55396.96	MAS = 10.00 (m)	22.00	22.00				WRP	
	568.81	157.64	462.89	411.17	5.48	OSF1.50	10458.92	10442.35				MinPt-CtCt	
	569.02	158.24	462.69	410.78	5.46	OSF1.50	10500.00	10483.40				MINPT-O-EOU	
	569.27	158.53	462.75	410.74	5.45	OSF1.50	10520.00	10503.32				MinPt-O-ADP	

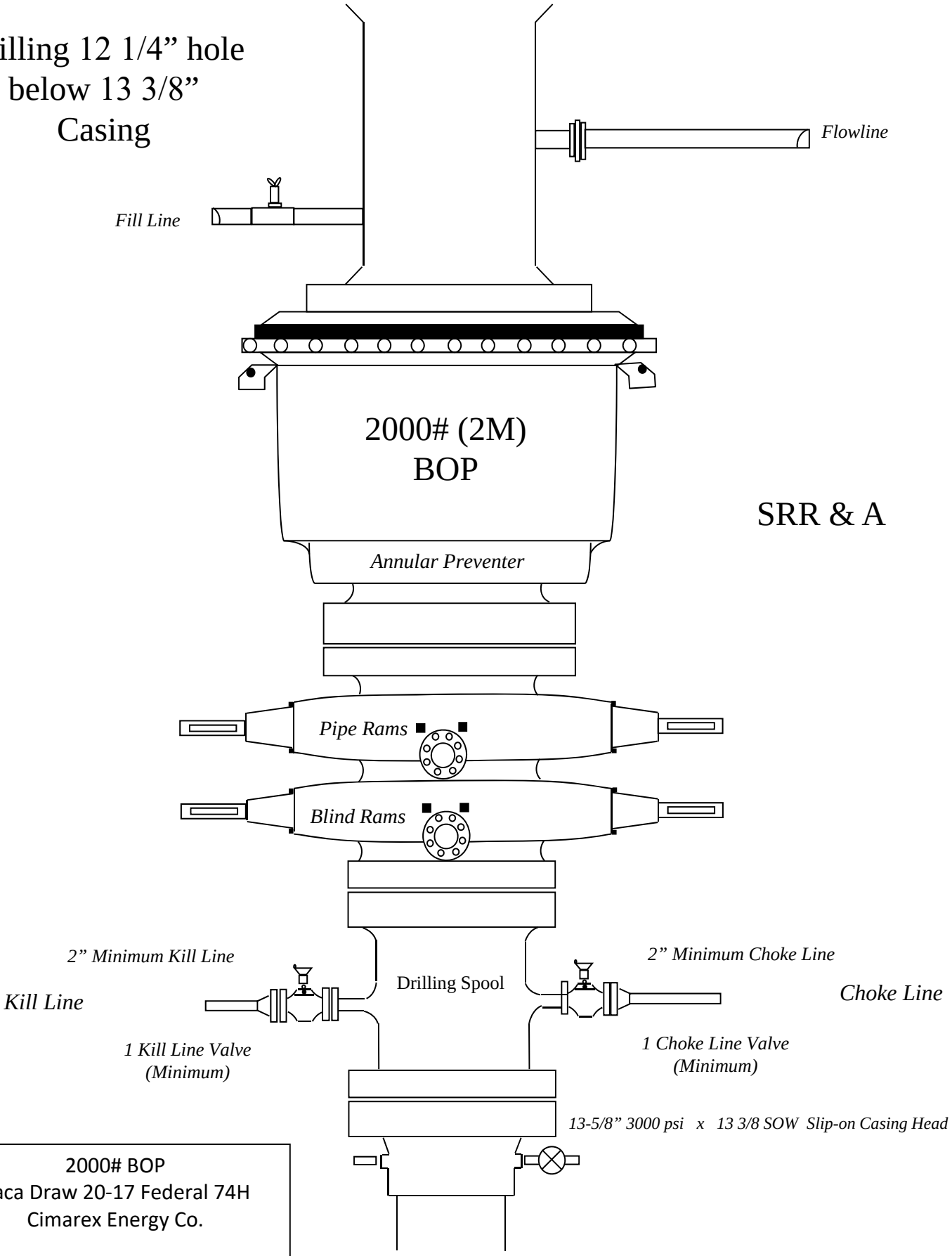
Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
	572.86	160.14	465.27	412.72	5.43	OSF1.50	10630.00	10610.90				MinPt-O-SF	
	847.84	256.57	675.96	591.27	4.99	OSF1.50	14200.00	11040.00	OSF<5.00			Enter Alert	
	847.81	654.21	410.84	193.60	1.95	OSF1.50	21154.42	11040.00				MinPts	
Cimarex Vaca Draw 20-17 Federal 47H Rev1 kFc 09May22 (Def Plan)													Warning Alert
	1749.78	32.81	1747.28	1716.97	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	1749.78	32.81	1747.24	1716.97	48346.88	MAS = 10.00 (m)	22.00	22.00				WRP	
	725.90	157.17	620.29	568.73	7.02	OSF1.50	10460.00	10443.43				MinPt-CtCt	
	725.95	157.37	620.21	568.58	7.01	OSF1.50	10480.00	10463.43				MINPT-O-EOU	
	726.04	157.47	620.23	568.57	7.00	OSF1.50	10490.00	10473.42				MinPt-O-ADP	
	727.43	157.97	621.29	569.46	6.99	OSF1.50	10550.00	10533.05				MinPt-O-SF	
	799.80	241.72	637.82	558.08	5.00	OSF1.50	13900.00	11040.00	OSF<5.00			Enter Alert	
	799.79	674.61	349.22	125.18	1.78	OSF1.50	21154.42	11040.00				MinPts	
Cimarex Vaca Draw 20-17 Federal #44H Rev6 kFc 28Sep19 (Non-Def Plan)													Warning Alert
	1830.73	32.81	1828.92	1797.92	N/A	MAS = 10.00 (m)	0.00	0.00				MinPts	
	1830.73	32.81	1828.90	1797.92	77470.89	MAS = 10.00 (m)	22.00	22.00				WRP	
	1829.91	32.81	1823.03	1797.10	360.53	MAS = 10.00 (m)	770.00	770.00				MinPts	
	1830.04	32.81	1821.50	1797.23	271.30	MAS = 10.00 (m)	1010.00	1010.00				MinPts	
	1830.06	32.81	1821.23	1797.25	260.37	MAS = 10.00 (m)	1050.00	1050.00				MINPT-O-EOU	
	1074.90	102.76	1005.32	972.14	16.15	OSF1.50	9490.00	9473.43				MinPt-CtCt	
	1075.03	103.09	1005.19	971.94	16.12	OSF1.50	9510.00	9493.43				MINPT-O-EOU	
	1075.17	103.25	1005.20	971.91	16.10	OSF1.50	9520.00	9503.43				MinPt-O-ADP	
	1083.79	105.65	1011.91	978.14	15.98	OSF1.50	9680.00	9663.43				MinPt-O-SF	
	1560.21	267.98	1377.69	1292.23	9.06	OSF1.50	16130.00	11040.00				MinPt-CtCt	
	1573.43	480.40	1249.27	1093.03	5.00	OSF1.50	21000.00	11040.00	OSF<5.00			Enter Alert	
	1573.86	487.25	1245.12	1086.61	4.93	OSF1.50	21154.42	11040.00				MinPts	
EOG Vaca Draw 20 Federal #1 (Offset) Plugged Inc Only 0ft-14200ft (Def Survey)													Warning Alert
	3569.47	32.81	3566.95	3536.67	160349.41	MAS = 10.00 (m)	0.00	0.00				Surface	
	3569.46	32.81	3566.45	3536.66	6971.48	MAS = 10.00 (m)	22.00	22.00				WRP	
	3567.11	32.81	3549.06	3534.31	229.12	MAS = 10.00 (m)	500.00	500.00				MinPts	
	3598.51	113.19	3522.22	3485.32	48.73	OSF1.50	2110.00	2106.93				MINPT-O-EOU	
	3614.47	132.17	3525.51	3482.29	41.78	OSF1.50	2540.00	2534.58				MinPt-O-ADP	
	3621.23	138.84	3527.84	3482.39	39.82	OSF1.50	2680.00	2673.81				MinPt-O-ADP	
	3668.14	189.24	3541.14	3478.90	29.44	OSF1.50	3570.00	3558.93				MINPT-O-EOU	
	3682.44	214.04	3538.91	3468.40	26.09	OSF1.50	4010.00	3996.52				MINPT-O-EOU	
	3689.11	222.04	3540.25	3467.07	25.19	OSF1.50	4210.00	4195.43				MinPt-O-ADP	
	3707.32	375.09	3456.43	3332.23	14.92	OSF1.50	7140.00	7123.43				MinPt-CtCt	
	3705.91	437.95	3413.11	3267.96	12.76	OSF1.50	8330.00	8313.43				MinPt-CtCt	
	1941.30	584.70	1550.66	1356.60	5.00	OSF1.50	12810.00	11040.00	OSF<5.00			Enter Alert	
	1215.37	605.72	810.72	609.65	3.02	OSF1.50	14320.00	11040.00				MinPt-CtCt	
	1215.47	606.00	810.63	609.46	3.01	OSF1.50	14340.00	11040.00				MinPts	
	1215.89	606.27	810.88	609.62	3.01	OSF1.50	14360.00	11040.00				MinPt-O-SF	
	1998.08	603.33	1595.02	1394.75	4.98	OSF1.50	15910.00	11040.00	OSF>5.00			Exit Alert	
	6937.49	595.67	6539.54	6341.81	17.54	OSF1.50	21154.42	11040.00				TD	
Cimarex Vaca Draw 20-17 Federal 46H Rev1 kFc 09May22 (Def Plan)													Warning Alert
	1769.78	32.81	1767.28	1736.97	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	1769.78	32.81	1767.24	1736.97	49384.46	MAS = 10.00 (m)	22.00	22.00				WRP	
	1384.76	147.09	1285.86	1237.66	14.34	OSF1.50	9830.00	9813.43				MinPt-CtCt	
	1385.19	149.88	1284.43	1235.31	14.07	OSF1.50	10030.00	10013.43				MINPT-O-EOU	
	1385.48	150.26	1284.48	1235.22	14.04	OSF1.50	10060.00	10043.43				MinPt-O-ADP	
	1394.08	152.69	1291.45	1241.39	13.90	OSF1.50	10290.00	10273.43				MinPt-O-SF	
	1596.41	480.87	1275.00	1115.54	5.00	OSF1.50	18000.00	11040.00	OSF<5.00			Enter Alert	
	1596.41	678.08	1143.52	918.33	3.54	OSF1.50	21154.42	11040.00				MinPts	
Hankamer Curtis Bass-Federal #1 (Offset) Plugged Blind 0ft-5074ft (Def Survey)													Warning Alert
	4612.37	32.81	4608.50	4579.56	3384.75	MAS = 10.00 (m)	0.00	0.00				Surface	
	4612.37	32.81	4606.20	4579.56	1257.19	MAS = 10.00 (m)	22.00	22.00				WRP	
	4612.37	415.65	4334.43	4196.72	16.74	OSF1.50	1350.00	1350.00				MinPt-CtCt	
	4748.33	1426.28	3796.64	3322.04	5.00	OSF1.50	4580.00	4563.58	OSF<5.00			Enter Alert	
	4751.30	1582.70	3695.33	3168.60	4.51	OSF1.50	5080.00	5063.43				MinPts	
	5004.74	1504.37	4000.63	3500.37	5.00	OSF1.50	6650.00	6633.43	OSF>5.00			Exit Alert	
	6172.29	420.33	5890.12	5751.96	22.32	OSF1.50	15320.00	11040.00				MinPt-CtCt	
	6172.83	421.45	5889.92	5751.39	22.26	OSF1.50	15400.00	11040.00				MINPT-O-EOU	
	6185.38	435.17	5893.31	5750.20	21.59	OSF1.50	15720.00	11040.00				MinPt-O-ADP	
	8403.11	1137.24	7643.30	7265.87	11.13	OSF1.50	21020.00	11040.00				MinPt-O-SF	
	8494.90	1149.31	7727.05	7345.59	11.13	OSF1.50	21154.42	11040.00				TD	
Final Surveys - Cimarex Vaca Draw 20-17 Federal #73H 0ft-19583ft (Surcon Corrected) (Def Survey)													Pass
	72.09	32.81	70.28	39.28	756409.83	MAS = 10.00 (m)	0.00	0.00				Surface	
	72.09	32.81	70.28	39.28	33716.04	MAS = 10.00 (m)	22.00	22.00				WRP	
	71.69	32.81	68.49	38.88	50.27	MAS = 10.00 (m)	250.00	250.00				MinPts	
	72.75	32.81	63.86	39.94	10.02	MAS = 10.00 (m)	1060.00	1060.00				MINPT-O-EOU	
	72.29	32.81	61.54	39.49	7.76	MAS = 10.00 (m)	1340.00	1340.00				MinPts	
	72.51	32.81	61.26	39.70	7.38	MAS = 10.00 (m)	1410.00	1410.00				MINPT-O-EOU	
	77.45	32.81	64.74	44.64	6.85	MAS = 10.00 (m)	1630.00	1629.55				MinPt-O-SF	
	367.98	79.08	314.75	288.90	7.09	OSF1.50	7490.00	7473.43				MinPt-CtCt	
	368.72	82.55	313.15	286.17	6.80	OSF1.50	7820.00	7803.43				MINPT-O-EOU	
	352.18	98.17	286.20	254.01	5.44	OSF1.50	9320.00	9303.43				MinPt-CtCt	
	352.33	98.52	286.06	253.81	5.44	OSF1.50	9340.00	9323.43				MinPts	
	352.84	98.87	286.27	253.98	5.43	OSF1.50	9360.00	9343.43				MinPt-O-SF	
	1203.65	143.49	1103.27	1060.17	13.80	OSF1.50	14490.00	11040.00				MinPt-CtCt	
	1204.18	145.04	1102.74	1059.14	13.65	OSF1.50	14550.00	11040.00				MINPT-O-EOU	
	1203.35	151.55	1097.60	1051.81	12.98	OSF1.50	14790.00	11040.00				MinPt-CtCt	
	1194.77	182.29	1068.52	1012.48	10.53	OSF1.50	15880.00	11040.00				MinPt-CtCt	
	1195.90	186.00	1067.13	1009.90	10.32	OSF1.50	16010.00	11040.00				MINPT-O-EOU	
	1197.07	187.42	1067.33	1009.64	10.25	OSF1.50	16060.00	11040.00				MinPt-O-ADP	
	1197.41	197.47	1061.03	999.93	9.68	OSF1.50	16400.00	11040.00				MinPt-CtCt	
	1184.58	219.14	1033.76	965.44	8.57	OSF1.50	17130.00	11040.00				MinPt-CtCt	

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		
	1185.20	221.10	1033.02	964.10	8.49	OSF1.50	17200.00	11040.00				MINPT-O-EOU	
	1186.07	223.63	1032.25	962.44	8.39	OSF1.50	17290.00	11040.00				MinPt-CtCt	
	1187.08	226.73	1031.14	960.34	8.28	OSF1.50	17400.00	11040.00				MINPT-O-EOU	
	1188.25	228.14	1031.34	960.11	8.24	OSF1.50	17450.00	11040.00				MinPt-O-ADP	
	1184.22	265.32	1002.61	918.90	6.99	OSF1.50	18670.00	11040.00				MinPt-CtCt	
	1184.19	276.66	995.03	907.53	6.69	OSF1.50	19040.00	11040.00				MinPt-CtCt	
	1184.52	288.42	987.51	896.10	6.40	OSF1.50	19420.00	11040.00				MinPt-CtCt	
	1151.59	311.08	939.45	840.51	5.75	OSF1.50	20190.00	11040.00				MinPt-CtCt	
	1152.92	315.29	937.89	837.63	5.68	OSF1.50	20340.00	11040.00				MINPT-O-EOU	
	1154.08	316.69	938.09	837.40	5.66	OSF1.50	20390.00	11040.00				MinPt-O-ADP	
	1206.62	338.58	975.75	868.04	5.53	OSF1.50	21154.42	11040.00				MinPt-O-SF	
Cimarex Vaca Draw 20-17 Federal #72H Surveys 0ft to update (Non-Def Survey)													Pass
	84.84	32.81	83.03	52.03	306593.47	MAS = 10.00 (m)	0.00	0.00				MinPts	
	84.85	32.81	83.04	52.04	13526.12	MAS = 10.00 (m)	22.00	22.00				WRP	
	85.00	32.81	82.95	52.19	342.28	MAS = 10.00 (m)	80.00	80.00				MINPT-O-EOU	
	85.41	32.81	82.91	52.60	120.81	MAS = 10.00 (m)	150.00	150.00				MINPT-O-EOU	
	117.82	32.81	103.35	85.02	9.06	MAS = 10.00 (m)	1840.00	1838.41				MinPt-O-SF	
	345.00	58.17	305.70	286.84	9.10	OSF1.50	5430.00	5413.43				MinPt-CtCt	
	345.17	58.60	305.58	286.58	9.04	OSF1.50	5470.00	5453.43				MINPT-O-EOU	
	345.37	58.81	305.62	286.55	9.01	OSF1.50	5490.00	5473.43				MinPt-O-ADP	
	389.42	92.78	327.05	296.64	6.38	OSF1.50	8750.00	8733.43				MinPt-CtCt	
	389.59	93.04	327.02	296.55	6.37	OSF1.50	8770.00	8753.43				MinPts	
	390.64	93.60	327.61	297.04	6.36	OSF1.50	8810.00	8793.43				MinPt-O-SF	
	1749.39	83.62	1689.33	1665.77	36.86	OSF1.50	11730.00	11040.00				MinPt-CtCt	
	1749.41	83.71	1689.28	1665.70	36.81	OSF1.50	11740.00	11040.00				MINPT-O-EOU	
	1749.48	83.80	1689.29	1665.68	36.77	OSF1.50	11750.00	11040.00				MinPt-O-ADP	
	2044.56	105.90	1970.00	1938.66	32.43	OSF1.50	12790.00	11040.00				MinPt-O-SF	
	9583.67	144.94	9485.48	9438.74	102.46	OSF1.50	21154.42	11040.00				TD	
Cimarex Vaca Draw 20-17 Federal #72H Rev6 kFc 28Sep19 (Non-Def Plan)													Pass
	84.84	32.81	83.03	52.03	306593.47	MAS = 10.00 (m)	0.00	0.00				MinPts	
	84.85	32.81	83.04	52.04	13526.12	MAS = 10.00 (m)	22.00	22.00				WRP	
	85.00	32.81	82.95	52.19	342.28	MAS = 10.00 (m)	80.00	80.00				MINPT-O-EOU	
	85.41	32.81	82.91	52.60	120.81	MAS = 10.00 (m)	150.00	150.00				MINPT-O-EOU	
	117.82	32.81	103.35	85.02	9.06	MAS = 10.00 (m)	1840.00	1838.41				MinPt-O-SF	
	345.00	58.17	305.70	286.84	9.10	OSF1.50	5430.00	5413.43				MinPt-CtCt	
	345.17	58.60	305.58	286.58	9.04	OSF1.50	5470.00	5453.43				MINPT-O-EOU	
	345.37	58.81	305.62	286.55	9.01	OSF1.50	5490.00	5473.43				MinPt-O-ADP	
	387.79	94.48	323.98	293.32	6.28	OSF1.50	8820.00	8803.43				MinPt-CtCt	
	387.89	94.65	323.93	293.24	6.28	OSF1.50	8830.00	8813.43				MinPts	
	388.42	95.00	324.15	293.42	6.28	OSF1.50	8850.00	8833.43				MinPt-O-SF	
	1615.90	248.62	1445.45	1367.28	10.25	OSF1.50	18080.00	11040.00				MinPt-CtCt	
	1639.93	343.93	1405.93	1296.01	7.40	OSF1.50	21154.42	11040.00				MinPts	
Cimarex Vaca Draw 20-17 Federal #71H MWD 0ft-Update (Non-Def Survey)													Pass
	99.98	32.81	98.18	67.18	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	99.98	32.81	98.17	67.17	70802.41	MAS = 10.00 (m)	22.00	22.00				WRP	
	99.66	32.81	96.09	66.86	55.33	MAS = 10.00 (m)	300.00	300.00				MinPts	
	101.57	32.81	95.42	68.76	23.01	MAS = 10.00 (m)	650.00	650.00				MINPT-O-EOU	
	142.78	32.81	122.86	109.97	7.73	MAS = 10.00 (m)	2530.00	2524.63				MinPt-O-SF	
	252.39	65.02	208.51	187.37	5.93	OSF1.50	5990.00	5973.43				MinPt-CtCt	
	252.63	65.82	208.20	186.81	5.87	OSF1.50	6060.00	6043.43				MINPT-O-EOU	
	252.82	66.05	208.23	186.77	5.85	OSF1.50	6080.00	6063.43				MinPt-O-ADP	
	259.54	68.66	213.17	190.88	5.78	OSF1.50	6310.00	6293.43				MinPt-O-SF	
	524.06	102.43	455.26	421.63	7.77	OSF1.50	9550.00	9533.43				MinPt-O-SF	
	1152.35	101.73	1080.23	1050.62	19.24	OSF1.50	11890.00	11040.00				MinPt-CtCt	
	1130.35	131.83	1038.23	998.53	14.07	OSF1.50	13190.00	11040.00				MinPt-CtCt	
	1130.61	132.38	1038.10	998.23	14.02	OSF1.50	13210.00	11040.00				MINPT-O-EOU	
	1130.87	132.65	1038.17	998.21	13.99	OSF1.50	13220.00	11040.00				MinPt-O-ADP	
	1156.45	138.05	1060.04	1018.40	13.73	OSF1.50	13430.00	11040.00				MinPt-O-SF	
	8048.51	147.87	7947.85	7900.64	85.17	OSF1.50	21154.42	11040.00				TD	
Final Surveys - Cimarex Vaca Draw 20-17 Federal #45H 0ft-19226ft (Surcon Corrected) (Def Survey)													Pass
	1810.74	32.81	1808.93	1777.93	N/A	MAS = 10.00 (m)	0.00	0.00				MinPts	
	1810.76	32.81	1808.93	1777.95	82800.96	MAS = 10.00 (m)	22.00	22.00				WRP	
	1806.34	32.81	1797.59	1773.54	259.78	MAS = 10.00 (m)	1040.00	1040.00				MINPT-O-EOU	
	759.84	95.37	695.39	664.47	12.24	OSF1.50	8750.00	8733.43				MinPt-CtCt	
	760.15	96.24	695.08	663.92	12.15	OSF1.50	8820.00	8803.43				MinPts	
	764.93	97.88	698.55	667.05	12.09	OSF1.50	8930.00	8913.43				MinPt-O-SF	
	1839.24	194.52	1705.41	1644.72	15.05	OSF1.50	15510.00	11040.00				MinPt-CtCt	
	1840.69	198.60	1704.11	1642.10	14.74	OSF1.50	15640.00	11040.00				MINPT-O-EOU	
	1843.73	202.10	1704.79	1641.63	14.50	OSF1.50	15750.00	11040.00				MinPt-O-ADP	
	1858.79	216.36	1710.35	1642.43	13.59	OSF1.50	16170.00	11040.00				MinPt-O-ADP	
	1871.30	237.95	1708.53	1633.34	12.36	OSF1.50	16810.00	11040.00				MinPt-CtCt	
	1872.77	259.06	1695.93	1613.71	11.31	OSF1.50	17450.00	11040.00				MinPt-CtCt	
	1874.44	272.78	1688.45	1601.66	10.73	OSF1.50	17860.00	11040.00				MinPt-CtCt	
	1873.30	279.47	1682.85	1593.84	10.45	OSF1.50	18050.00	11040.00				MinPt-CtCt	
	1878.25	290.56	1680.33	1587.68	10.07	OSF1.50	18380.00	11040.00				MINPT-O-EOU	
	1881.90	298.22	1678.87	1583.68	9.82	OSF1.50	18600.00	11040.00				MINPT-O-EOU	
	1883.28	299.85	1679.14	1583.43	9.77	OSF1.50	18650.00	11040.00				MinPt-O-ADP	
	1850.36	339.86	1619.64	1510.50	8.42	OSF1.50	19750.00	11040.00				MinPt-CtCt	
	1852.99	346.75	1617.59	1506.24	8.26	OSF1.50	19950.00	11040.00				MINPT-O-EOU	
	1857.78	387.45	1595.33	1470.33	7.38	OSF1.50	21154.42	11040.00				MinPts	
Cimarex Vaca Draw 20-17 Federal #44H MWD 0ft-Update (Non-Def Survey)													Pass
	1830.73	32.81	1828.92	1797.92	N/A	MAS = 10.00 (m)	0.00	0.00				MinPts	
	1830.73	32.81	1828.90	1797.92	77470.90	MAS = 10.00 (m)	22.00	22.00				WRP	
	1829.91	32.81	1823.03	1797.10	360.53	MAS = 10.00 (m)	770.00	770.00				MinPts	
	1830.04	32.81	1821.50	1797.23	271.30	MAS = 10.00 (m)	1010.00	1010.00				MinPts	
	1830.06	32.81	1821.23	1797.25	260.37	MAS = 10.00 (m)	1050.00	1050.00				MINPT-O-EOU	
	1075.41	101.18	1007.20	974.22	16.27	OSF1.50	9430.00	9413.43				MinPt-CtCt	
	1075.53	101.53	1007.04	974.00	16.24	OSF1.50	9450.00	9433.43				MINPT-O-EOU	
	1075.67	101.70	1007.05	973.97	16.22	OSF1.50	9460.00	9443.43				MinPt-O-ADP	

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		
	1082.51	103.75	1012.23	978.76	16.12	OSF1.50	9590.00	9573.43				MinPt-O-SF	
	1600.08	109.38	1523.67	1490.70	24.11	OSF1.50	11220.00	10998.61				MinPt-O-SF	
	1605.80	112.87	1526.95	1492.94	23.45	OSF1.50	11650.00	11040.00				MinPt-CtCt	
	1605.88	113.10	1526.87	1492.78	23.40	OSF1.50	11670.00	11040.00				MinPts	
	1680.80	120.93	1596.60	1559.87	22.73	OSF1.50	12150.00	11040.00				MinPt-O-SF	
	9635.67	154.03	9531.59	9481.63	96.39	OSF1.50	21154.42	11040.00				TD	
Cimarex Vaca Draw 20-17 Federal #43H MWD 0ft-Update (Non-Def Survey)													Pass
	1850.71	32.81	1848.90	1817.90	N/A	MAS = 10.00 (m)	0.00	0.00				MinPts	
	1850.72	32.81	1848.88	1817.91	71736.49	MAS = 10.00 (m)	22.00	22.00				WRP	
	1851.22	32.81	1844.83	1818.41	404.15	MAS = 10.00 (m)	700.00	700.00				MinPts	
	1851.45	32.81	1842.70	1818.64	266.53	MAS = 10.00 (m)	1040.00	1040.00				MINPT-O-EOU	
	1851.11	32.81	1840.89	1818.30	215.71	MAS = 10.00 (m)	1270.00	1270.00				MinPts	
	1641.35	52.85	1605.57	1588.50	48.05	OSF1.50	4800.00	4783.43				MinPt-CtCt	
	1641.48	53.17	1605.47	1588.31	47.77	OSF1.50	4830.00	4813.43				MINPT-O-EOU	
	1641.66	53.38	1605.51	1588.28	47.60	OSF1.50	4850.00	4833.43				MinPt-O-ADP	
	1658.90	62.29	1616.82	1596.61	41.00	OSF1.50	5750.00	5733.43				MINPT-O-EOU	
	1661.95	66.02	1617.37	1595.93	38.71	OSF1.50	6120.00	6103.43				MinPt-O-ADP	
	1672.50	80.55	1618.24	1591.95	31.77	OSF1.50	7550.00	7533.43				MINPT-O-EOU	
	1678.05	93.77	1614.97	1584.28	27.31	OSF1.50	8820.00	8803.43				MINPT-O-EOU	
	1678.17	93.90	1614.99	1584.27	27.28	OSF1.50	8830.00	8813.43				MinPt-O-ADP	
	1707.23	99.33	1640.01	1607.90	26.54	OSF1.50	9270.00	9253.43				MinPt-O-SF	
	2464.91	108.88	2389.07	2356.03	37.15	OSF1.50	11620.00	11040.00				MinPt-CtCt	
	2465.05	109.23	2388.97	2355.82	37.03	OSF1.50	11650.00	11040.00				MINPT-O-EOU	
	2465.16	109.35	2389.00	2355.81	36.99	OSF1.50	11660.00	11040.00				MinPt-O-ADP	
	2466.72	112.51	2388.45	2354.20	35.87	OSF1.50	11880.00	11040.00				MinPt-CtCt	
	2466.86	112.95	2388.30	2353.91	35.72	OSF1.50	11910.00	11040.00				MINPT-O-EOU	
	2466.99	113.11	2388.33	2353.88	35.67	OSF1.50	11920.00	11040.00				MinPt-O-ADP	
	2728.92	135.13	2635.65	2593.79	32.48	OSF1.50	13050.00	11040.00				MinPt-O-SF	
	9594.13	173.10	9477.06	9421.03	85.57	OSF1.50	21154.42	11040.00				TD	
Cimarex Vaca Draw 20-17 Federal #43H Rev3 IP 13Aug19 (Non-Def Plan)													Pass
	1850.71	32.81	1848.21	1817.90	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	1850.71	32.81	1848.18	1817.90	69902.54	MAS = 10.00 (m)	22.00	22.00				WRP	
	1643.92	111.51	1568.75	1532.42	22.59	OSF1.50	8830.00	8813.43				MinPt-CtCt	
	1644.15	112.06	1568.57	1532.09	22.50	OSF1.50	8870.00	8853.43				MINPT-O-EOU	
	1644.28	112.20	1568.60	1532.08	22.48	OSF1.50	8880.00	8863.43				MinPt-O-ADP	
	1663.14	115.94	1584.62	1547.21	22.18	OSF1.50	9180.00	9163.43				MinPt-O-SF	
	2414.67	231.75	2256.65	2182.91	16.30	OSF1.50	15290.00	11040.00				MinPt-CtCt	
	2422.49	477.86	2100.39	1944.63	7.74	OSF1.50	21154.42	11040.00				MinPts	
Final Surveys - Cimarex Vaca Draw 20-17 Federal #4H ST01 MWD 0ft-22279ft (Surcon Corrected) (Def Survey)													Pass
	3049.09	32.81	3047.39	3016.28	N/A	MAS = 10.00 (m)	0.00	0.00				MinPts	
	3049.12	32.81	3047.38	3016.31	77037.33	MAS = 10.00 (m)	22.00	22.00				WRP	
	3049.29	32.81	3047.33	3016.48	11891.35	MAS = 10.00 (m)	80.00	80.00				MINPT-O-EOU	
	3049.73	32.81	3047.26	3016.92	3974.62	MAS = 10.00 (m)	160.00	160.00				MINPT-O-EOU	
	1909.72	100.39	1841.86	1809.33	29.31	OSF1.50	9180.00	9163.43				MinPt-CtCt	
	1909.99	101.12	1841.60	1808.87	29.13	OSF1.50	9240.00	9223.43				MINPT-O-EOU	
	1910.19	101.35	1841.64	1808.84	29.07	OSF1.50	9260.00	9243.43				MinPt-O-ADP	
	1917.47	107.28	1845.02	1810.19	27.49	OSF1.50	9860.00	9843.43				MinPt-CtCt	
	1918.44	110.37	1843.89	1808.07	26.74	OSF1.50	10150.00	10133.43				MINPT-O-EOU	
	1918.72	110.71	1843.93	1808.01	26.67	OSF1.50	10180.00	10163.43				MinPt-O-ADP	
	1920.60	113.45	1844.00	1807.15	26.02	OSF1.50	10450.00	10433.43				MINPT-O-EOU	
	1921.44	114.45	1844.17	1806.99	25.80	OSF1.50	10550.00	10533.05				MinPt-O-ADP	
	1936.84	117.88	1857.26	1818.96	25.25	OSF1.50	11000.00	10906.52				MinPt-O-SF	
	2362.42	132.90	2273.35	2229.53	26.94	OSF1.50	12790.00	11040.00				MinPt-O-ADP	
	2363.30	133.77	2273.64	2229.52	26.77	OSF1.50	12820.00	11040.00				MinPt-O-ADP	
	2371.33	152.44	2269.22	2218.88	23.54	OSF1.50	13390.00	11040.00				MinPt-CtCt	
	2372.68	160.05	2265.50	2212.63	22.42	OSF1.50	13620.00	11040.00				MINPT-O-EOU	
	2373.70	161.31	2265.69	2212.40	22.26	OSF1.50	13660.00	11040.00				MinPt-O-ADP	
	2373.97	178.54	2254.46	2195.43	20.09	OSF1.50	14110.00	11040.00				MinPt-CtCt	
	2375.51	183.05	2252.99	2192.45	19.61	OSF1.50	14240.00	11040.00				MINPT-O-EOU	
	2375.21	191.01	2247.39	2184.20	18.78	OSF1.50	14430.00	11040.00				MinPt-CtCt	
	2374.08	220.05	2226.89	2154.02	16.28	OSF1.50	15150.00	11040.00				MinPt-CtCt	
	2357.48	275.07	2173.63	2082.42	12.92	OSF1.50	16430.00	11040.00				MinPt-CtCt	
	2351.40	298.27	2152.08	2053.14	11.88	OSF1.50	16940.00	11040.00				MinPt-CtCt	
	2351.40	307.13	2146.17	2044.27	11.53	OSF1.50	17130.00	11040.00				MinPt-CtCt	
	2350.37	320.30	2136.36	2030.07	11.05	OSF1.50	17410.00	11040.00				MinPt-CtCt	
	2348.48	329.94	2128.04	2018.53	10.72	OSF1.50	17620.00	11040.00				MinPt-CtCt	
	2349.95	334.71	2126.33	2015.24	10.57	OSF1.50	17740.00	11040.00				MINPT-O-EOU	
	2355.20	345.17	2124.61	2010.03	10.27	OSF1.50	17960.00	11040.00				MinPt-CtCt	
	2353.83	354.28	2117.16	1999.55	10.00	OSF1.50	18170.00	11040.00				MinPt-CtCt	
	2353.56	360.39	2112.82	1993.16	9.83	OSF1.50	18310.00	11040.00				MinPt-CtCt	
	2342.19	375.36	2091.47	1966.82	9.39	OSF1.50	18660.00	11040.00				MinPt-CtCt	
	2342.07	379.74	2088.43	1962.33	9.28	OSF1.50	18760.00	11040.00				MinPt-CtCt	
	2343.86	385.27	2086.53	1958.59	9.15	OSF1.50	18900.00	11040.00				MINPT-O-EOU	
	2346.85	388.83	2087.15	1958.02	9.08	OSF1.50	18990.00	11040.00				MinPt-O-ADP	
	2368.65	431.07	2080.79	1937.58	8.26	OSF1.50	19880.00	11040.00				MinPt-CtCt	
	2363.52	447.95	2064.41	1915.57	7.94	OSF1.50	20250.00	11040.00				MinPt-CtCt	
	2365.21	489.64	2038.31	1875.58	7.26	OSF1.50	21154.42	11040.00				MinPts	
Final Surveys - Cimarex Vaca Draw 20-17 Federal #4H MWD 0ft-12228ft (Surcon Corrected) (Def Survey)													Pass
	3049.09	32.81	3046.59	3016.28	N/A	MAS = 10.00 (m)	0.00	0.00				MinPts	
	3049.12	32.81	3046.58	3016.31	77017.06	MAS = 10.00 (m)	22.00	22.00				WRP	
	3049.29	32.81	3046.53	3016.48	11888.22	MAS = 10.00 (m)	80.00	80.00				MINPT-O-EOU	
	3049.73	32.81	3046.46	3016.92	3973.58	MAS = 10.00 (m)	160.00	160.00				MINPT-O-EOU	
	1909.72	101.33	1840.92	1808.40	29.30	OSF1.50	9180.00	9163.43				MinPt-CtCt	
	1909.90	101.94	1840.66	1807.97	29.15	OSF1.50	9230.00	9213.43				MINPT-O-EOU	
	1910.19	102.28	1840.70	1807.90	29.06	OSF1.50	9260.00	9243.43				MinPt-O-ADP	
	1917.47	108.22	1844.09	1809.26	27.48	OSF1.50	9860.00	9843.43				MinPt-CtCt	
	1918.44	111.30	1842.96	1807.15	26.73	OSF1.50	10150.00	10133.43				MINPT-O-EOU	
	1918.72	111.64	1843.00	1807.08	26.65	OSF1.50	10180.00	10163.43				MinPt-O-ADP	
	1920.60	114.37	1843.08	1806.23	26.01	OSF1.50	10450.00	10433.43				MINPT-O-EOU	

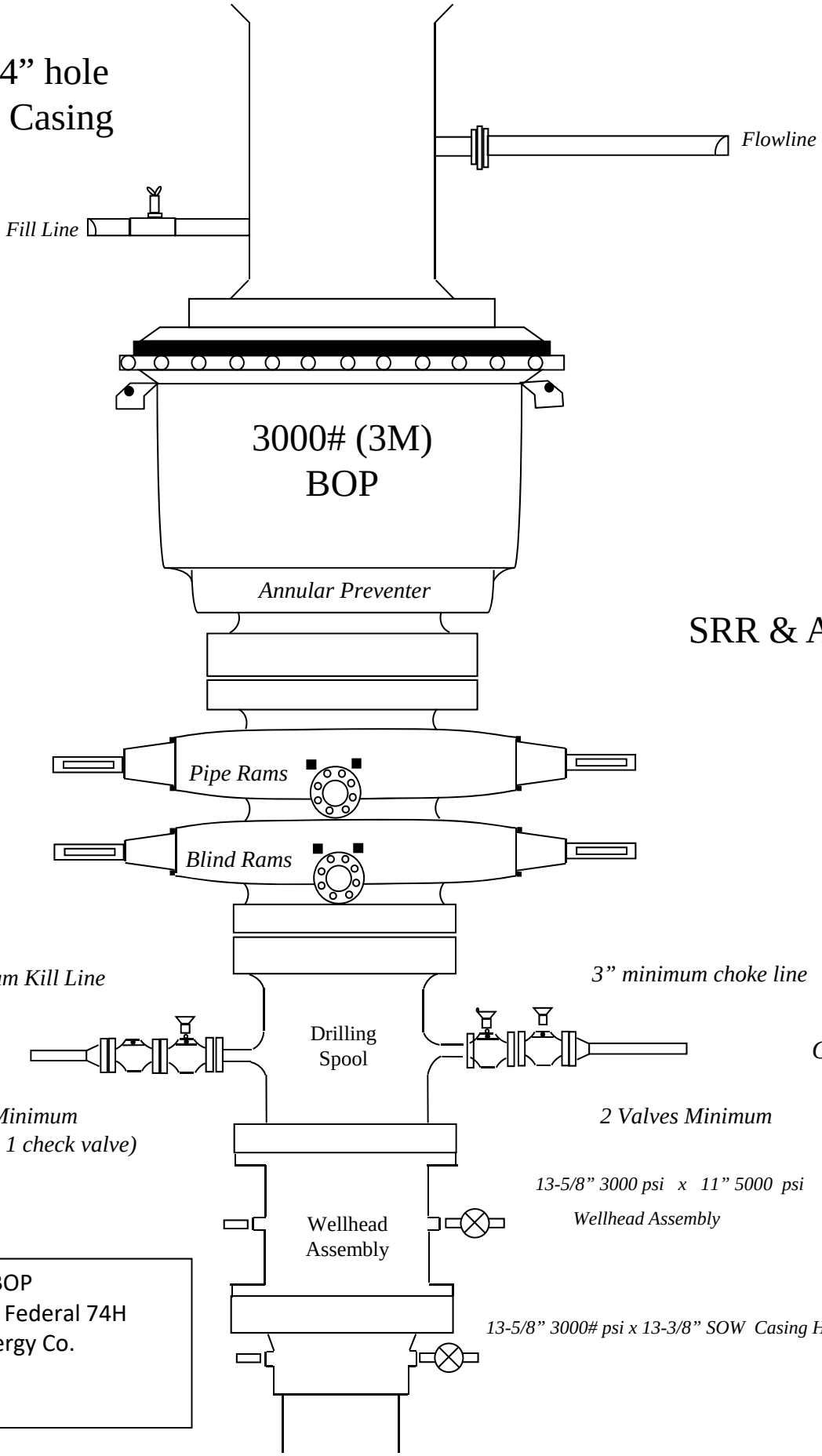
Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
	1921.44	115.37	1843.25	1806.08	25.79	OSF1.50	10550.00	10533.05				MinPt-O-ADP	
	1936.84	118.80	1856.33	1818.04	25.24	OSF1.50	11000.00	10906.52				MinPt-O-SF	
	10291.17	167.16	10178.75	10124.02	93.98	OSF1.50	21154.42	11040.00				TD	

Drilling 12 1/4" hole below 13 3/8" Casing



2000# BOP
Vaca Draw 20-17 Federal 74H
Cimarex Energy Co.

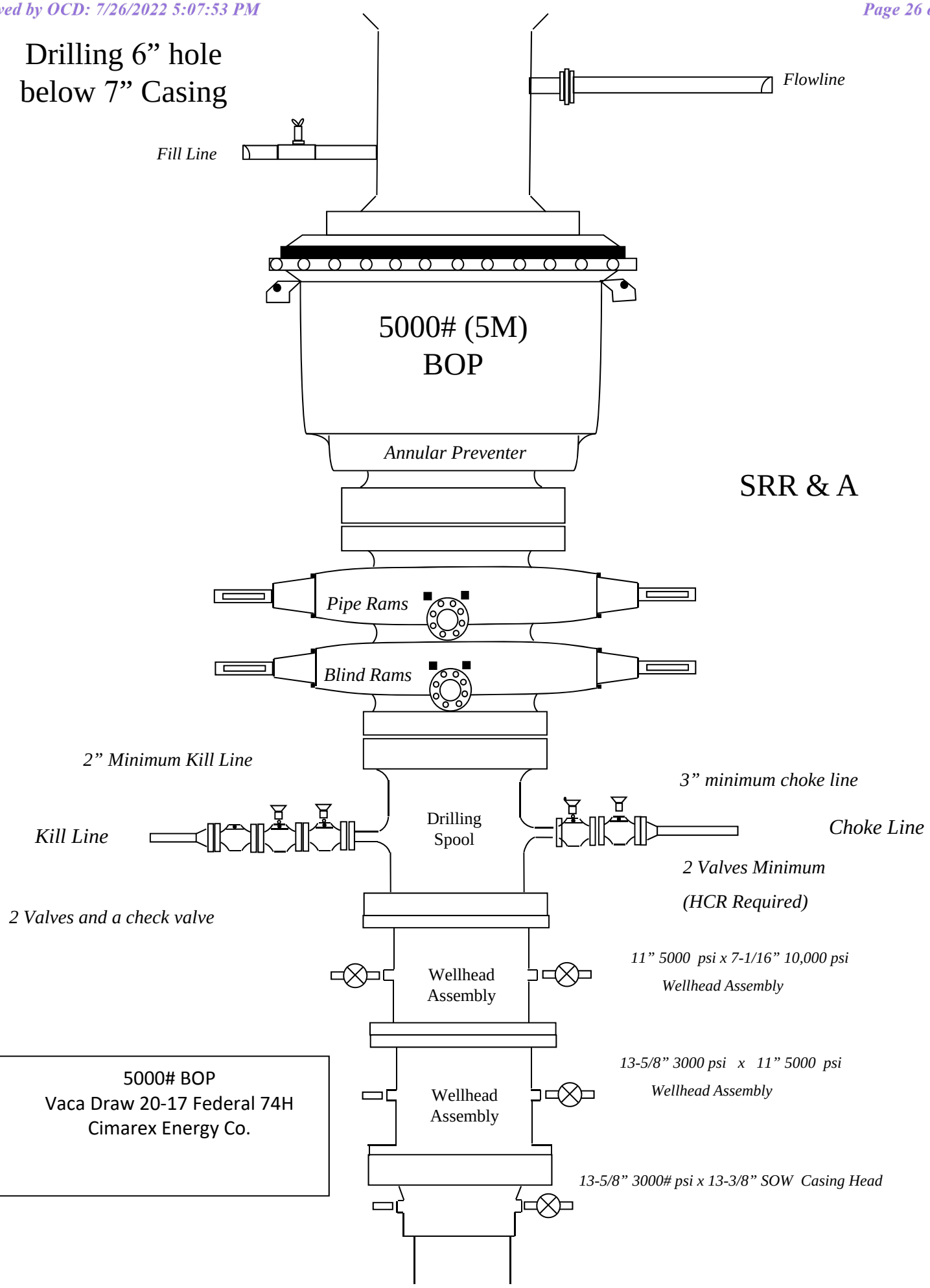
Drilling 8-3/4" hole
below 9 5/8" Casing



SRR & A

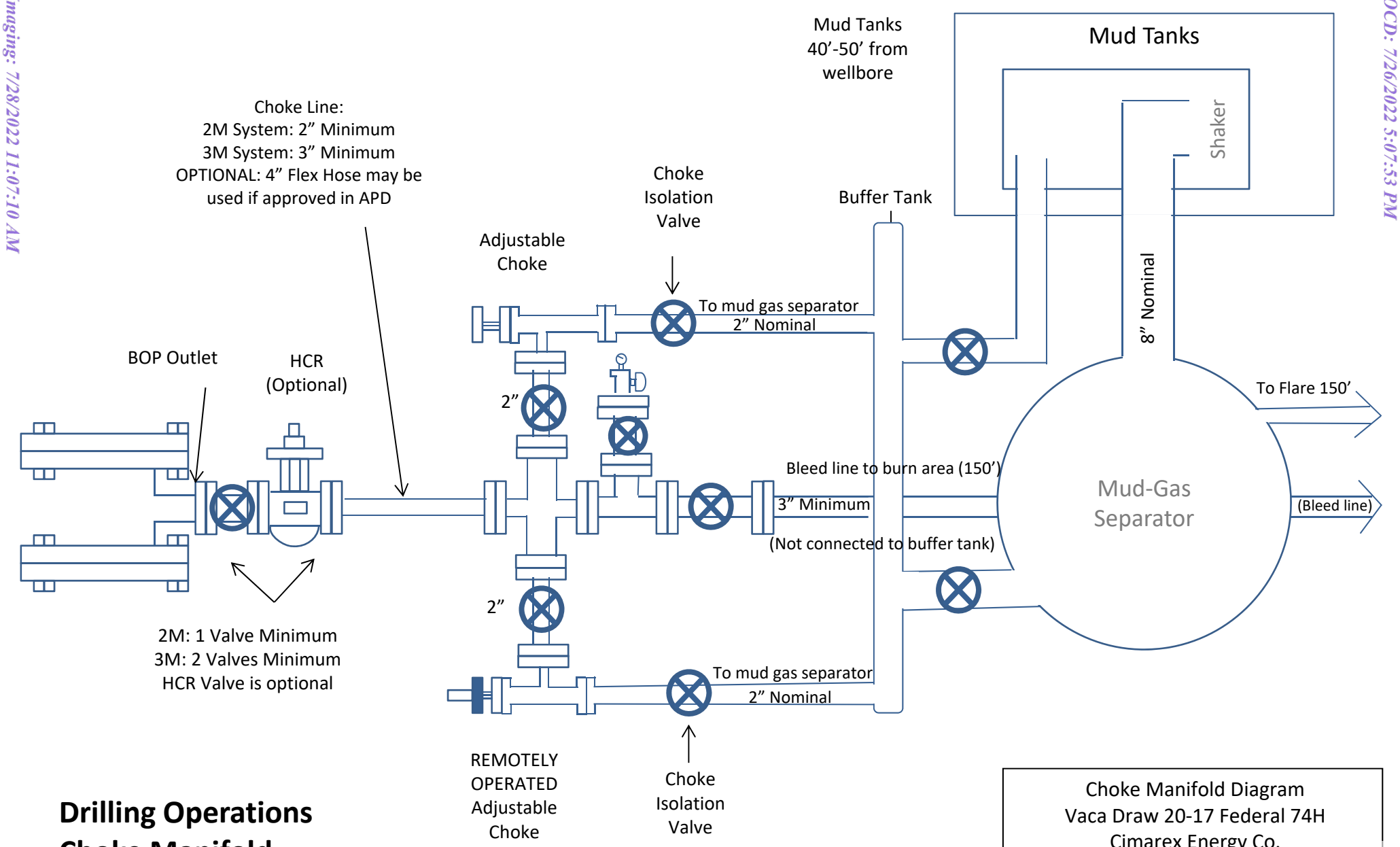
3000# BOP
Vaca Draw 20-17 Federal 74H
Cimarex Energy Co.

Drilling 6” hole below 7” Casing



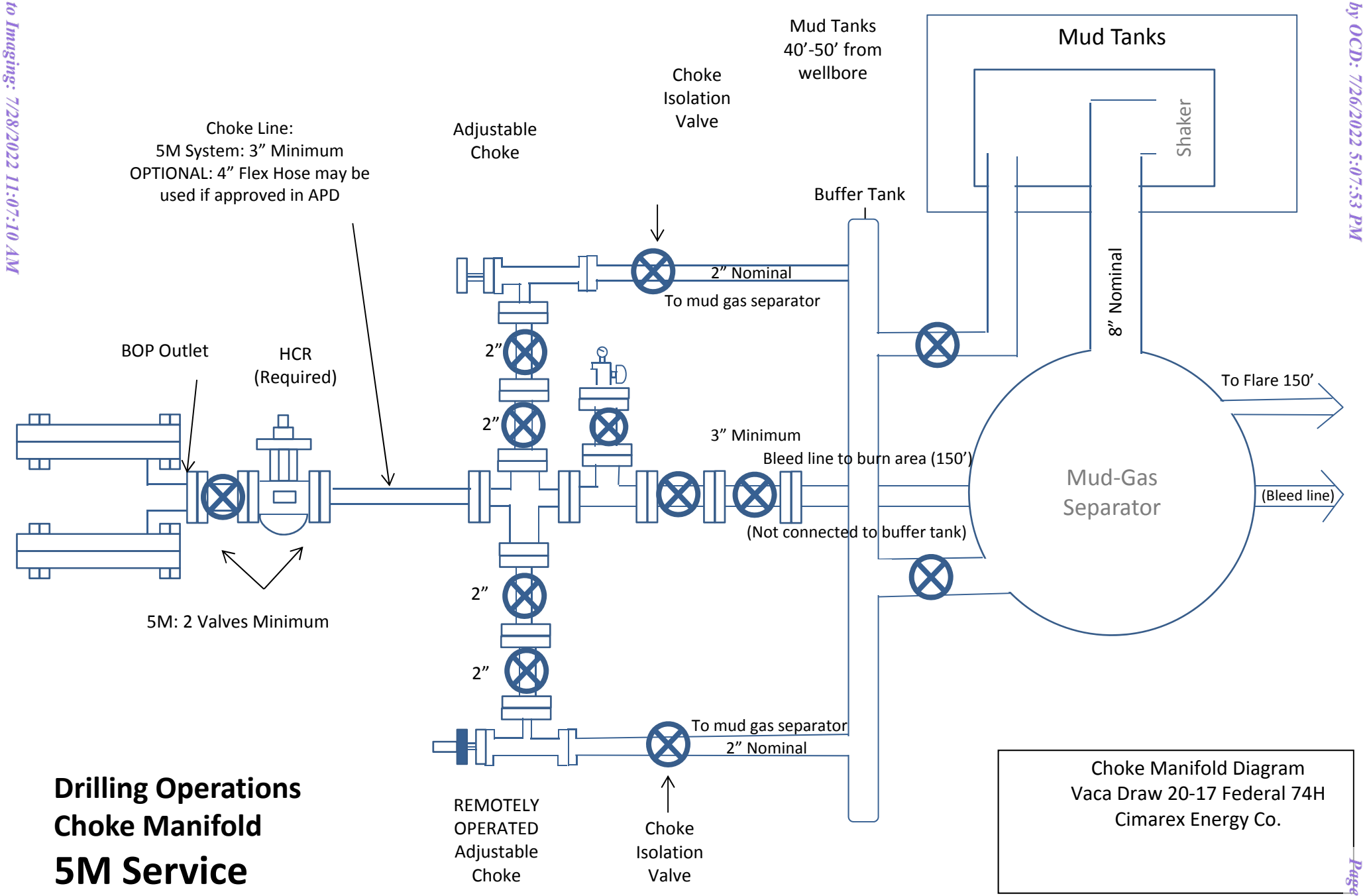
SRR & A

5000# BOP
Vaca Draw 20-17 Federal 74H
Cimarex Energy Co.



Drilling Operations
Choke Manifold
2M/3M Service

Choke Manifold Diagram
Vaca Draw 20-17 Federal 74H
Cimarex Energy Co.



Drilling Operations
Choke Manifold
5M Service

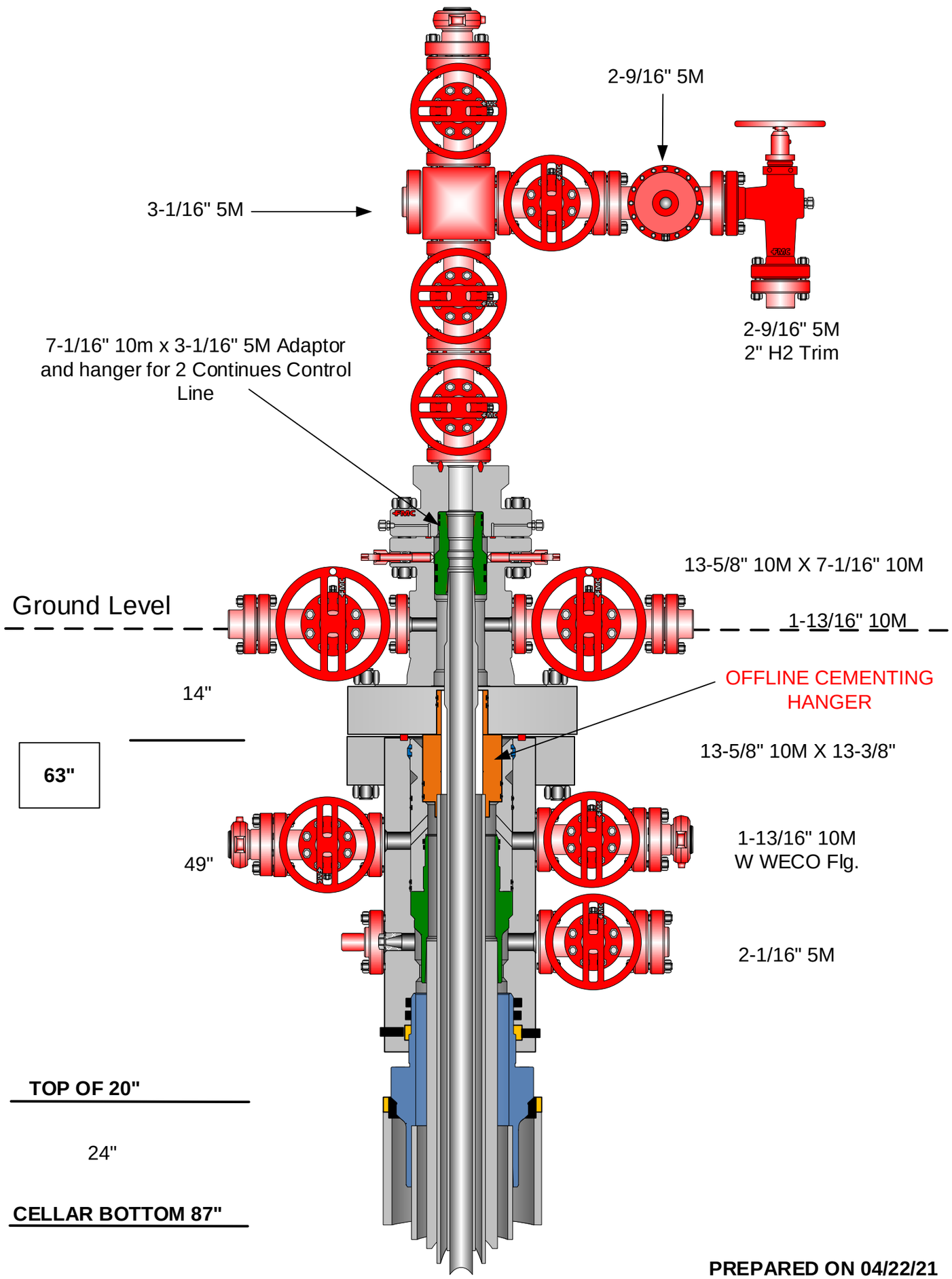
Choke Manifold Diagram
Vaca Draw 20-17 Federal 74H
Cimarex Energy Co.

CACTUS FOR SERVICE
WEARBUSHING
IN CASING HEAD &
CASING SPOOL

LEA CO., NM

Vaca Draw 20-17 Federal 74H

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	1020	1020	13-3/8"	48.00	H-40	ST&C	1.67	3.92	6.58
12 1/4	0	4920	4920	9-5/8"	40.00	HCK-55	LT&C	1.45	1.50	2.85
8 3/4	0	10459	10459	7"	26.00	P-110	LT&C	1.27	2.03	2.42
8 3/4	10459	11209	10996	7"	26.00	P-110	BT&C	1.21	1.94	59.45
6	9459	21154	11040	4-1/2"	11.60	P-110	BT&C	1.47	2.07	20.01
						BLM Minimum Safety Factor		1.125	1	1.6 Dry 1.8 Wet



PREPARED ON 04/22/21

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

CONDITIONS

Action 128929

CONDITIONS

Operator: CIMAREX ENERGY CO. 600 N. Marienfeld Street Midland, TX 79701	OGRID: 215099
	Action Number: 128929
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
pkautz	PREVIOUS COA's APPLY	7/28/2022