

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

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-107-B
Revised August 1, 2011

OIL CONSERVATION DIVISION

1220 S. St Francis Drive
Santa Fe, New Mexico 87505

Submit the original
application to the Santa Fe
office with one copy to the
appropriate District Office.

IDENTICAL

APPLICATION FOR SURFACE COMMINGLING (~~DIVERSE OWNERSHIP~~)

OPERATOR NAME: _____

OPERATOR ADDRESS: _____

APPLICATION TYPE:

☐ Pool Commingling ☐ Lease Commingling ☐ Pool and Lease Commingling ☐ Off-Lease Storage and Measurement (Only if not Surface Commingled)

LEASE TYPE: ☐ Fee ☐ State ☐ Federal

Is this an Amendment to existing Order? ☐ Yes ☐ No If "Yes", please include the appropriate Order No. _____
Have the Bureau of Land Management (BLM) and State Land office (SLO) been notified in writing of the proposed commingling
☐ Yes ☐ No

(A) POOL COMMINGLING

Please attach sheets with the following information

(1) Pool Names and Codes	Gravities / BTU of Non-Commingled Production	Calculated Gravities / BTU of Commingled Production		Calculated Value of Commingled Production	Volumes

- (2) Are any wells producing at top allowables? ☐ Yes ☐ No
(3) Has all interest owners been notified by certified mail of the proposed commingling? ☐ Yes ☐ No.
(4) Measurement type: ☐ Metering ☐ Other (Specify)
(5) Will commingling decrease the value of production? ☐ Yes ☐ No If "yes", describe why commingling should be approved

(B) LEASE COMMINGLING

Please attach sheets with the following information

- (1) Pool Name and Code.
(2) Is all production from same source of supply? ☐ Yes ☐ No
(3) Has all interest owners been notified by certified mail of the proposed commingling? ☐ Yes ☐ No
(4) Measurement type: ☐ Metering ☐ Other (Specify)

(C) POOL and LEASE COMMINGLING

Please attach sheets with the following information

- (1) Complete Sections A and E.

(D) OFF-LEASE STORAGE and MEASUREMENT

Please attached sheets with the following information

- (1) Is all production from same source of supply? ☐ Yes ☐ No
(2) Include proof of notice to all interest owners.

(E) ADDITIONAL INFORMATION (for all application types)

Please attach sheets with the following information

- (1) A schematic diagram of facility, including legal location.
(2) A plat with lease boundaries showing all well and facility locations. Include lease numbers if Federal or State lands are involved.
(3) Lease Names, Lease and Well Numbers, and API Numbers API#s continued (44357), (44358), (46113), (46114), (46115), (46116), (46117), (46118), (46119), (46120), (46121), (47961), (46160), (46161), & (46122)

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE: Fatima Vasquez TITLE: _____ DATE: _____

TYPE OR PRINT NAME _____ TELEPHONE NO.: _____

E-MAIL ADDRESS: _____

Application for Pool and Lease Commingling at Common Central Tank Battery

CTB Equipment:	2	Oil Tanks
	2	Water Tanks
	1	Gun Barrel
	1	Gas Sales Meter
	19	Allocation Gas Meters
	19	Micro Motion Coriolis Meter
	19	Water Turbine Meter
	4	SWD Pumps

Process & Flow Descriptions:

The Vaca Draw 20-17 West CTB is located in the SW quarter-quarter of Sec. 20, 25S, 33E on Federal Lease NMNM026394 in Lea County, New Mexico.

Production from each of the referenced wells enters its own individual separator. Each separator has its own Coriolis meter for oil, turbine meter for water, and orifice meter for gas.

After separation, each oil stream flows through the commingled heater treater and then to the tanks before being measured by a LACT unit. The Lact unit will serve as the oil FMP.

The gas from each separator flow through its own allocation orifice meter then flows to the gas FMP. One well will be producing into the test equipment at all times.

Allocation Method:

Oil Production: Oil will be allocated daily to the well based upon the daily Coriolis meter volume. The meter is a Micro Motion Coriolis meter (SN____). Each well will have a daily factor that is a percentage of the total Coriolis volume for all referenced wells. The factor obtained from the test meter will be used to allocate the oil production volumes sold through the LACT.

Gas Production: Gas will be allocated daily to the well based upon the daily allocation gas meter volume. The meter is an orifice meter (SN___). Each well will have a daily factor that is a percentage of the total allocation meter volume for all referenced wells. The factor obtained from each allocation meter will be used to allocate the gas sales volumes sold through the gas sales meter. The meters will be calibrated on a regulator basis per API, NMOCD, and BLM specifications.

Additional Application Components:

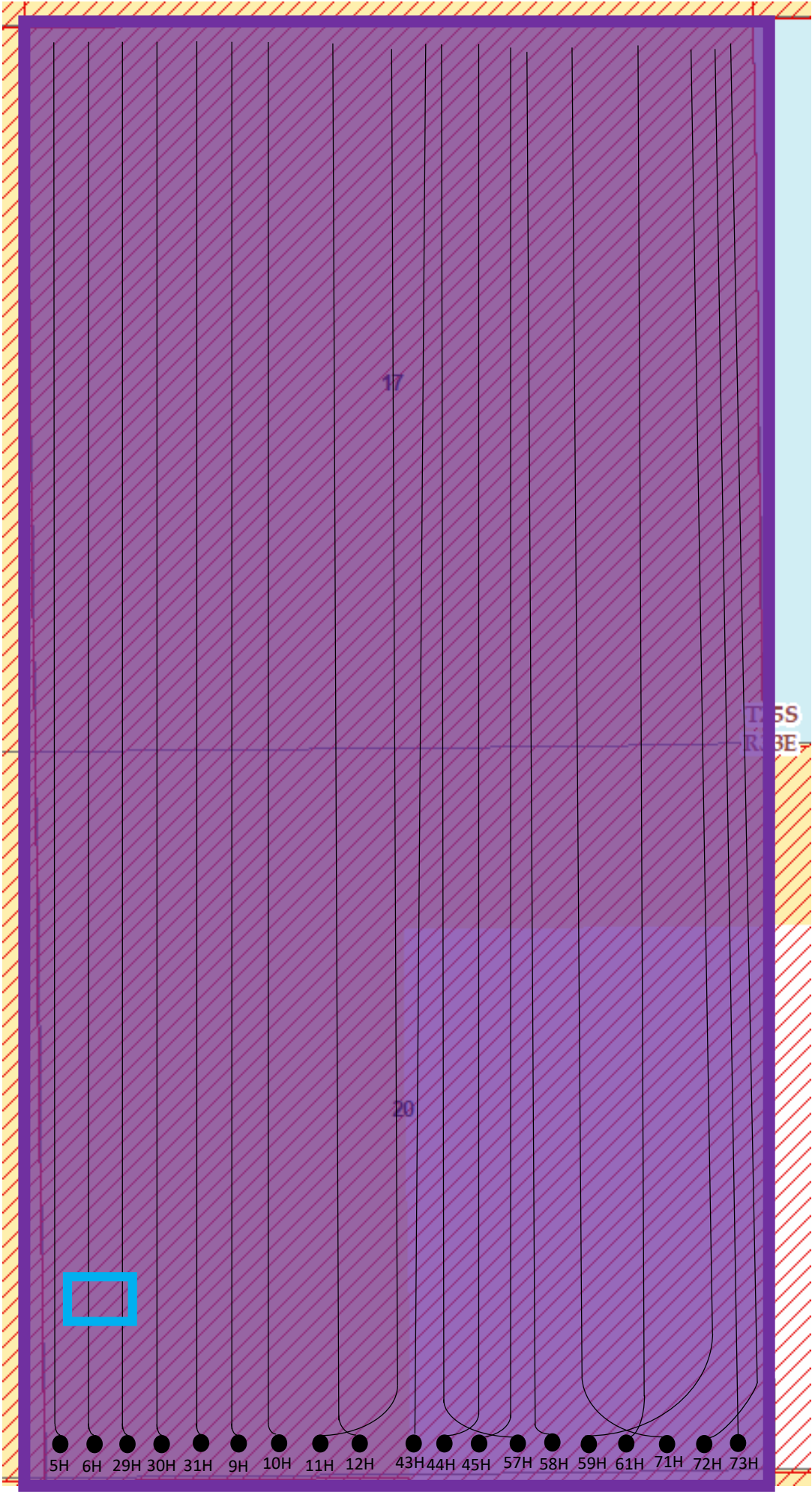
The flow of production details are outlined on the enclosed facility diagram.

Commingling the production is the most effective means of producing the reserves. Cimarex understands the requested approval will not constitute the granting of any right of way or construction rights not granted by the lease instrument.

Future Additions:

Pursuant to Statewide rule 19.15.12.10 (c) (4)(g), Cimarex Energy Co. respectfully requests the option to include additional pools or leases within the defined parameters set forth in the order for future additions.

Vaca Draw 20-17
Sections 17 & 20, T25S, 33E

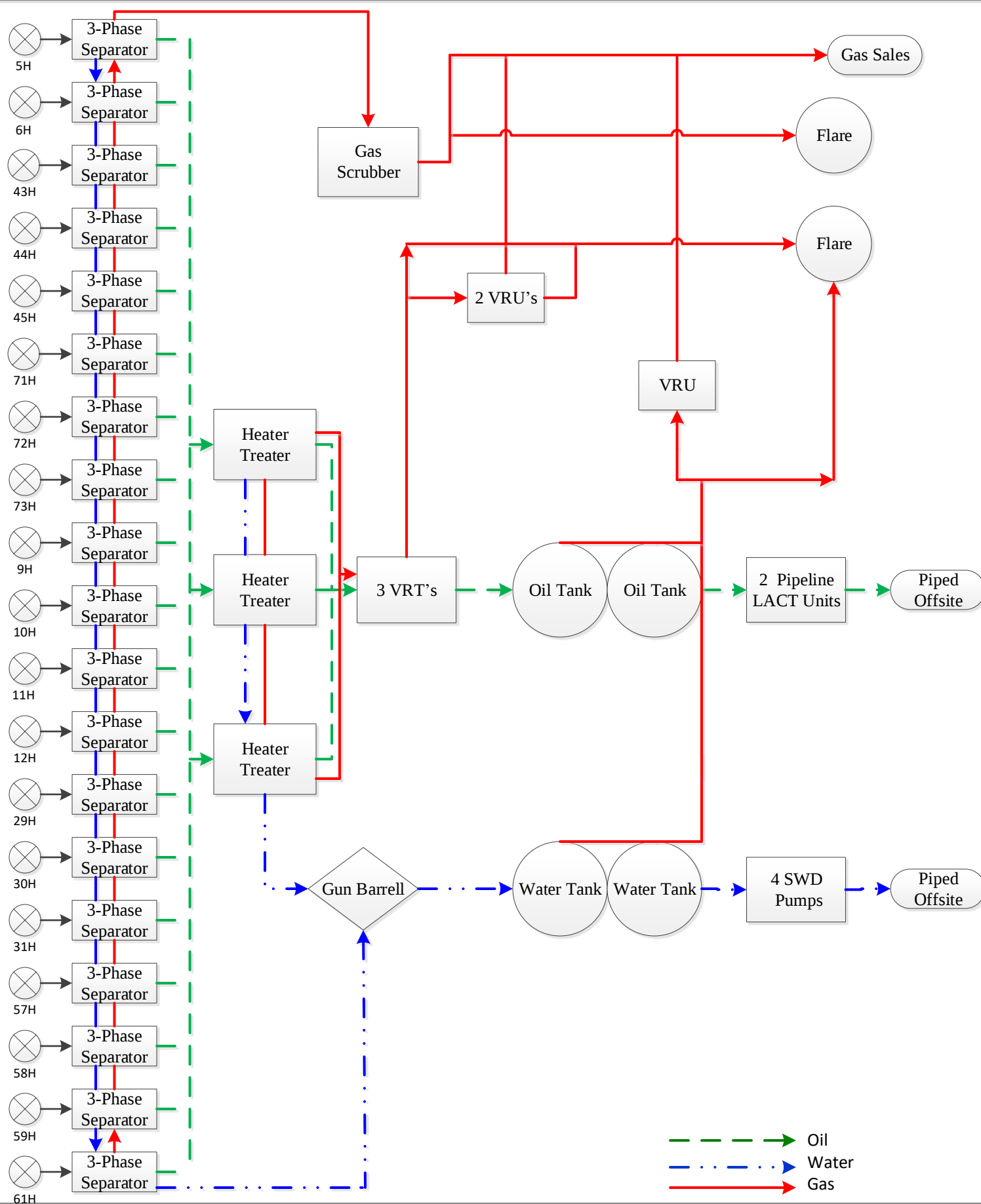


NMNM026394 – 2560 acres



Vaca Draw West CTB

PROCESS FLOW DIAGRAM



Vaca Draw 20-17 Federal 5H, 6H, 9H-12H, 29H-31H, 43H-45H, 57H-59H, 61H, 71H-73H Facility
Eddy County, NM



**Economic Justification Worksheet
Vaca Draw 20-17 Federal**

Vaca Draw Wolfcamp										
Well Name		BOPD	Gravity	Bbl price	Value	MCPD	2.56	MCF price	Value	Comment
Vaca Draw 20-17 Federal #57H	WC-025 G-09 S253309P; UPR WOLFCAMP	940	45.6	\$ 59.89	\$ 56,294.72	2100	1050	\$ 2.00	\$ 4,200.00	FORECAST
Vaca Draw 20-17 Federal #58H	WC-025 G-09 S253309P; UPR WOLFCAMP	940	45.6	\$ 59.89	\$ 56,294.72	2100	1050	\$ 2.00	\$ 4,200.00	FORECAST
Vaca Draw 20-17 Federal #59H	WC-025 G-09 S253309P; UPR WOLFCAMP	940	45.6	\$ 59.89	\$ 56,294.72	2100	1050	\$ 2.00	\$ 4,200.00	FORECAST
Vaca Draw 20-17 Federal #61H	WC-025 G-09 S253309P; UPR WOLFCAMP	940	45.6	\$ 59.89	\$ 56,294.72	2820	1050	\$ 2.00	\$ 5,640.00	FORECAST
Total		3760	45.56	\$ 59.89	\$ 225,178.88	9120	1050	\$ 2.00	\$ 18,240.00	
Vaca Draw Lower Bone Spring										
Well Name		BOPD	Gravity	Bbl price	Value	MCPD	Dry BTU	MCF price	Value	Comment
Vaca Draw 20-17 Federal #9H	WC-025 G-08 S253235G; LWR BS	935	42.9	\$ 60.00	\$ 56,100.00	1810	1050	\$ 2.00	\$ 3,620.00	FORECAST
Vaca Draw 20-17 Federal #10H	WC-025 G-08 S253235G; LWR BS	621	43.5	\$ 60.00	\$ 37,260.00	1167	1050	\$ 2.00	\$ 2,334.00	FORECAST
Vaca Draw 20-17 Federal #11H	WC-025 G-08 S253235G; LWR BS	935	42.9	\$ 60.00	\$ 56,100.00	1810	1050	\$ 2.00	\$ 3,620.00	FORECAST
Vaca Draw 20-17 Federal #12H	WC-025 G-08 S253235G; LWR BS	935	42.9	\$ 60.00	\$ 56,100.00	1810	1050	\$ 2.00	\$ 3,620.00	FORECAST
Total		3426	43.033319	\$ 60.00	\$ 205,560.00	6597	1050	\$ 2.00	\$ 13,194.00	
Vaca Draw Upper Bone Spring										
Well Name		BOPD	Gravity	Bbl Price	Value	MCPD	Dry BTU	MCF price	Value	Comment
Vaca Draw 20-17 Federal #5H	WC-025 G-06 S253329D; UPR BS	280	43.5	\$ 60.00	\$ 16,800.00	1600	1050	\$ 2.00	\$ 3,200.00	
Vaca Draw 20-17 Federal #6H	WC-025 G-06 S253329D; UPR BS	150	43.5	\$ 60.00	\$ 9,000.00	2300	1050	\$ 2.00	\$ 4,600.00	
Vaca Draw 20-17 Federal #29H	WC-025 G-06 S253329D; UPR BS	935	42.9	\$ 60.00	\$ 56,100.00	1810	1050	\$ 2.00	\$ 3,620.00	FORECAST
Vaca Draw 20-17 Federal #30H	WC-025 G-06 S253329D; UPR BS	621	43.5	\$ 60.00	\$ 37,260.00	1167	1050	\$ 2.00	\$ 2,334.00	FORECAST
Vaca Draw 20-17 Federal #31H	WC-025 G-06 S253329D; UPR BS	935	42.9	\$ 60.00	\$ 56,100.00	1810	1050	\$ 2.00	\$ 3,620.00	FORECAST
Vaca Draw 20-17 Federal #43H	WC-025 G-06 S253329D; UPR BS	250	43.5	\$ 60.00	\$ 15,000.00	2500	1050	\$ 2.00	\$ 5,000.00	
Vaca Draw 20-17 Federal #44H	WC-025 G-06 S253329D; UPR BS	270	43.5	\$ 60.00	\$ 16,200.00	1800	1050	\$ 2.00	\$ 3,600.00	
Vaca Draw 20-17 Federal #45H	WC-025 G-06 S253329D; UPR BS	160	43.5	\$ 60.00	\$ 9,600.00	2500	1050	\$ 2.00	\$ 5,000.00	
Vaca Draw 20-17 Federal #71H	WC-025 G-06 S253329D; UPR BS	150	43.5	\$ 60.00	\$ 9,000.00	1600	1050	\$ 2.00	\$ 3,200.00	
Vaca Draw 20-17 Federal #72H	WC-025 G-06 S253329D; UPR BS	200	43.5	\$ 60.00	\$ 12,000.00	2000	1050	\$ 2.00	\$ 4,000.00	
Vaca Draw 20-17 Federal #73H	WC-025 G-06 S253329D; UPR BS	280	43.5	\$ 60.00	\$ 16,800.00	1500	1050	\$ 2.00	\$ 3,000.00	
Total		4231	43.2	\$ 60.00	\$ 253,860.00	20587	1050	2.000	\$ 41,174.00	
Grand total:		11417	43.945025	\$ 59.96	\$ 684,598.88	36304	1050	\$ 2.00	\$ 72,608.00	

Combined Production:	BOPD	Weighted Avg	Bbl Price	Value	MCFPD	Dry BTU	MCF price	Value
ALL WELLS in SECTION 17 & 20	11417	43.945025	\$ 60.00	\$ 685,020.00	36304	1050	\$ 2.00	\$ 72,608.00

	Vaca Draw West CTB Commingle Service List
OWNER	CERTIFIED TRACKING #
MICHAEL A BAKER WELLS FARGO BANK / IRREV TRUST PO BOX 40909 AUSTIN, TX 78704	9414 8118 9876 5897 4790 32
SARAH ANNE BAKER WELLS FARGO BANK / IRREV TRUST PO BOX 40909 AUSTIN, TX 78704	9414 8118 9876 5897 4790 70
BURNETT PARTNERS PO BOX 50474 MIDLAND, TX 79710	9414 8118 9876 5897 4794 14
EOG RESOURCES INC ATTN: DAVID DEAL PO BOX 840321 DALLAS, TX 75284-0321	9414 8118 9876 5897 4794 52
KEN & GERI GRIFFIN PROPERTIES LP PO BOX 310 INGRAM, TX 78025	9414 8118 9876 5897 4794 69
BRENT JEREMY HONEYMAN 26 MEADOW BROOK PL THE WOODLANDS, TX 77382	9414 8118 9876 5897 4794 21
JEB CORY HONEYMAN 2890 FOREST DRIVE CELINA, TX 75009	9414 8118 9876 5897 4794 07
LESLIE ROBERT HONEYMAN TRUST LANELL JOY HONEYMAN 406 SKYWOOD CIRCLE MIDLAND, TX 79705	9414 8118 9876 5897 4794 90
MARION G LAUGHLIN MILLER ESTATE MARION SULLIVAN SCHREINER 4803 SIERRA MADRE DR SAN ANTONIO, TX 78233	9414 8118 9876 5897 4794 45

KIM E LAWSON 4816 ROSEWOOD DR MIDLAND, TX 79707	9414 8118 9876 5897 4794 38
MAP2004-OK AN OKLAHOMA GENERAL PARTNERSHIP PO BOX 269031 OKLAHOMA CITY, OK 73126	9414 8118 9876 5897 4794 76
OXY USA INC PO BOX 841803 DALLAS, TX 75284-1803	9414 8118 9876 5897 4795 13
SANTA ELENA MINERALS IV LP PO BOX 2063 MIDLAND, TX 79702	9414 8118 9876 5897 4795 51
JAMES D PRESLAR II PO BOX 10902 MIDLAND, TX 79702	9414 8118 9876 5897 4795 68
VAN TETTLETON PO BOX 10909 MIDLAND, TX 79702	9414 8118 9876 5897 4795 20
CHARLES R WIGGINS PO BOX 10862 MIDLAND, TX 79702	9414 8118 9876 5897 4795 06



CIMAREX ENERGY COMPANY
600 N. Marienfeld Street
Suite 600
Midland, TX 79701

March 9, 2021

Attn: State of New Mexico Oil Conservation Division

Subject: Surface Pool Commingling Application

To whom it may concern:

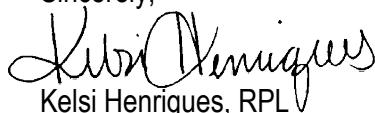
This letter serves to notice you that the ownership of the following wells is identical in working, royalty and overriding royalty interest and percentages.

API	Well Name	Well Number	Pool Name	Location	Status
30-025-44150	VACA DRAW 20 17 FEDERAL	#005H	[97994] WC-025 G-06 S253329D; UPR BONE SPRIN	M-20-25S-33E	Active
30-025-44151	VACA DRAW 20 17 FEDERAL	#006H	[97994] WC-025 G-06 S253329D; UPR BONE SPRIN	M-20-25S-33E	Active
30-025-44360	VACA DRAW 20 17 FEDERAL	#009H	[97994] WC-025 G-06 S253329D; UPR BONE SPRIN	N-20-25S-33E	New
30-025-44356	VACA DRAW 20 17 FEDERAL	#010H	[97994] WC-025 G-06 S253329D; UPR BONE SPRIN	N-20-25S-33E	New
30-025-44357	VACA DRAW 20 17 FEDERAL	#011H	[97994] WC-025 G-06 S253329D; UPR BONE SPRIN	N-20-25S-33E	New
30-025-44358	VACA DRAW 20 17 FEDERAL	#012H	[97994] WC-025 G-06 S253329D; UPR BONE SPRIN	N-20-25S-33E	New
30-025-46113	VACA DRAW 20 17 FEDERAL	#029H	[97994] WC-025 G-06 S253329D; UPR BONE SPRIN	M-20-25S-33E	New
30-025-46114	VACA DRAW 20 17 FEDERAL	#030H	[97994] WC-025 G-06 S253329D; UPR BONE SPRIN	M-20-25S-33E	New
30-025-46115	VACA DRAW 20 17 FEDERAL	#031H	[97994] WC-025 G-06 S253329D; UPR BONE SPRIN	M-20-25S-33E	New
30-025-46116	VACA DRAW 20 17 FEDERAL	#043H	[97994] WC-025 G-06 S253329D; UPR BONE SPRIN	O-20-25S-33E	Active
30-025-46117	VACA DRAW 20 17 FEDERAL	#044H	[97994] WC-025 G-06 S253329D; UPR BONE SPRIN	O-20-25S-33E	Active

30-025-46118	VACA DRAW 20 17 FEDERAL	#045H	[97994] WC-025 G-06 S253329D; UPR BONE SPRIN	O-20-25S-33E	Active
30-025-46119	VACA DRAW 20 17 FEDERAL	#057H	[98180] WC-025 G-09 S253309P; Upr Wolfcamp	P-20-25S-33E	New
30-025-46120	VACA DRAW 20 17 FEDERAL	#058H	[98180] WC-025 G-09 S253309P; Upr Wolfcamp	P-20-25S-33E	New
30-025-46121	VACA DRAW 20 17 FEDERAL	#059H	[98180] WC-025 G-09 S253309P; Upr Wolfcamp	P-20-25S-33E	New
30-025-47961	VACA DRAW 20 17 FEDERAL	#061H	[98180] WC-025 G-09 S253309P; Upr Wolfcamp	P-20-25S-33E	New
30-025-46160	VACA DRAW 20 17 FEDERAL	#071H	[97994] WC-025 G-06 S253329D; UPR BONE SPRIN	P-20-25S-33E	Active
30-025-46161	VACA DRAW 20 17 FEDERAL	#072H	[97994] WC-025 G-06 S253329D; UPR BONE SPRIN	P-20-25S-33E	Active
30-025-46122	VACA DRAW 20 17 FEDERAL	#073H	[97994] WC-025 G-06 S253329D; UPR BONE SPRIN	P-20-25S-33E	Active

I certify that this information is true and correct to the best of my knowledge.

Sincerely,



Kelsi Henriques, RPL
Landman

khenriques@cimarex.com

Well Name	Well Number	US Well Number	Lease Number	Case Number	Operator
VACA DRAW 20-	29H	3002546113	NMNM26394	NMNM26394	CIMAREX
VACA DRAW 20-	9H	3002544360	NMNM26394	NMNM26394	CIMAREX
VACA DRAW 20-	45H	3002546118	NMNM26394	NMNM26394	CIMAREX
VACA DRAW 20-	57H	3002546119	NMnm026394	NMnm026394	CIMAREX
VACA DRAW 20-	72H	3002546161	NMNM26394	NMNM26394	CIMAREX
VACA DRAW 20-	73H	3002546122	NMNM26394	NMNM26394	CIMAREX
VACA DRAW 20-	11H	3002544357	NMNM26394	NMNM26394	CIMAREX
VACA DRAW 20-	10H	3002544356	NMNM26394	NMNM26394	CIMAREX
VACA DRAW 20-	44H	3002546117	NMNM26394	NMNM26394	CIMAREX
VACA DRAW 20-	58H	3002546120	NMNM26394	NMNM26394	CIMAREX
VACA DRAW 20-	59H	3002546121	NMNM26394	NMNM26394	CIMAREX
VACA DRAW 20-	5H	3002544150	NMNM26394	NMNM26394	CIMAREX
VACA DRAW 20-	43H	3002546116	NMNM26394	NMNM26394	CIMAREX
VACA DRAW 20-	30H	3002546114	NMNM26394	NMNM26394	CIMAREX
VACA DRAW 20-	31H	3002546115	NMNM26394	NMNM26394	CIMAREX
VACA DRAW 20-	6H	3002544151	NMNM26394	NMNM26394	CIMAREX
VACA DRAW 20-	71H	3002546160	NMNM26394	NMNM26394	CIMAREX
VACA DRAW 20-	12H	3002544358	NMNM26394	NMNM26394	CIMAREX

Notice of Intent

Type of Submission: Notice of Intent

Type of Action Commingling (Surface)

Date Sundry Submitted: 05/16/2021

Time Sundry Submitted: 07:37

Date proposed operation will begin: 06/30/2021

Procedure Description: Cimarex Energy respectfully requests approval to surface commingle oil, gas, and water production according to 43 CFR 3173.14 (a)(1)(i) at the Vaca Draw 20-17 Federal facility. The Commingling and Allocation Approval (CAA) will not negatively affect the royalty revenue of the federal government. Cimarex will utilize electronic automated measurements at the wellhead to measure oil, gas, and water separately from each well prior to commingling the production. The non-FMP allocation meters will meet BLM FMP regulations 43 CFR 3174 and 43 CFR 3175. Cimarex proposes that all leases/wells including in the application are capable of production in paying quantities. Please see Exhibit 6 for well test information for each well or anticipated production information for future wells. The Facility Measurement Point (FMP) is located on lease at the Vaca Draw 20-17 Federal facility located in the SWSW of 20-25S-33E Lea County, NM, BLM lease number NMNM026394. The Vaca Draw 20-17 Federal facility was approved for construction in the Vaca Draw 20-17 Federal #5H APD and no additional disturbance is required for the commingling activities. Attachments: Exhibit 1 - Lease Table Exhibit 2 - MASS Serial Register Page Exhibit 3 - Allocation Methodology Example Exhibit 4 - Allocation Methodology Example Details Exhibit 5 - Lease map Exhibit 6 - Well Test Information NMOCD Approval - pending approval

Surface Disturbance

Is any additional surface disturbance proposed?: No

NOI Attachments**Procedure Description**

Exhibit_3_Vaca_Draw_Alloc_Methodology_20210516193631.pdf

Exhibit_6_Vaca_Draw_Well_Test_Data__20210513145829.pdf

Exhibit_5_Vaca_Draw_Lease_Map_20210513145815.pdf

Exhibit_4_Vaca_Draw_Alloc_Methodology_Details_20210513145757.pdf

Exhibit_2_Vaca_Draw_MASS_Ser_Reg_Page__20210513145730.pdf

Exhibit_1__Vaca_Draw_Lease_Table__20210513145720.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: TERRI STATHEM

Signed on: MAY 16, 2021 07:36 PM

Name: CIMAREX ENERGY COMPANY

Title: Mngr Regulatory Compliance

Street Address: 600 N. Marienfeld St., Suite 600

City: Midland

State: TX

Phone: (432) 620-1936

Email address: tstathem@cimarex.com

Field Representative

Representative Name:

Street Address:

City:

State:

Zip:

Phone:

Email address:

BLM Point of Contact

BLM POC Name: Jonathon W Shepard

BLM POC Title: Petroleum Engineer

BLM POC Email Address: jshepard@blm.gov

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

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-44150		² Pool Code 97994		³ Pool Name Wildcat; Upper Bone Spring	
⁴ Property Code 319775		⁵ Property Name VACA DRAW 20-17 FEDERAL		⁶ Well Number 5H	
⁷ OGRID No. 215099		⁸ Operator Name CIMAREX ENERGY CO.		⁹ Elevation 3423.2'	

" Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	20	25S	33E		390	SOUTH	610	WEST	LEA

" Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	17	25S	33E		330	NORTH	384	WEST	LEA

¹² Dedicated Acres 320	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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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 (SURFACE HOLE LOCATION)	
LATITUDE = 32°06'35.06" (32.109739)	
LONGITUDE = 103°36'02.46" (103.600683)	
NAD 27 (SURFACE HOLE LOCATION)	
LATITUDE = 32°06'34.61" (32.109614)	
LONGITUDE = 103°36'00.76" (103.600211)	
STATE PLANE NAD 83 (N.M. EAST)	
N: 404430.38 E: 768181.86	
STATE PLANE NAD 27 (N.M. EAST)	
N: 404372.59 E: 726995.71	

NAD 83 (BOTTOM HOLE LOCATION)	
LATITUDE = 32°08'13.01" (32.136947)	
LONGITUDE = 103°36'05.75" (103.601597)	
STATE PLANE NAD 83 (N.M. EAST)	
N: 414326.97 E: 767831.97	

" 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.

Signature: *Fatima Vasquez* Date: 09/25/2018

Printed Name: **Fatima Vasquez**

E-mail Address: **fvasquez@cimarex.com**

" 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.

January 19, 2017

Date of Survey

Signature and Seal of Professional Surveyor:

Certificate Number:

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

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30025-44151	² Pool Code 97994	³ Pool Name WC-025 G-06 S253329D; Wildcat Upper Bone Spring
⁴ Property Code 319775	⁵ Property Name VACA DRAW 20-17 FEDERAL	⁶ Well Number 6H
⁷ OGRID No. 215099	⁸ Operator Name CIMAREX ENERGY CO.	⁹ Elevation 3423.2'

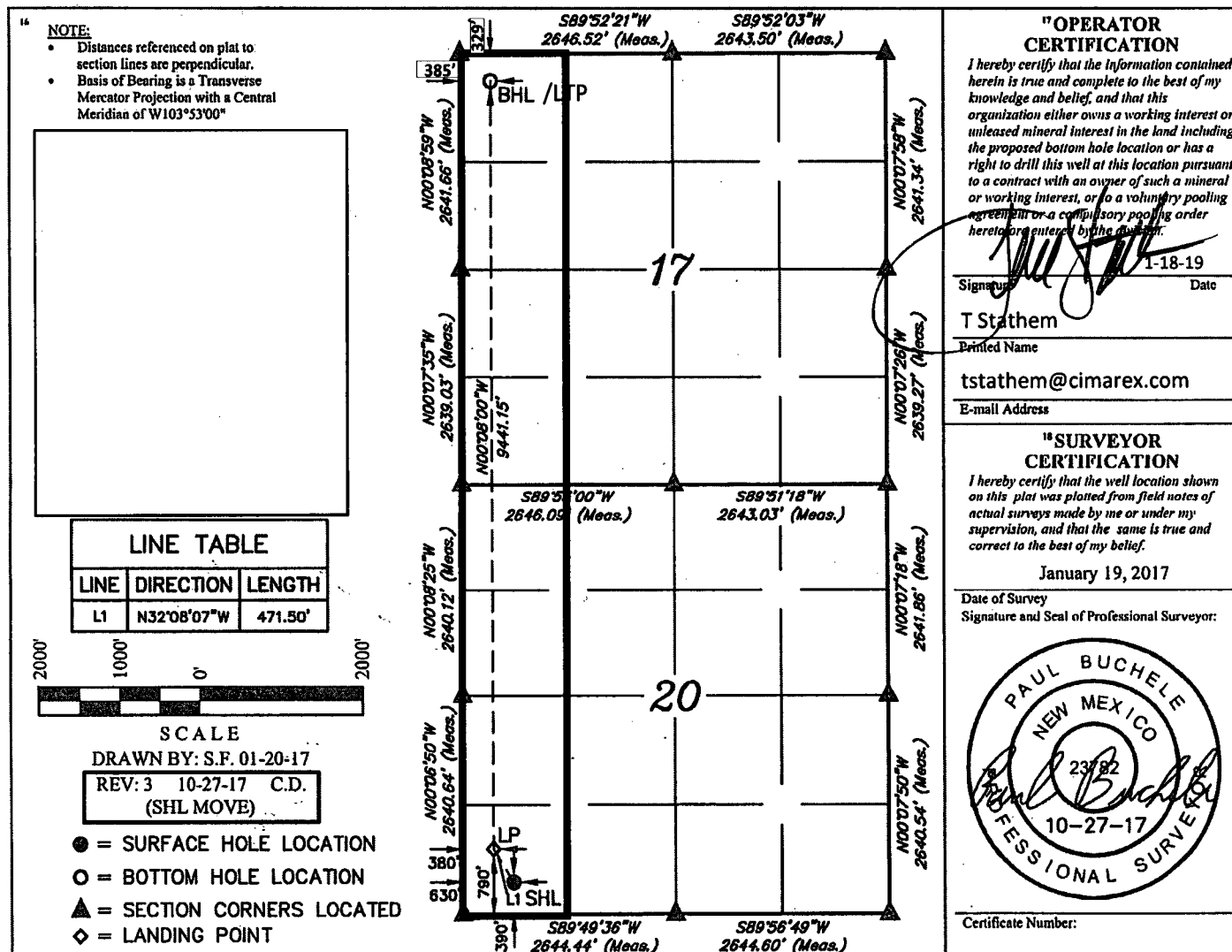
¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	20	25S	33E		390	SOUTH	630	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
D	17	25S	33E		330	NORTH	385	WEST	LEA
¹² Dedicated Acres 320	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.						

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.



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

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☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-44360	² Pool Code 97994	³ Pool Name Wildcat Bone Spring
⁴ Property Code 319775	⁵ Property Name VACA DRAW 20-17 FEDERAL	⁶ Well Number 9H
⁷ GRID No. 215099	⁸ Operator Name CIMAREX ENERGY CO.	⁹ Elevation 3417.2'

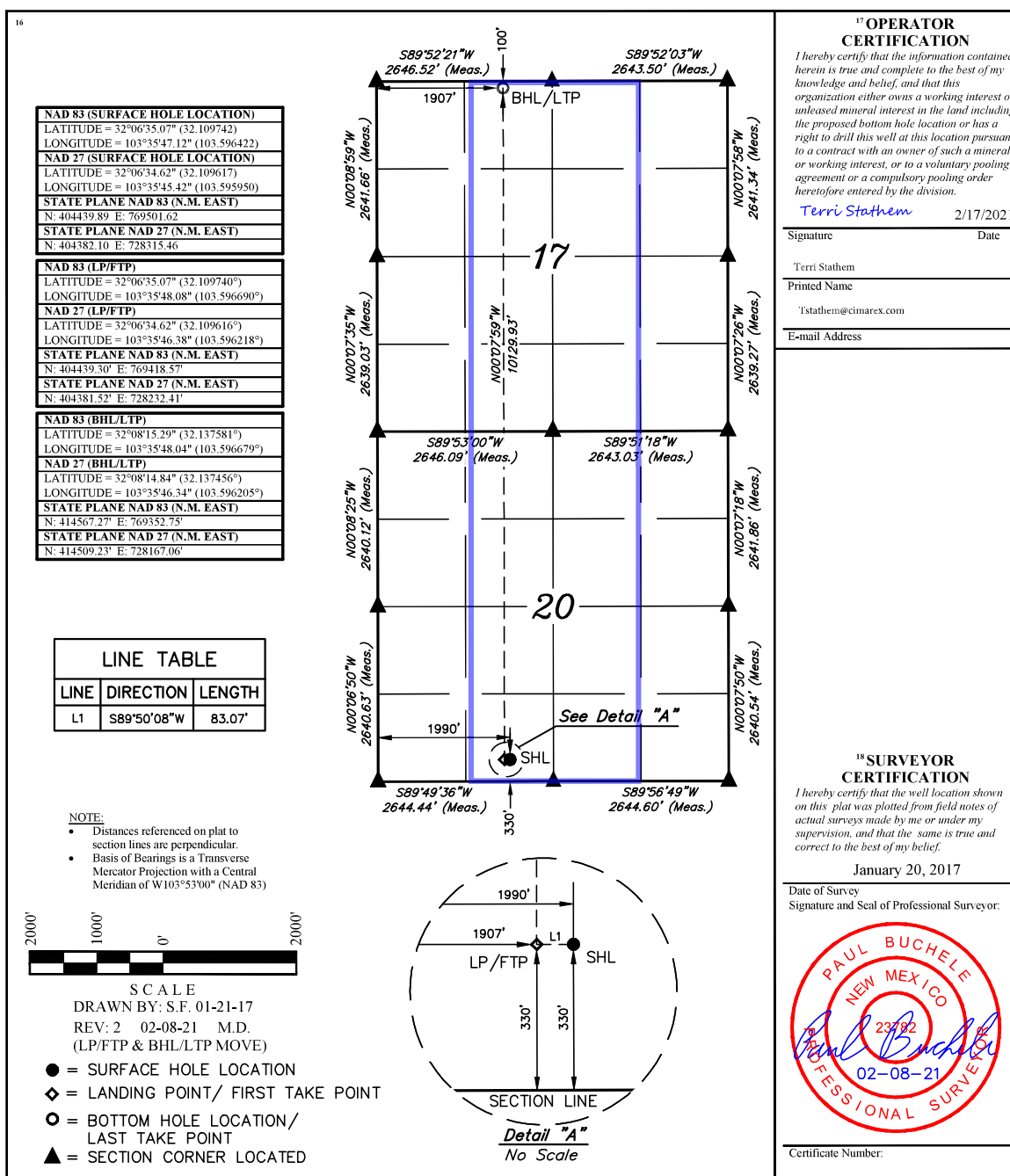
¹⁰Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	20	25S	33E		330	SOUTH	1990	WEST	LEA

¹¹Bottom 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
C	17	25S	33E		100	NORTH	1907	WEST	LEA
¹² Dedicated Acres 640	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.						

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☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-44356	² Pool Code 97994	³ Pool Name Wildcat Bone Spring
⁴ Property Code 319775	⁵ Property Name VACA DRAW 20-17 FEDERAL	⁶ Well Number 10H
⁷ OGRID No. 215099	⁸ Operator Name CIMAREX ENERGY CO.	⁹ Elevation 3417.1'

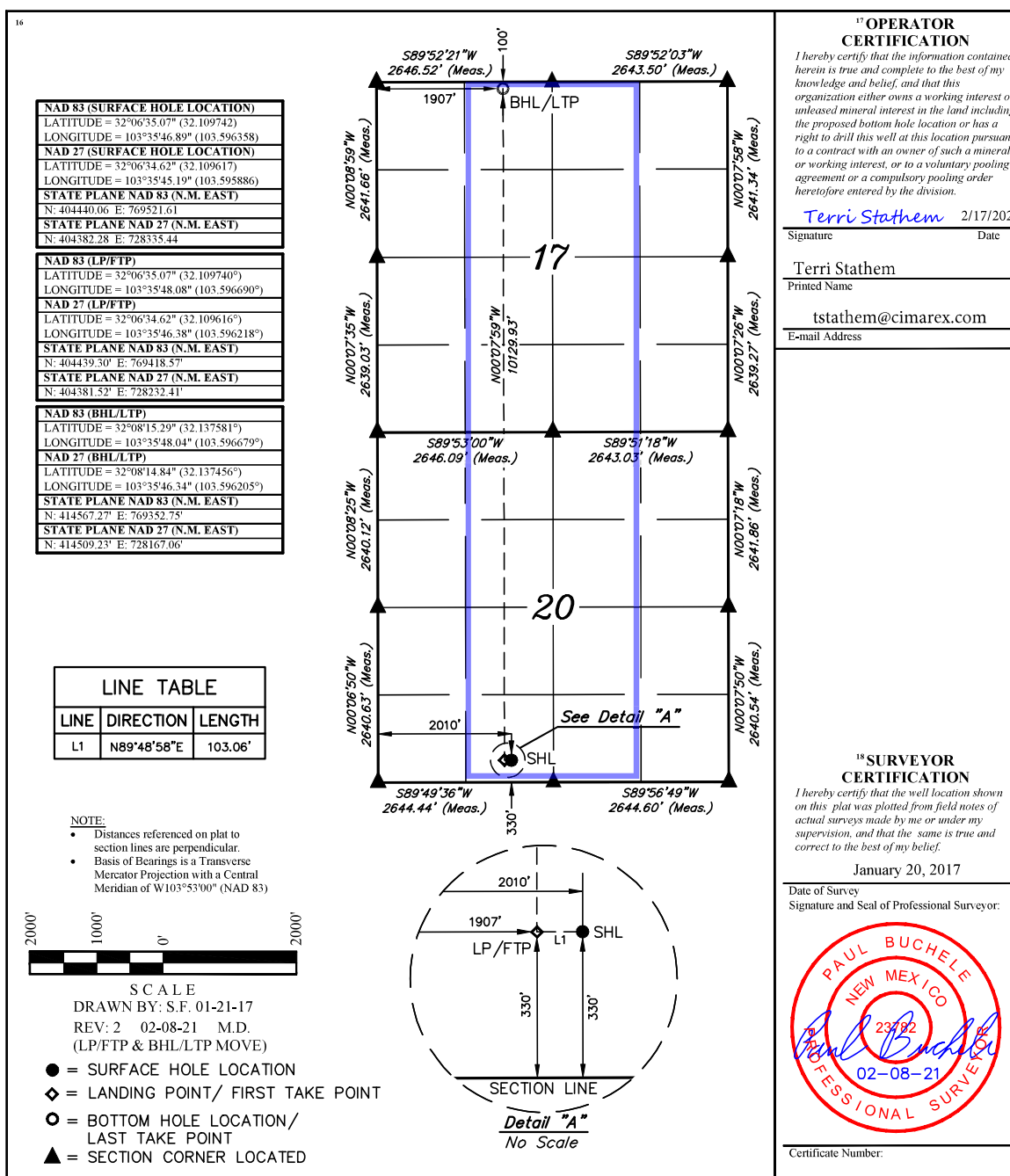
¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	20	25S	33E		330	SOUTH	2010	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
C	17	25S	33E		100	NORTH	1907	WEST	LEA
¹² Dedicated Acres 640	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.						

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☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-44357	² Pool Code 97994	³ Pool Name Wildcat BoneSpring
⁴ Property Code 319775	⁵ Property Name VACA DRAW 20-17 FEDERAL	⁶ Well Number 11H
⁷ OGRID No. 215099	⁸ Operator Name CIMAREX ENERGY CO.	⁹ Elevation 3417.0'

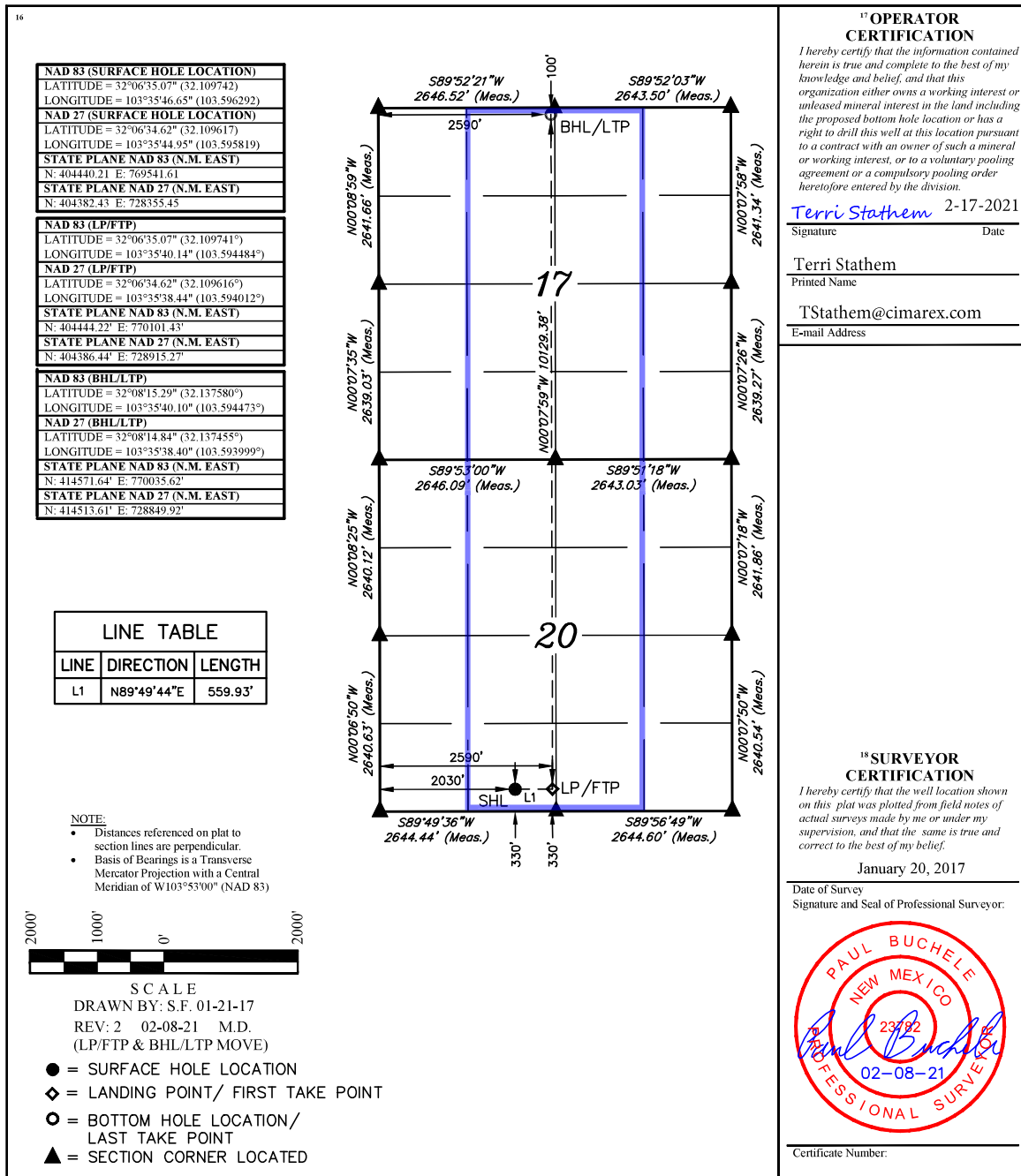
¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	20	25S	33E		330	SOUTH	2030	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
C	17	25S	33E		100	NORTH	2590	WEST	LEA
¹² Dedicated Acres 640	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.						

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☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-44358	² Pool Code 97994	³ Pool Name Wildcat Bone Spring
⁴ Property Code 319775	⁵ Property Name VACA DRAW 20-17 FEDERAL	⁶ Well Number 12H
⁷ OGRID No. 215099	⁸ Operator Name CIMAREX ENERGY CO.	⁹ Elevation 3417.0'

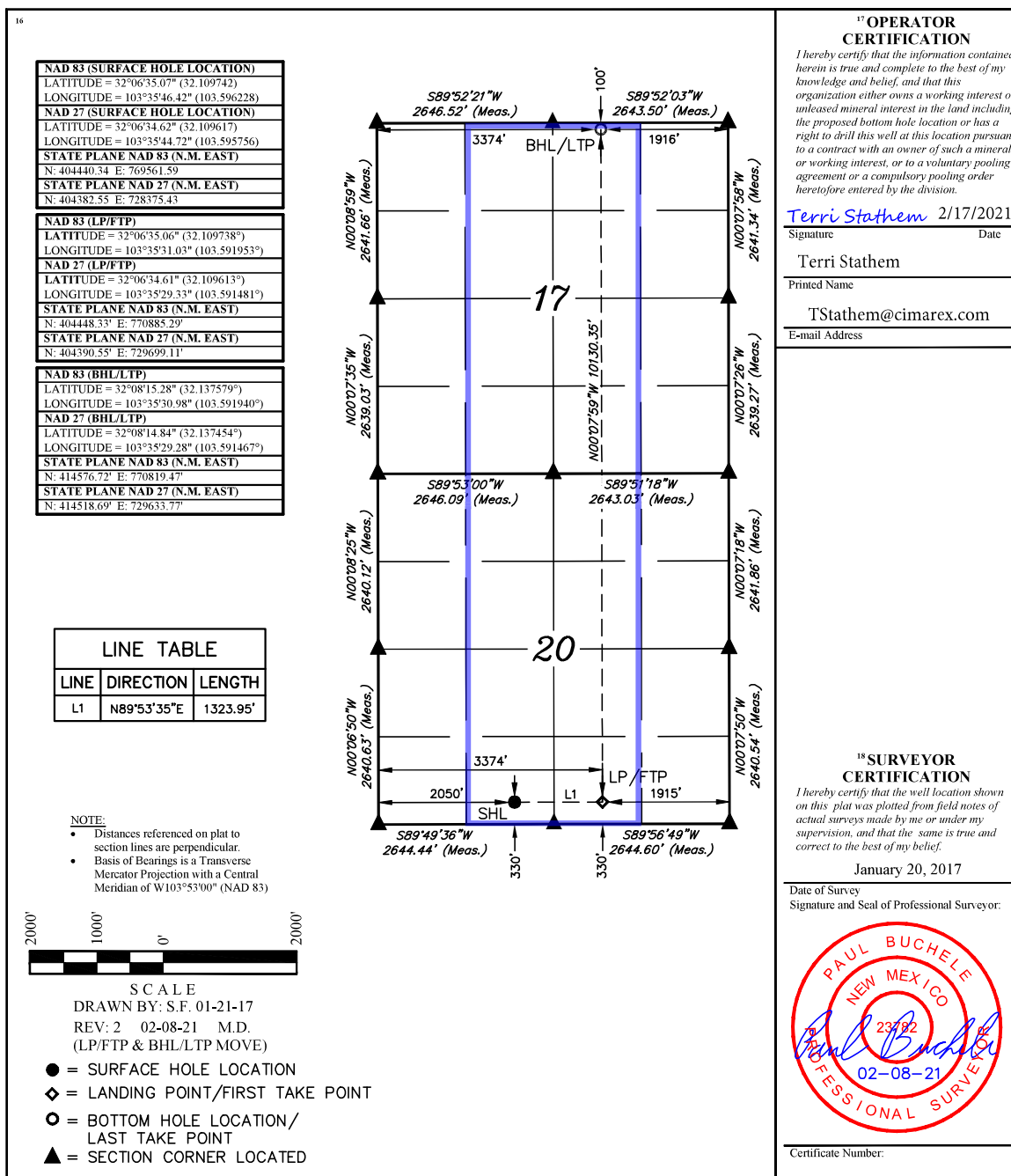
¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	20	25S	33E		330	SOUTH	2050	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
B	17	25S	33E		100	NORTH	1916	EAST	LEA
¹² Dedicated Acres 640	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.						

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☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ APT Number 30-025-46113	² Pool Code 97994	³ Pool Name WC-025 G-06 S253329D; UPR BONE SPRING
⁴ Property Code 319775	⁵ Property Name VACA DRAW 20-17 FEDERAL	⁶ Well Number 29H
⁷ OGRID No. 215099	⁸ Operator Name CIMAREX ENERGY CO.	⁹ Elevation 3420.7'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	20	25S	33E		331	SOUTH	1251	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
D	17	25S	33E		100	NORTH	440	WEST	LEA

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

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

SCALE
REV: 2 02-13-20 S.S. (LP/FTP & BHL CHANGE)

LINE TABLE

LINE	DIRECTION	LENGTH
L1	S89°51'15"W	810.72'
L2	S89°49'36"W	2644.44'

NAD 83 (SURFACE HOLE LOCATION)
LATITUDE = 32°06'35.07" (32.109741°)
LONGITUDE = 103°35'55.71" (103.598809°)

NAD 27 (SURFACE HOLE LOCATION)
LATITUDE = 32°06'34.62" (32.109617°)
LONGITUDE = 103°35'54.01" (103.598337°)

STATE PLANE NAD 83 (N.M. EAST)
N: 404435.19' E: 768762.42'
STATE PLANE NAD 27 (N.M. EAST)
N: 404377.40' E: 727576.26'

NAD 83 (LP/FTP)
LATITUDE = 32°06'35.07" (32.109741°)
LONGITUDE = 103°36'05.14" (103.601427°)

NAD 27 (LP/FTP)
LATITUDE = 32°06'34.62" (32.109617°)
LONGITUDE = 103°36'03.44" (103.600955°)

STATE PLANE NAD 83 (N.M. EAST)
N: 404429.74' E: 767951.85'
STATE PLANE NAD 27 (N.M. EAST)
N: 404371.95' E: 726765.70'

NAD 83 (BHL/LTP)
LATITUDE = 32°08'15.30" (32.137582°)
LONGITUDE = 103°36'05.10" (103.601417°)

NAD 27 (BHL/LTP)
LATITUDE = 32°08'14.85" (32.137458°)
LONGITUDE = 103°36'03.40" (103.600943°)

STATE PLANE NAD 83 (N.M. EAST)
N: 414557.88' E: 767886.04'
STATE PLANE NAD 27 (N.M. EAST)
N: 414499.84' E: 726700.35'

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.

Signature: *Amithy Crawford* Date: 7/24/20

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.

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

PAUL BUCHELE
NEW MEXICO
23782
02-13-20
PROFESSIONAL SURVEYOR

Certificate Number:

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (505) 393-6161 Fax: (505) 393-0720
District II
811 S. First St., Artesia, NM 88210
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State of New Mexico
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1220 South St. Francis Dr.
Santa Fe, NM 87505

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-46114	² Pool Code 97994	³ Pool Name WC-025 G-06 S253329D; UPR BONE SPRING
⁴ Property Code 319775	⁵ Property Name VACA DRAW 20-17 FEDERAL	⁶ Well Number 30H
⁷ OGRID No. 215099	⁸ Operator Name CIMAREX ENERGY CO.	⁹ Elevation 3421.1'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	20	25S	33E		331	SOUTH	1271	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
D	17	25S	33E		100	NORTH	440	WEST	LEA

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

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

SCALE
REV: 1 02-13-20 S.S. (LP/FTP & BHL CHANGE)

LINE	DIRECTION	LENGTH
L1	S89°51'22"W	830.75'
L2	S89°49'36"W	2644.44'
L3	S89°53'00"W	2646.09'

NAD 83 (SURFACE HOLE LOCATION)
LATITUDE = 32°06'35.07" (32.109741°)
LONGITUDE = 103°35'55.48" (103.598744°)
NAD 27 (SURFACE HOLE LOCATION)
LATITUDE = 32°06'34.62" (32.109617°)
LONGITUDE = 103°35'53.78" (103.598272°)
STATE PLANE NAD 83 (N.M. EAST)
N: 404435.30' E: 768782.44'
STATE PLANE NAD 27 (N.M. EAST)
N: 404377.51' E: 727596.28'

NAD 83 (LP/FTP)
LATITUDE = 32°06'35.07" (32.109742°)
LONGITUDE = 103°36'05.14" (103.601427°)
NAD 27 (LP/FTP)
LATITUDE = 32°06'34.62" (32.109617°)
LONGITUDE = 103°36'03.44" (103.600955°)
STATE PLANE NAD 83 (N.M. EAST)
N: 404429.74' E: 767951.85'
STATE PLANE NAD 27 (N.M. EAST)
N: 404371.95' E: 726765.70'

NAD 83 (BHL/LTP)
LATITUDE = 32°08'15.30" (32.137582°)
LONGITUDE = 103°36'05.10" (103.601417°)
NAD 27 (BHL/LTP)
LATITUDE = 32°08'14.85" (32.137458°)
LONGITUDE = 103°36'03.40" (103.600943°)
STATE PLANE NAD 83 (N.M. EAST)
N: 414557.88' E: 767886.04'
STATE PLANE NAD 27 (N.M. EAST)
N: 414499.84' E: 726700.35'

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 leased 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.
Signature: *[Signature]* Date: 2/24/20
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.
July 27, 2018
Date of Survey
Signature and Seal of Professional Surveyor:
[Seal: PAUL BUCHELE, NEW MEXICO, PROFESSIONAL SURVEYOR, 23782, 02-13-20]
Certificate Number:

District I
1625 N. French Dr., Hobbs, NM 88240
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Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
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☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-46115	² Pool Code 97994	³ Pool Name WC-025 G-06 S253329D; UPR BONE SPRIN
⁴ Property Code 319775	⁵ Property Name VACA DRAW 20-17 FEDERAL	⁶ Well Number 31H
⁷ GRID No. 215099	⁸ Operator Name CIMAREX ENERGY CO.	⁹ Elevation 3420.7'

¹⁰ Surface Location

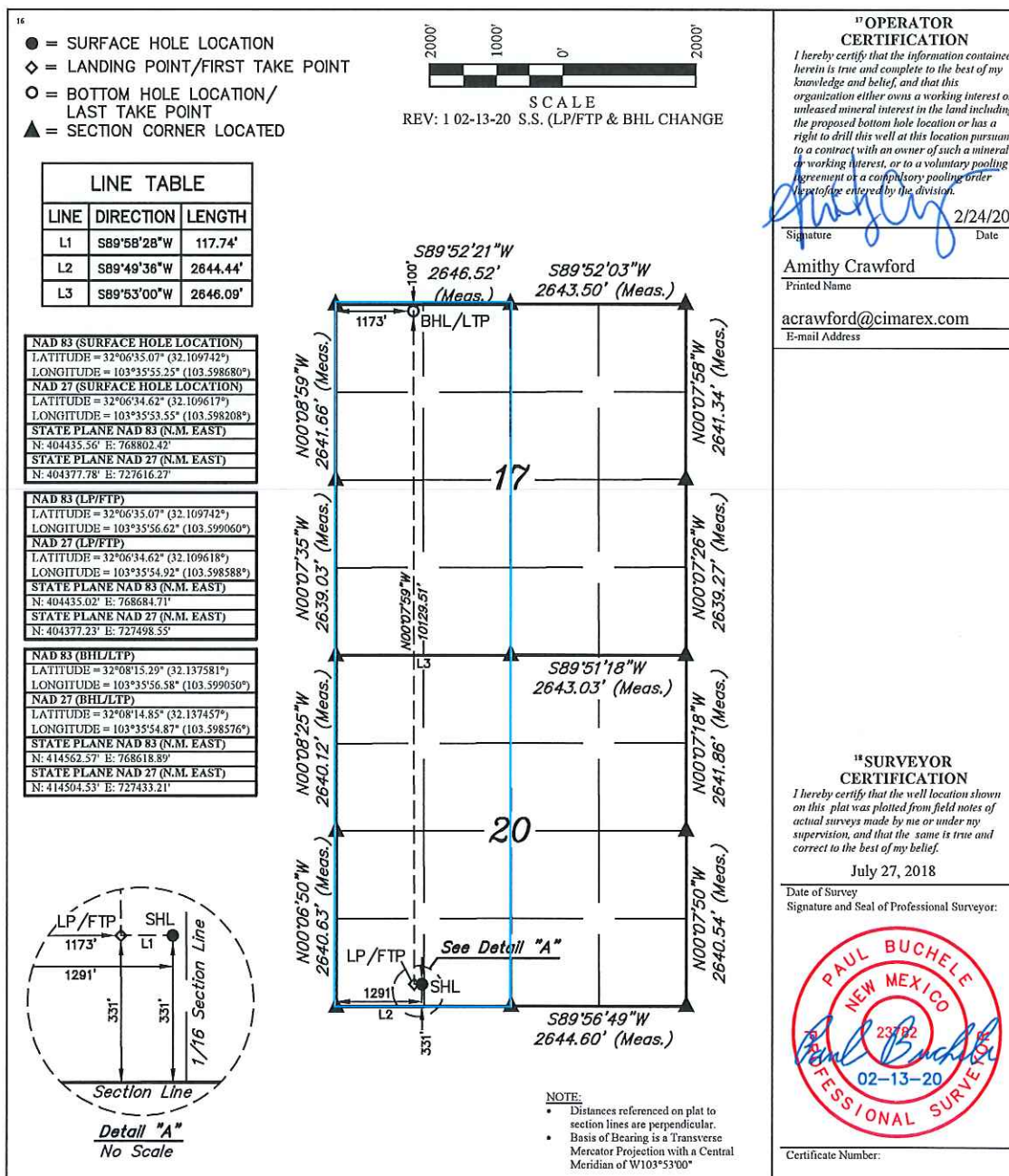
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	20	25S	33E		331	SOUTH	1291	WEST	LEA

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
C	17	25S	33E		100	NORTH	1173	WEST	LEA

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

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.



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Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
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AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

30-025-46116		97994	WC-025 G-06 S253329D; UPR BONE SPRING		
319775	VACA DRAW 20-17 FEDERAL			43H	
215099	CIMAREX ENERGY CO.			3407.9'	

10 Surface Location

UL or lot no. O	Section 20	Township 25S	Range 33E	Lot Idn	Feet from the 390	North/South line SOUTH	Feet from the 2140	East/West line EAST	County LEA
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"Bottom Hole Location If Different From Surface

UL or lot no. B	Section 17	Township 25S	Range 33E	Lot ID#	Feet from the 101	North/South line NORTH	Feet from the 2166	East/West line EAST	County LEA
¹² Dedicated Acres 640	¹³ Joint or Infill		¹⁴ Consolidation Code		¹⁵ Order No.				

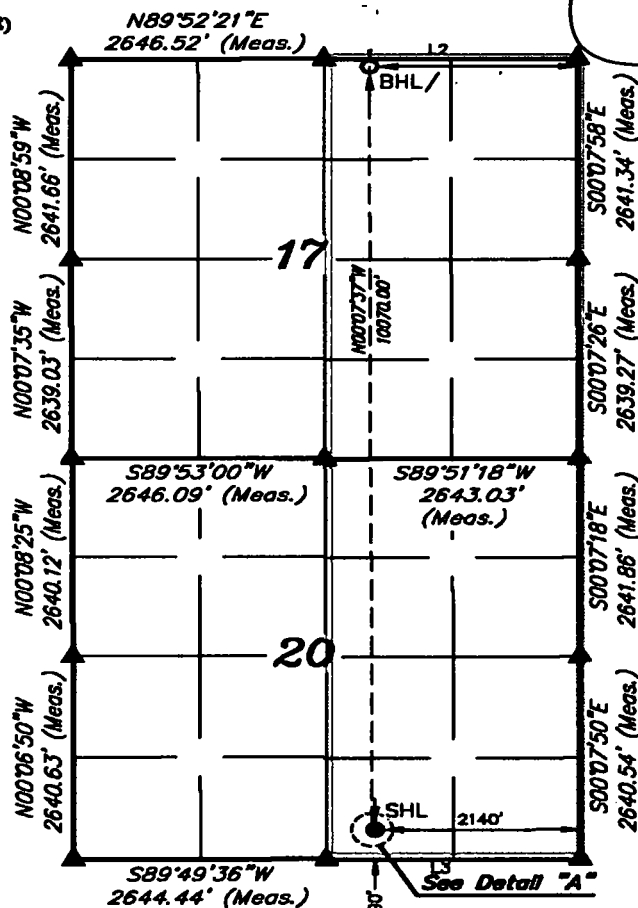
No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

- = SURFACE HOLE LOCATION
- ◆ = LANDING POINT/FIRST TAKE POINT
- = BOTTOM HOLE LOCATION/
LAST TAKE POINT
- ▲ = SECTION CORNER LOCATED



SCALE
REV: 2 06-19-19 R.J. (BFL CHANGE)

NAD 83 (SURFACE HOLE LOCATION)
LATITUDE - 32°06'35.65" (32.109903°)
LONGITUDE - 103°15'31.65" (103.252679°)
NAD 27 (SURFACE HOLE LOCATION)
LATITUDE - 32°06'35.20" (32.109779°)
LONGITUDE - 103°15'31.95" (103.252208°)
STATE PLANE NAD 83 (N.M.C. EAST)
N: 4044507.17' E: 770659.89'
STATE PLANE NAD 27 (N.M.C. EAST)
N: 4044449.34' E: 772473.72'



17 OPERATOR CERTIFICATION

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 a voluntary pooling agreement or proposed voluntary pooling order between the owner and this location.

2-1-2020

Signature: MAA Date: 1/11

Terri Statheim

Printed Name
Tstathem@cimarex.com

E-mail Address

13 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 25, 2018

Date of Survey _____
Signature and Seal of Professional Surveyor: _____



Certificate Numbers

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District II
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Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Azusa, 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
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District Office

☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 APL Number 30-025-46117		2 Pool Code 97994		3 Pool Name WC-025 G-06 S253329D; UPR BONE SPRING	
4 Property Code 319775		5 Property Name VACA DRAW 20-17 FEDERAL		6 Well Number 44H	
7 OGRID No. 215099		8 Operator Name CIMAREX ENERGY CO.		9 Elevation 3406.7	

= Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	20	25S	33E		390	SOUTH	2120	EAST	LEA

= Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	17	25S	33E		101	NORTH	1636	EAST	LEA
10 Dedicated Acres 640	11 Joint or Infill	12 Consolidation Code	13 Order No.						

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.

14

- = SURFACE HOLE LOCATION
- ◆ = LANDING POINT/FIRST TAKE POINT
- = BOTTOM HOLE LOCATION/
LAST TAKE POINT
- ▲ = SECTION CORNER LOCATED

2000' 1000' 0' 2000'

SCALE
DRAWN BY: C.D. 09-10-18
REV: 1 R.J. 06-19-19 (BHL CHANGE)

NAD 83 (SURFACE HOLE LOCATION)	
LATITUDE = 32°06'33.45" (32.109903°)	
LONGITUDE = 103°35'31.41" (103.592615°)	
NAD 83 (SURFACE HOLE LOCATION)	
LATITUDE = 32°06'33.20" (32.109778°)	
LONGITUDE = 103°35'31.71" (103.592143°)	
STATE PLANE NAD 83 (N.M. ZONE 18)	
N: 404367.21' E: 770679.89'	
STATE PLANE NAD 83 (N.M. ZONE 18)	
N: 404449.43' E: 729493.71'	

17

20

SHL

LP/FTP

2120'

1826'

390'

390'

"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 voluntary pooling order heretofore entered by regulation.

Signature: *Terri Stathem* Date: 2/1/2020

Printed Name: Terri Stathem

E-mail Address: Tstathem@cimarex.com

"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 25, 2018

Date of Survey

Signature and Seal of Professional Surveyor:

PAUL BUCHELE

NEW MEXICO

23/02

06-19-19

PROFESSIONAL SURVEYOR

Certificate Number:

NOTE:

- Distances referenced on plat to section lines are perpendicular.
- Base of Bearing is a Transverse Mercator Projection with a Central Meridian of W103°33'00"

District I
1625 N. French Dr., Hobbs, NM 88240
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Santa Fe, NM 87505

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☐ AMENDED REPORT

FEB 10 2020

WELL LOCATION AND ACREAGE DEDICATION

1 APT. Number 30-025-46118		2 Pool Code 97994		3 Well Name WC-025 G-08 9253329D; UPR BONE SPRING	
4 Property Code 319775		5 Property Name VACA DRAW 20-17 FEDERAL		6 Well Number 45H	
7 OCHRD No. 215099		8 Operator Name CIMAREX ENERGY CO.		9 Elevation 3406.7'	

Surface Location

UL or lot no.	Section	Township	Range	Lot 1st	Feet from the	North/South line	Feet from the	East/West line	County
O	20	25S	33E		390	SOUTH	2100	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot 1st	Feet from the	North/South line	Feet from the	East/West line	County
B	17	25S	33E		100	NORTH	1236	EAST	LEA
10 Dedicated Acres 640	11 Joint or Infill	12 Consolidation Code	13 Order No.						

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.

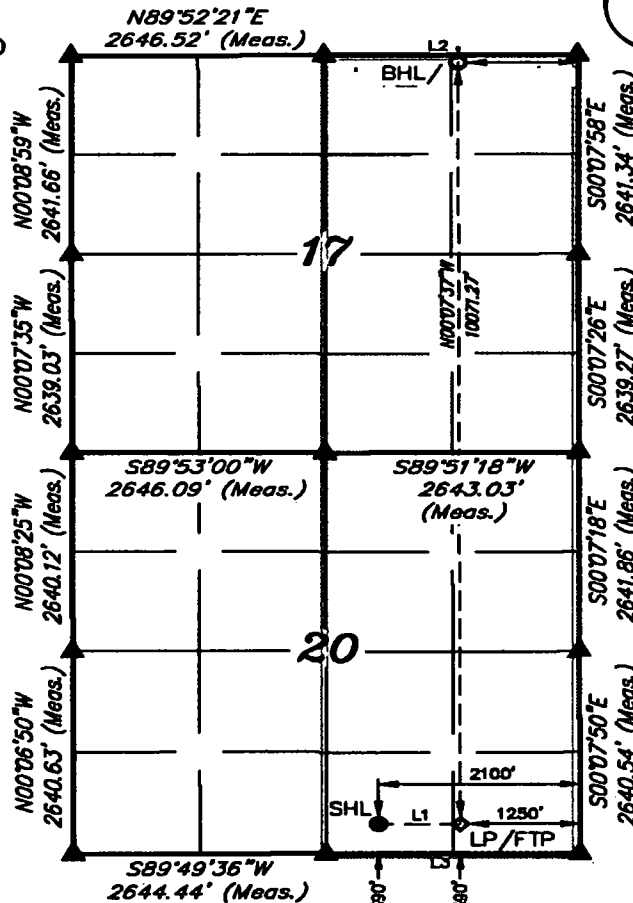
- = SURFACE HOLE LOCATION
- ◆ = LANDING POINT/FIRST TAKE POINT
- = BOTTOM HOLE LOCATION/
LAST TAKE POINT
- ▲ = SECTION CORNER LOCATED



SCALE

DRAWN BY: C.D. 09-10-18
REV: 1 R.J. 06-19-19 (BHL CHANGE)

NAD 83 (SURFACE HOLE LOCATION)
LATITUDE - 32°06'35.65" (32.109903°)
LONGITUDE - 103°35'33.18" (103.592550°)
NAD 27 (SURFACE HOLE LOCATION)
LATITUDE - 32°06'35.20" (32.109779°)
LONGITUDE - 103°35'31.48" (103.592078°)
STATE PLANE NAD 83 (N.M. EAST)
N: 404507.31' E: 770699.89'
STATE PLANE NAD 27 (N.M. EAST)
N: 404449.33' E: 779313.71'



NOTE:

- Distances referenced on plot to section lines are perpendicular.
- Basis of Bearing is a Transverse Mercator Projection with a Central Meridian of W103°33'00"

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 released mineral interest in the land including the proposed bottom hole location of this well at this location pursuant to a contract with the owner of such mineral or working interest, or through pooling agreement with the owner of such mineral or working interest, and that the well is being drilled in accordance with the order of the State of New Mexico.

Signature: [Signature] Date: 2/17/2020

Printed Name: Terri Statham

Printed Name: Tstatham@cimarex.com

E-mail Address:

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plot 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 25, 2018

Date of Survey
Signature and Seal of Professional Surveyor:



Certificate Number:

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☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-46119	² Pool Code 98180	³ Pool Name Wildcat Wolfcamp
⁴ Property Code 319775	⁵ Property Name VACA DRAW 20-17 FEDERAL	⁶ Well Number 57H
⁷ OGRID No. 215099	⁸ Operator Name CIMAREX ENERGY CO.	⁹ Elevation 3398.5'

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		390	SOUTH	920	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
B	17	25S	33E		100	NORTH	1724	EAST	LEA
¹² Dedicated Acres 640	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.						

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

2000' 1000' 0' 2000'

S C A L E

REV: 2 02-08-21 C.D. (WELL BORE CHANGE)

LINE	DIRECTION	LENGTH
L1	S89°56'50"W	804.00'
L2	S89°56'49"W	2644.60'
L3	N89°52'03"E	2643.50'
L4	S89°51'18"W	2643.03'

NAD 83 (SHL)
LATITUDE = 32°06'35.63" (32.109898°)
LONGITUDE = 103°35'19.46" (103.588740°)

NAD 27 (SHL)
LATITUDE = 32°06'35.18" (32.109773°)
LONGITUDE = 103°35'17.77" (103.588268°)

STATE PLANE NAD 83 (N.M. EAST)
N: 404513.40' E: 771879.66'

STATE PLANE NAD 27 (N.M. EAST)
N: 404455.62' E: 730693.48'

NAD 83 (LP/FTP)
LATITUDE = 32°06'35.65" (32.109902°)
LONGITUDE = 103°35'28.81" (103.591336°)

NAD 27 (LP/FTP)
LATITUDE = 32°06'35.20" (32.109777°)
LONGITUDE = 103°35'27.11" (103.590864°)

STATE PLANE NAD 83 (N.M. EAST)
N: 404509.29' E: 771075.80'

STATE PLANE NAD 27 (N.M. EAST)
N: 404451.51' E: 729889.63'

NAD 83 (LTP/BHL)
LATITUDE = 32°08'15.28" (32.137579°)
LONGITUDE = 103°35'28.75" (103.591320°)

NAD 27 (LTP/BHL)
LATITUDE = 32°08'14.84" (32.137454°)
LONGITUDE = 103°35'27.05" (103.590847°)

STATE PLANE NAD 83 (N.M. EAST)
N: 414577.97' E: 771011.42'

STATE PLANE NAD 27 (N.M. EAST)
N: 414519.94' E: 729825.72'

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)

Diagram showing well location and acreage dedication plat. The diagram includes a grid with section numbers 17 and 20. Key points include BHL/LTP (Bottom Hole Location/Landing Point/First Take Point) and LP/FTP (Landing Point/First Take Point). Distances are provided for various lines (L1, L2, L3, L4) and bearings. A scale bar is included.

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.

TerriStathem 2-18-2021
Signature Date

Terri Stathem
Printed Name

TStathem@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.

July 27, 2018

Date of Survey
Signature and Seal of Professional Surveyor:

PAUL BUCHELE
NEW MEXICO
23782
02-08-21
PROFESSIONAL SURVEYOR

Certificate Number:

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
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Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
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District Office

☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-46120	² Pool Code 98180	³ Pool Name Wildcat Wolfcamp
⁴ Property Code 319775	⁵ Property Name VACA DRAW 20-17 FEDERAL	⁶ Well Number 58H
⁷ OGRID No. 215099	⁸ Operator Name CIMAREX ENERGY CO.	⁹ Elevation 3398.8'

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		390	SOUTH	900	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	1040	EAST	LEA
¹² Dedicated Acres 6.40	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.						

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

2000' 1000' 0' 2000'

SCALE

REV: 1 02-08-21 C.D. (WELL BORE CHANGE)

LINE TABLE

LINE	DIRECTION	LENGTH
L1	S89°56'21"W	140.06'
L2	S89°56'49"W	2644.60'

NAD 83 (SHL)
LATITUDE = 32°06'35.63" (32.109898°)
LONGITUDE = 103°35'19.23" (103.588675°)

NAD 27 (SHL)
LATITUDE = 32°06'35.18" (32.109773°)
LONGITUDE = 103°35'17.53" (103.588203°)

STATE PLANE NAD 83 (N.M. EAST)
N: 404513.51' E: 771899.71'

STATE PLANE NAD 27 (N.M. EAST)
N: 404455.73' E: 730713.53'

NAD 83 (LP/FTP)
LATITUDE = 32°06'35.63" (32.109898°)
LONGITUDE = 103°35'20.86" (103.589127°)

NAD 27 (LP/FTP)
LATITUDE = 32°06'35.18" (32.109773°)
LONGITUDE = 103°35'19.16" (103.588656°)

STATE PLANE NAD 83 (N.M. EAST)
N: 404512.78' E: 771759.68'

STATE PLANE NAD 27 (N.M. EAST)
N: 404455.00' E: 730573.50'

NAD 83 (LTP/BHL)
LATITUDE = 32°08'15.28" (32.137578°)
LONGITUDE = 103°35'20.80" (103.589111°)

NAD 27 (LTP/BHL)
LATITUDE = 32°08'14.83" (32.137453°)
LONGITUDE = 103°35'19.09" (103.588637°)

STATE PLANE NAD 83 (N.M. EAST)
N: 414582.41' E: 771695.29'

STATE PLANE NAD 27 (N.M. EAST)
N: 414524.38' E: 730509.58'

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)

Detail "A"
No Scale

17

20

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.
Terri Stathem 2/18/2021
Signature Date
Terri Stathem
Printed Name
TStathem@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.
July 27, 2018
Date of Survey
Signature and Seal of Professional Surveyor:
PAUL BUCHELE
NEW MEXICO
23782
02-08-21
PROFESSIONAL SURVEYOR
Certificate Number:

District I
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Form C-102
Revised August 1, 2011
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AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number		² Pool Code		³ Pool Name	
30-025-46121		98180		Wildcat Wolfcamp	
⁴ Property Code		⁵ Property Name			⁶ Well Number
319775		VACA DRAW 20-17 FEDERAL			59H
⁷ OGRID No.		⁸ Operator Name			⁹ Elevation
215099		CIMAREX ENERGY CO.			3398.6'

¹⁰Surface Location

UL or lot no. P	Section 20	Township 25S	Range 33E	Lot Idn	Feet from the 390	North/South line SOUTH	Feet from the 880	East/West line EAST	County LEA
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¹¹ Bottom Hole Location If Different From Surface

UL or lot no. A	Section 17	Township 25S	Range 33E	Lot Idn	Feet from the 100	North/South line NORTH	Feet from the 355	East/West line EAST	County LEA
¹² Dedicated Acres 640		¹³ Joint or Infill		¹⁴ Consolidation Code		¹⁵ Order No.			

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



SCALE

REV: 1 02-08-21 C.D. (WELL BORE CHANGE)

LINE TABLE		
LINE	DIRECTION	LENGTH
L1	N89°57'00"E	524.94'
L2	S89°56'49"W	2644.60'

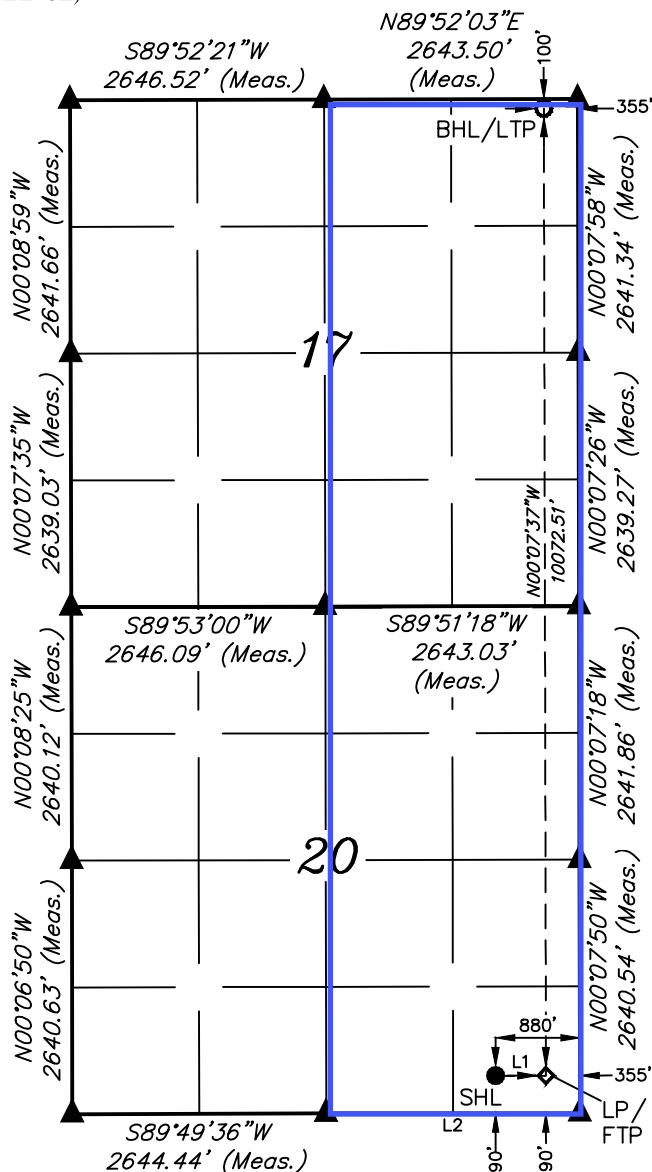
NAD 83 (SHL)
LATITUDE = 32°06'35.63" (32.109897°)
LONGITUDE = 103°35'19.00" (103.588611°)
NAD 27 (SHL)
LATITUDE = 32°06'35.18" (32.109773°)
LONGITUDE = 103°35'17.30" (103.588139°)
STATE PLANE NAD 83 (N.M. EAST)
N: 404513.62' E: 771919.71'
STATE PLANE NAD 27 (N.M. EAST)
N: 404455.84' E: 730733.53'

NAD 83 (LP/FTP)
LATITUDE = 32°06'35.62" (32.109895°)
LONGITUDE = 103°35'12.90" (103.586916°)
NAD 27 (LP/FTP)
LATITUDE = 32°06'35.17" (32.109770°)
LONGITUDE = 103°35'11.20" (103.586444°)
STATE PLANE NAD 83 (N.M. EAST)
N: 404516.27' E: 772444.55'
STATE PLANE NAD 27 (N.M. EAST)
N: 404458.49' E: 731258.37'

NAD 83 (LTP/BHL)
LATITUDE = 32°08'15.28" (32.137577°)
LONGITUDE = 103°35'12.83" (103.586898°)
NAD 27 (LTP/BHL)
LATITUDE = 32°08'14.83" (32.137453°)
LONGITUDE = 103°35'11.13" (103.586425°)
STATE PLANE NAD 83 (N.M. EAST)
N: 414586.85' E: 772380.16'
STATE PLANE NAD 27 (N.M. EAST)
N: 414528.82' E: 731194.44'

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)



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 3/9/2021
Signature Date

Signature _____ Date _____

Fatima Vasquez

Printed Name

fvasquez@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.

July 27, 2018

Date of Survey

Signature and Seal of Professional Surveyor:



Certificate Number:

District I
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District II
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Santa Fe, NM 87505

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☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-47961		² Pool Code 98180	³ Pool Name Wildcat Wolfcamp	
⁴ Property Code 319775	⁵ Property Name VACA DRAW 20-17 FEDERAL			⁶ Well Number 61H
⁷ OCRID No. 215099	⁸ Operator Name CIMAREX ENERGY CO.			⁹ Elevation 3398.3'

¹⁰Surface Location

UL or lot no. P	Section 20	Township 25S	Range 33E	Lot Idn	Feet from the 390	North/South line SOUTH	Feet from the 860	East/West line EAST	County LEA
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¹¹ Bottom Hole Location If Different From Surface

UL or lot no. A	Section 17	Township 25S	Range 33E	Lot Idn	Feet from the 100	North/South line NORTH	Feet from the 698	East/West line EAST	County LEA
¹² Dedicated Acres 640		¹³ Joint or Infill		¹⁴ Consolidation Code		¹⁵ Order No.			

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



SCALE

DRAWN BY: T.A. 08-08-19
REV: 2 02-18-21 C.D. (LP & BHL CHANGE)

LINE TABLE		
LINE	DIRECTION	LENGTH
L1	S89°56'49"W	2644.60'
L2	N89°56'44"E	162.00'

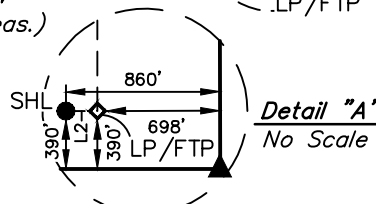
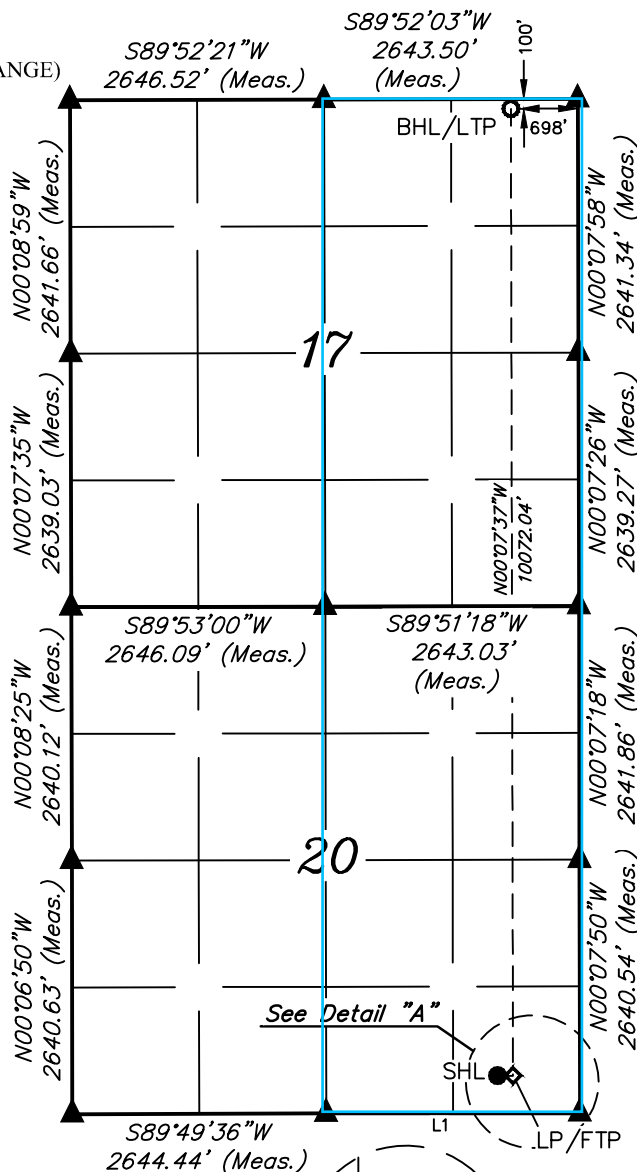
NAD 83 (SURFACE HOLE LOCATION)
LATITUDE = 32°06'35.63" (32.109897°)
LONGITUDE = 103°35'18.77" (103.588546°)
NAD 27 (SURFACE HOLE LOCATION)
LATITUDE = 32°06'35.18" (32.109773°)
LONGITUDE = 103°35'17.07" (103.588075°)
STATE PLANE NAD 83 (N.M. EAST)
N: 404513.69' E: 771939.65'
STATE PLANE NAD 27 (N.M. EAST)
N: 404455.91' E: 730753.47'

NAD 83 (LP/FTP)
LATITUDE = 32°06'35.63" (32.109896°)
LONGITUDE = 103°35'16.88" (103.588023°)
NAD 27 (LP/FTP)
LATITUDE = 32°06'35.18" (32.109772°)
LONGITUDE = 103°35'15.19" (103.587551°)
STATE PLANE NAD 83 (N.M. EAST)
N: 404514.52' E: 772101.62'
STATE PLANE NAD 27 (N.M. EAST)
N: 404456.74' E: 730915.43'

NAD 83 (BHL/LTP)
LATITUDE = 32°08'15.28" (32.137578°)
LONGITUDE = 103°35'16.82" (103.588006°)
NAD 27 (BHL/LTP)
LATITUDE = 32°08'14.83" (32.137453°)
LONGITUDE = 103°35'15.12" (103.587533°)
STATE PLANE NAD 83 (N.M. EAST)
N: 414584.63' E: 772037.22'
STATE PLANE NAD 27 (N.M. EAST)
N: 414526.60' E: 730851.51'

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)



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 3/1/21
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.

July 27, 2018

Date of Survey _____
Signature and Seal of Professional Surveyor: _____



Certificate Number:

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 E. 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
CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*APP Number 30-025-46160	*Pool Name WC-025 G-06 S253329D; UPR BONE SPRING
*Property Code 319775	*Property Name VACA DRAW 20-17 FEDERAL
*DGBID No. 215099	*Operator Name CIMAREX ENERGY CO.
*Well Number 71H	*Elevation 3395.8'

* Surface Location

UL or lot no. P	Section 20	Township 25S	Range 33E	Lot 10n	Feet from the 390	North/South line SOUTH	Feet from the 370	East/West line EAST	County LEA
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* Bottom Hole Location If Different From Surface

UL or lot no. A	Section 17	Township 25S	Range 33E	Lot 10n	Feet from the 100	North/South line NORTH	Feet from the 977	East/West line EAST	County LEA
Dedicated Acres 640	Joint or Infill	Consolidation Code	Order No.						

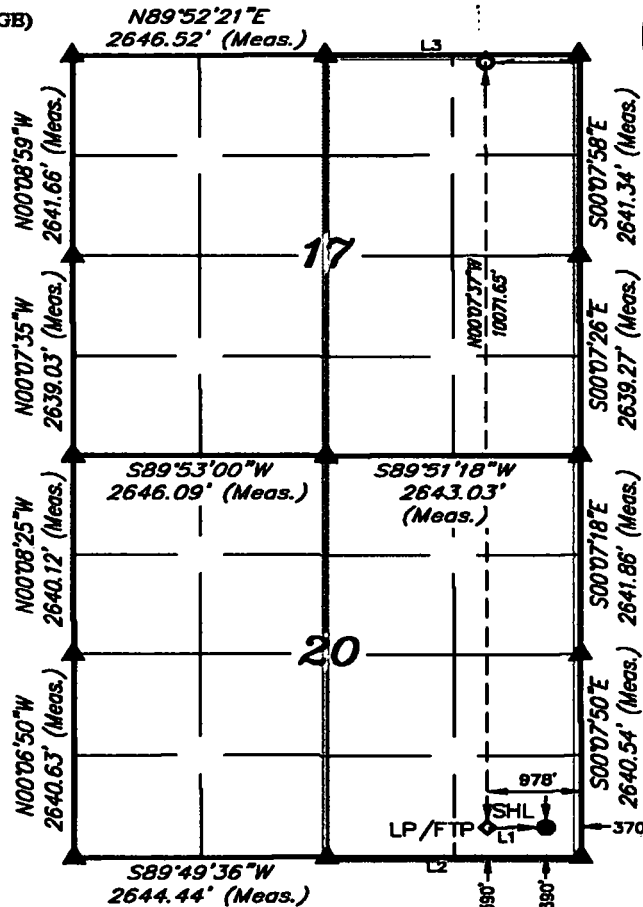
No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

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



SCALE
REV: 2 06-19-19 S.T.O. (BHL CHANGE)

NAD 83 (SURFACE HOLE LOCATION)	
LATITUDE - 32°06'35.62" (32.109895°)	
LONGITUDE - 103°35'13.07" (103.586964°)	
NAD 83 (SURFACE HOLE LOCATION)	
LATITUDE - 32°06'35.17" (32.109770°)	
LONGITUDE - 103°35'11.37" (103.586492°)	
STATE PLANE NAD 83 (N.M. EAST)	
N: 404316.16' E: 772435.36'	
STATE PLANE NAD 83 (N.M. EAST)	
N: 404458.38' E: 751243.38'	



- 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"

* 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 subsurface pooling agreement, or a pooling order heretofore filed in the district.

Signature: _____ Date: 1-2020

Printed Name: Ferri Stathem

E-mail Address: fsthathem@cimarex.com

E-mail Address: _____

* SURVEYOR
CERTIFICATION

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

July 27, 2018

Date of Survey
Signature and Seal of Professional Surveyor:



Certificate Number: _____

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Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

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

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

☐ AMENDED REPORT

FEB 10 2020

RECEIVED

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number 30-025-46161	2 Pool Code 97994	3 Pool Name WC-025 G-06 S253329D; UPR BONE SPRING
4 Property Code 319775	5 Property Name VACA DRAW 20-17 FEDERAL	6 Well Number 72H
7 OGRID No. 215099	8 Operator Name CIMAREX ENERGY CO.	9 Elevation 3395.3'

= Surface Location

UL or lot no. P	Section 20	Township 25S	Range 33E	Lot Idn	Feet from the 390	North/South line SOUTH	Feet from the 350	East/West line EAST	County LEA
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= Bottom Hole Location If Different From Surface

UL or lot no. A	Section 17	Township 25S	Range 33E	Lot Idn	Feet from the 100	North/South line NORTH	Feet from the 320	East/West line EAST	County LEA
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10 Dedicated Acres 640	11 Joint or Infill	12 Consolidation Code	13 Order No.
---------------------------	--------------------	-----------------------	--------------

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.

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

2000' 1000' 0' 1000' 2000'

SCALE
REV: 1 S.T.O. 06-19-19 (BHL CHANGE)

NAD 83 (SURFACE HOLE LOCATION)	
LATITUDE	= 32°06'35.62" (32.109895°)
LONGITUDE	= 103°39'12.84" (103.653599°)
NAD 83 (BOTTOM HOLE LOCATION)	
LATITUDE	= 32°06'35.17" (32.109770°)
LONGITUDE	= 103°39'11.14" (103.65428°)
STATE PLANE NAD 83 (N.M. EAST)	
N	= 404518.26' E: 772449.36'
STATE PLANE NAD 83 (N.M. EAST)	
N	= 404458.49' E: 731263.37'

NOTE:
• Distances referenced on plat to section lines are perpendicular.
• Basis of Bearing is a Transverse Mercator Projection with a Central Meridian of W105°53'00"

Diagram showing sections 17 and 20. Section 17 is a 360' x 360' square. Section 20 is a 360' x 360' square. The diagram includes bearings and distances for the boundaries and the well location. A detail 'A' is indicated near the well location.

"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 unless stated otherwise 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 pooling agreement or a leasehold interest in the order heretofore made by this organization.

Signature: Terri Stathem
Date: 2-1-2020
Printed Name: Terri Stathem
E-mail Address: Tstathem@cimarex.com

"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
06-19-19
PROFESSIONAL SURVEYOR
Certificate Number:

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-46122		² Pool Code 97994	³ Pool Name WC-025 G06 S253329D: Upr Bone Spring	
⁴ Property Code 319775	⁵ Property Name VACA DRAW 20-17 FEDERAL		⁶ Well Number 73H	
⁷ OGRID No. 215099	⁸ Operator Name CIMAREX ENERGY CO.		⁹ Elevation 3395.4'	

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		390	SOUTH	330	EAST	LEA

"Bottom Hole Location If Different From Surface

UL or lot no. A	Section 17	Township 25S	Range 33E	Lot Idn	Feet from the 100	North/South line NORTH	Feet from the 325	East/West line EAST	County LEA
¹² Dedicated Acres 640		¹³ Joint or Infill		¹⁴ Consolidation Code		¹⁵ Order No.			

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.

**"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 interest or working interest, nor is any bona fide dispute as to ownership pending.

Signature: _____ Date: 2-1-2018

Name: TERRI STATHAM

Email Address: tstatham@cimarex.com

**"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:



Certificate Number: _____

Revised March 23, 2017

RECEIVED:	REVIEWER:	TYPE:	APP NO:
-----------	-----------	-------	---------

ABOVE THIS TABLE FOR OCD DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION
 - Geological & Engineering Bureau -
 1220 South St. Francis Drive, Santa Fe, NM 87505



ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND
 REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Applicant: _____ **OGRID Number:** _____
Well Name: _____ **API:** _____
Pool: _____ **Pool Code:** _____

**SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION
 INDICATED BELOW**

1) TYPE OF APPLICATION: Check those which apply for [A]

A. Location – Spacing Unit – Simultaneous Dedication

☐ NSL ☐ NSP (PROJECT AREA) ☐ NSP (PRORATION UNIT) ☐ SD

B. Check one only for [I] or [II]

[I] Commingling – Storage – Measurement

☐ DHC ☒ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

[II] Injection – Disposal – Pressure Increase – Enhanced Oil Recovery

☐ WFX ☐ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR

2) NOTIFICATION REQUIRED TO: Check those which apply.

- A. ☐ Offset operators or lease holders
 B. ☐ Royalty, overriding royalty owners, revenue owners
 C. ☐ Application requires published notice
 D. ☐ Notification and/or concurrent approval by SLO
 E. ☐ Notification and/or concurrent approval by BLM
 F. ☐ Surface owner
 G. ☐ For all of the above, proof of notification or publication is attached, and/or,
 H. ☐ No notice required

FOR OCD ONLY

- ☐ Notice Complete
☐ Application Content Complete

3) CERTIFICATION: I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

 Print or Type Name

Signature

 Date

 Phone Number

 e-mail Address

Fatima Vasquez

From: [Walls, Christopher](#)
To: [Ryder, McKenna L](#); [Amithy Crawford](#)
Subject: Re: [External] Well Name: VACA DRAW 20-17 FEDERAL, Well Number: 61H, Notification of Sundry Received
Date: Friday, April 9, 2021 11:09:51 AM

Amithy,

You have verbal approval. Once the sundry is fixed, I will approve it in AFMSS.

Thank you

Chris Walls

Sup. Petroleum Engineer
620 E. Greene Street
Carlsbad, NM 88220
575-234-2234
cwalls@blm.gov

From: Ryder, McKenna L <mryder@blm.gov>
Sent: Friday, April 9, 2021 9:25 AM
To: Amithy Crawford <acrawford@cimarex.com>
Cc: Walls, Christopher <cwalls@blm.gov>
Subject: Re: [External] Well Name: VACA DRAW 20-17 FEDERAL, Well Number: 61H, Notification of Sundry Received

Good morning Amithy,

This help ticket has still not been resolved, I requested an update on it today.

Chris, can you give them an official verbal to go ahead while we wait? Do you need any additional info from me to make that call?

Thanks,

From: Amithy Crawford <acrawford@cimarex.com>
Sent: Friday, April 9, 2021 7:04 AM
To: Ryder, McKenna L <mryder@blm.gov>
Subject: RE: [External] Well Name: VACA DRAW 20-17 FEDERAL, Well Number: 61H, Notification of Sundry Received

Hi Mckenna,

Any word on this electronic approval of this sundry? Just wondering if the IT issues got worked out.

Thank you!!

Well Name: VACA DRAW 20-17 FEDERAL	Well Location: T25S / R33E / SEC 20 / SESE / 32.109732 / -103.588417	County or Parish/State: LEA / NM
Well Number: 61H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM0026394, NMNM26394	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002547961	Well Status: Approved Application for Permit to Drill	Operator: CIMAREX ENERGY COMPANY

Notice of Intent

Type of Submission: Notice of Intent	Type of Action APD Change
Date Sundry Submitted: 03/03/2021	Time Sundry Submitted: 03:42
Date proposed operation will begin: 03/14/2021	

Procedure Description: Cimarex respectfully requests approval to change SHL, BHL, Target Formation, casing design and perform offline cementing for the Vaca Draw 20-17 Federal 57H well. Proposed SHL: 390' FSL & 860' FEL Sec 20 25S 33E. Proposed BHL: 100' FNL & 698' FEL Sec 17 25S 33E. Proposed formation: Wolfcamp. Offline Cementing procedure: (1) Land casing on solid body mandrel hanger (1a) 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. Additional Attachments: C102, BOP, choke Manifold & Multibowl WH, Directional Plan, Drilling Plan, wellsite layout and OLC plan.

Application

Well Name: VACA DRAW 20-17 FEDERAL	Well Location: T25S / R33E / SEC 20 / SESE / 32.109732 / -103.588417	County or Parish/State: LEA / NM
Well Number: 61H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM0026394, NMNM26394	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002547961	Well Status: Approved Application for Permit to Drill	Operator: CIMAREX ENERGY COMPANY

Section 1 - General

APD ID: 10400038013	Tie to previous NOS? Y	Submission Date: 01/18/2019
BLM Office: CARLSBAD	User:	Title:
Federal/Indian APD: FED	Is the first lease penetrated for production Federal or Indian? FED	
Lease number: NMNM0026394	Lease Acres:	
Surface access agreement in place?	Allotted?	Reservation:
Agreement in place? NO	Federal or Indian agreement:	
Agreement number:		
Agreement name:		
Keep application confidential? Y		
Permitting Agent? NO	APD Operator: CIMAREX ENERGY COMPANY	
Operator letter of designation:		

Operator Info

Operator Organization Name: CIMAREX ENERGY COMPANY		
Operator Address: 600 N MARIENFELD STREET ST SUITE 600		Zip: 79701
Operator PO Box:		
Operator City: MIDLAND	State: TX	
Operator Phone: (432)571-7800		
Operator Internet Address: tstathem@cimarex.com		

Section 2 - Well Information

Well in Master Development Plan? NO	Master Development Plan name:	
Well in Master SUPO? NO	Master SUPO name:	
Well in Master Drilling Plan? NO	Master Drilling Plan name:	
Well Name: VACA DRAW 20-17 FEDERAL	Well Number: 61H	Well API Number: 3002547961
Field/Pool or Exploratory? Field and Pool	Field Name: BONE SPRING	Pool Name: UPPER BONE SPRING SHALE
Is the proposed well in an area containing other mineral resources? USEABLE WATER		
Is the proposed well in a Helium production area? N	Use Existing Well Pad? NO	New surface disturbance?
Type of Well Pad: MULTIPLE WELL	Multiple Well Pad Name: VACA Number: E2E2 PAD	
Well Class: HORIZONTAL	DRAW 20-17 FEDERAL Number of Legs: 1	
Well Work Type: Drill		
Well Type: OIL WELL		
Describe Well Type:		

Received by OCD: 5/18/2021 1:00:27 PM

Page 35 of 118

Well Name: VACA DRAW 20-17
FEDERAL

Well Location: T25S / R33E / SEC 20 /
SESE / 32.109732 / -103.588417

County or Parish/State: LEA /
NM

Well Number: 61H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM0026394,
NMNM26394

Unit or CA Name:

Unit or CA Number:

US Well Number: 3002547961

Well Status: Approved Application for
Permit to Drill

Operator: CIMAREX ENERGY
COMPANY

Is the proposed well in an area containing other mineral resources? USEABLE WATER

Well sub-Type: INFILL

Describe sub-type:

Distance to town: 27 MilesDistance to nearest well: 20 FTDistance to lease line: 330 FT

Reservoir well spacing assigned acres Measurement: 320 Acres

Well plat: Vaca_Draw_20_17_Fed_61H_C102_BLM_Lease_20200213163116.pdf
Vaca_Draw_20_17_Fed_61H_C102_20200213163117.pdf

Well work start Date: 12/01/2019Duration: 30 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83Vertical Datum: NAVD88

Survey number:Reference Datum:

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this lease?
SHL Leg #1	330	FSL	820	FEL	25S	33E	20	Aliquot SESE	32.109732	-103.588417	LEA	NEW MEXICO	NEW MEXICO	F	NMNM26394	3398	0	0	
KOP Leg #1	331	FSL	440	FEL	25S	33E	20	Aliquot SESE	32.109731	-103.587192	LEA	NEW MEXICO	NEW MEXICO	F	NMNM26394	3398	0	0	
PPP Leg #1-1	332	FSL	1870	FEL	25S	33E	20	Aliquot SESE	32.109803	-103.587192	LEA	NEW MEXICO	NEW MEXICO	F	NMNM26394	-7079	10500	10477	

Received by OCD: 5/18/2021 1:00:27 PM

Well Name: VACA DRAW 20-17
FEDERAL

Well Location: T25S / R33E / SEC 20 /
SESE / 32.109732 / -103.588417

County or Parish/State: LEA /
NM

Well Number: 61H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM0026394,
NMNM26394

Unit or CA Name:

Unit or CA Number:

US Well Number: 3002547961

Well Status: Approved Application for
Permit to Drill

Operator: CIMAREX ENERGY
COMPANY

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this lease?
EXIT Leg #1	100	FNL	1041	FEL	25S	33E	17	Aliquot NENE	32.137579	-103.591792	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 26394	-7402	20745	10800	
BHL Leg #1	100	FNL	1870	FEL	25S	35E	17	Aliquot NENE	32.137508	-103.640403	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 26394	-7402	20745	10800	

Drilling Plan

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1626313	RUSTLER	3398	935	935		USEABLE WATER	N
1626314	TOP SALT	2100	1298	1298		NONE	N
1626315	BASE OF SALT	-1316	4714	4714		NONE	N
1626325	BELL CANYON	-1406	4804	4804		NONE	N
1626324	LAMAR	-1511	4909	4909		NONE	N
1626326	BELL CANYON	-1539	4937	4937		NONE	N
1626320	BRUSHY CANYON	-4138	7536	7536		NATURAL GAS, OIL	N
1626318	BONE SPRING	-5634	9032	9032		NATURAL GAS, OIL	Y
1626319	AVALON SAND	-5914	9312	9312		NATURAL GAS, OIL	N
1626321	BONE SPRING 1ST	-6613	10011	10011		NATURAL GAS, OIL	N
1626322	BONE SPRING 2ND	-7185	10583	10583		NATURAL GAS, OIL	N
1626323	BONE SPRING 3RD	-8324	11722	11722		NATURAL GAS, OIL	N
1626327	WOLFCAMP	-8791	12189	12189		NATURAL GAS, OIL	N

Section 2 - Blowout Prevention

Well Name: VACA DRAW 20-17 FEDERAL	Well Location: T25S / R33E / SEC 20 / SESE / 32.109732 / -103.588417	County or Parish/State: LEA / NM
Well Number: 61H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM0026394, NMNM26394	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002547961	Well Status: Approved Application for Permit to Drill	Operator: CIMAREX ENERGY COMPANY

Pressure Rating (PSI): 2M Rating Depth: 4814

Equipment: A BOP consisting of three rams, including one blind ram and two pipe rams and one annular preventer. An accumulator that meets the requirements in Onshore Order #2 for the pressure rating of the BOP stack. A rotating head may be installed as needed. A Kelly clock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor.

Requesting Variance? YES

Variance request: Co-flex line between the BOP and choke manifold. Certification for proposed co-flex hose is attached. The hose is not required by the manufacturer to be anchored. In the event the specific hose is not available, one of equal or higher rating will be used. Variance to include Hammer Union connections on lines downstream of the buffer tank only.

Testing Procedure: 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 3000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 3000 psi test. Annular will be tested to 50% of working pressure. 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 3000 psi. The surface casing string will be tested as per Onshore Order No. 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater. The casing string utilizing steel body pack-off will be tested to 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.

Choke Diagram Attachment:

Vaca_Draw_20_17_Fed_61H_Choke_2M3M_20200219101217.pdf

BOP Diagram Attachment:

Vaca_Draw_20_17_Fed_61H_BOP_2M_20200219101228.pdf

Pressure Rating (PSI): 3M Rating Depth: 20745

Equipment: A BOP consisting of three rams, including one blind ram and two pipe rams and one annular preventer. An accumulator that meets the requirements in Onshore Order #2 for the pressure rating of the BOP stack. A rotating head may be installed as needed. A Kelly clock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor.

Requesting Variance? YES

Variance request: Co-flex line between the BOP and choke manifold. Certification for proposed co-flex hose is attached. The hose is not required by the manufacturer to be anchored. In the event the specific hose is not available, one of equal or higher rating will be used. Variance to include Hammer Union connections on lines downstream of the buffer tank only.

Testing Procedure: 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 3000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 3000 psi test. Annular will be tested to 50% of working pressure. 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 3000 psi. The surface casing string will be tested as per Onshore Order No. 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater. The casing string utilizing steel body pack-off will be tested to 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.

Choke Diagram Attachment:

Vaca_Draw_20_17_Fed_61H_Choke_2M3M_20200219101312.pdf

BOP Diagram Attachment:

Vaca_Draw_20_17_Fed_61H_BOP_3M_20200219101321.pdf

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Well Name: VACA DRAW 20-17
FEDERAL

Well Location: T25S / R33E / SEC 20 /
SESE / 32.109732 / -103.588417

County or Parish/State: LEA /
NM

Well Number: 61H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM0026394,
NMNM26394

Unit or CA Name:

Unit or CA Number:

US Well Number: 3002547961

Well Status: Approved Application for
Permit to Drill

Operator: CIMAREX ENERGY
COMPANY

Vaca_Draw_20_17_Fed_61H_Choke_2M3M_20200219101312.pdf

Vaca_Draw_20_17_Fed_61H_BOP_3M_20200219101321.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type
1	SURFACE	17.5	13.375	NEW	NON API	N	0	985	0	985			985	H-40	48	ST&C	1.64	3.84	BUOY	6.81	BUOY
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	4814	0	4814			4814	J-55	40	LT&C	1.35	1.55	BUOY	2.7	BUOY
3	PRODUCTION	8.75	5.5	NEW	API	N	0	10250	0	10250	0		10250	L-80	17	LT&C	1.31	1.61	BUOY	1.84	BUOY
4	PRODUCTION	8.75	5.5	NEW	API	N	9173	20750	9173	10800			11577	L-80	17	BUTT	1.24	1.53	BUOY	42.46	BUOY

Casing Attachments

Casing ID: 1 String Type: SURFACE

Inspection Document:

Spec Document:

Vaca_Draw_20_17_Fed_61H_Surf_Casing_Spec_Sheet_20200219133326.pdf

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Vaca_Draw_20_17_Fed_61H_Casing_Assumptions_20200219132817.pdf

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Well Name: VACA DRAW 20-17 FEDERAL	Well Location: T25S / R33E / SEC 20 / SESE / 32.109732 / -103.588417	County or Parish/State: LEA / NM
Well Number: 61H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM0026394, NMNM26394	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002547961	Well Status: Approved Application for Permit to Drill	Operator: CIMAREX ENERGY COMPANY

Casing Attachments

Casing ID: 2 String Type:INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Vaca_Draw_20_17_Fed_61H_Casing_Assumptions_20200219133704.pdf

Casing ID: 3 String Type:PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Vaca_Draw_20_17_Fed_61H_Casing_Assumptions_20200219134031.pdf

Casing ID: 4 String Type:PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Vaca_Draw_20_17_Fed_61H_Casing_Assumptions_20200219134147.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
-------------	-----------	---------------------	--------	-----------	--------------	-------	---------	-------	---------	-------------	-----------

Well Number: 61H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM0026394,
NMNM26394

Unit or CA Name:

Unit or CA Number:

US Well Number: 3002547961

Well Status: Approved Application for
Permit to Drill

Operator: CIMAREX ENERGY
COMPANY

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	985	415	1.72	13.5	713	50	Class C	Bentonite
SURFACE	Tail		0	985	195	1.34	14.8	260	25	Class C	LCM
INTERMEDIATE	Lead		0	4814	916	1.88	12.9	1718	50	35:65 (Poz:C)	Salt, Bentonite
INTERMEDIATE	Tail		0	4814	282	1.34	14.8	377	25	Class C	LCM
PRODUCTION	Lead		0	1025 0	496	3.64	10.3	1802	25	Tuned Light	LCM
PRODUCTION	Tail		0	1025 0	2527	1.3	14.2	3285	25	50:50 (Poz:H)	Salt, Bentonite, Fluid Loss, Dispersant, SMS
PRODUCTION	Lead		9173	2074 5	496	3.64	10.3	1802	25	Tuned Light	LCM
PRODUCTION	Tail		9173	2074 5	2527	1.3	14.2	3285	25	50:50 (Poz:H)	Salt, Bentonite, Fluid Loss, Dispersant, SMS

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: Sufficient mud materials will be kept on location at all times in order to combat lost circulation or unexpected kicks. In order to run DSTs, open hole logs, and casing, the viscosity and water loss may have to be adjusted in order to meet these needs.

Describe the mud monitoring system utilized: PVT/Pason/Visual Monitoring

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	985	SPUD MUD	8.3	8.8							
985	4814	OTHER : Brine Water	9.7	10.2							

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Well Name: VACA DRAW 20-17 FEDERAL	Well Location: T25S / R33E / SEC 20 / SESE / 32.109732 / -103.588417	County or Parish/State: LEA / NM
Well Number: 61H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM0026394, NMNM26394	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002547961	Well Status: Approved Application for Permit to Drill	Operator: CIMAREX ENERGY COMPANY

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
4814	2074 5	OTHER : FW/Cut Brine	8.5	9							

Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

No DST Planned

List of open and cased hole logs run in the well:

CNL,DS,GR

Coring operation description for the well:

N/A

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 5054

Anticipated Surface Pressure: 2678

Anticipated Bottom Hole Temperature(F): 177

Anticipated abnormal pressures, temperatures, or potential geologic hazards? YES

Describe:

Lost circulation may be encountered in the Delaware mountain group. Abnormal pressure as well as hole stability issues may be encountered in the Wolfcamp.

Contingency Plans geoharzards description:

Lost circulation material will be available, as well as additional drilling fluid along with the fluid volume in the drilling rig pit system. Drilling fluid can be mixed on location or mixed in vendor mud plant and trucked to location if needed. Sufficient barite will be available to maintain appropriate mud weight for the Wolfcamp interval.

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

Vaca_Draw_20_17_Fed_61H_H2S_Plan_20200219141838.pdf

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Well Name: VACA DRAW 20-17 FEDERAL	Well Location: T25S / R33E / SEC 20 / SESE / 32.109732 / -103.588417	County or Parish/State: LEA / NM
Well Number: 61H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM0026394, NMNM26394	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002547961	Well Status: Approved Application for Permit to Drill	Operator: CIMAREX ENERGY COMPANY

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Vaca_Draw_20_17_Fed_61H_AC_Report_20200219142225.pdf

Vaca_Draw_20_17_Fed_61H_Directional_Plan_20200219142248.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

Vaca_Draw_20_17_Fed_61H_Flex_Hose_20200219142330.pdf

Vaca_Draw_20_17_Fed_61H_Drilling_Plan_20200219142332.pdf

Vaca_Draw_20_17_Fed_61H_Gas_Capture_Plan_20200219142331.pdf

Other Variance attachment:

Vaca_Draw_20_17_Fed_61H_Multibowl_Wellhead_20200220130220.pdf

SUPO

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

Vaca_Draw_20_17_Fed_W2E2_Pad_Existing_Road_20200219143118.pdf

Existing Road Purpose: ACCESS

Row(s) Exist? NO

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? NO

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Well Name: VACA DRAW 20-17 FEDERAL	Well Location: T25S / R33E / SEC 20 / SESE / 32.109732 / -103.588417	County or Parish/State: LEA / NM
Well Number: 61H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM0026394, NMNM26394	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002547961	Well Status: Approved Application for Permit to Drill	Operator: CIMAREX ENERGY COMPANY

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

Vaca_Draw_20_17_Fed_61H_One_Mile_Radius___existing_well_map_20200219143554.pdf

Section 4 - Location of Existing and/or Proposed Production Facilities

Submit or defer a Proposed Production Facilities plan? SUBMIT

Production Facilities description: 500x 560' pad was staked with the BLM for construction and uses Vaca Draw 20-17 Zone 1 CTB and Vaca Draw 20-17 Zone 2 CTB. Road: Please see Exhibit A for 18,566' existing road - Bulkline: 2039.86' of 1- 12" buried steel oil bulk line, 1-12" Steel gas bulk line, 1-12" buried steel swd line, 1-8" buried steel gas lift lines will be constructed along the proposed road buried in the same 60' trench. Please see Attachment M for route.

Production Facilities map:

Vaca_Draw_20_17_Fed_East_Zone_1_CTB_Battery_Layout_20200219143626.pdf

Vaca_Draw_20_17_Fed_E2E2_Pad_1_Flow_Gas_lift_ROW_20200219143806.pdf

Vaca_Draw_20_17_Fed_East_Zone_2_CTB_Battery_Layout_20200219143621.pdf

Section 5 - Location and Types of Water Supply

Water Source Table

Water source type: MUNICIPAL	
Water source use type:	SURFACE CASING INTERMEDIATE/PRODUCTION CASING
Source latitude:	Source longitude:
Source datum:	
Water source permit type:	WATER RIGHT
Permit Number:	
Water source transport method:	TRUCKING PIPELINE
Source land ownership: STATE	
Source transportation land ownership: STATE	
Water source volume (barrels): 5000	Source volume (acre-feet): 0.6444655

Well Name: VACA DRAW 20-17 FEDERAL	Well Location: T25S / R33E / SEC 20 / SESE / 32.109732 / -103.588417	County or Parish/State: LEA / NM
Well Number: 61H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM0026394, NMNM26394	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002547961	Well Status: Approved Application for Permit to Drill	Operator: CIMAREX ENERGY COMPANY

Source volume (gal): 210000

Water source and transportation map:

Vaca_Draw_20_17_Fed_E2E2_Pad_1_Drilling_Water_Route_20200219144615.pdf

Water source comments:

New water well? NO

New Water Well Info

Well latitude:	Well Longitude:	Well datum:
Well target aquifer:		
Est. depth to top of aquifer(ft):	Est thickness of aquifer:	
Aquifer comments:		
Aquifer documentation:		
Well depth (ft):	Well casing type:	
Well casing outside diameter (in.):	Well casing inside diameter (in.):	
New water well casing?	Used casing source:	
Drilling method:	Drill material:	
Grout material:	Grout depth:	
Casing length (ft.):	Casing top depth (ft.):	
Well Production type:	Completion Method:	
Water well additional information:		
State appropriation permit:		
Additional information attachment:		

Section 6 - Construction Materials

Using any construction materials: YES

Construction Materials description: Caliche will be obtained from the actual well site if available. If not available onsite caliche will be obtained for a pit located in Sec.16-25S-32E Lea,NM.

Construction Materials source location attachment:

Section 7 - Methods for Handling Waste

Waste type: SEWAGE

Waste content description: Human waste

Amount of waste: 300 gallons

Waste disposal frequency : Weekly

Safe containment description: Waste will be properly contined and disposed of properly at a state approved disopal facility.

Safe containmant attachment:

Well Name: VACA DRAW 20-17 FEDERAL	Well Location: T25S / R33E / SEC 20 / SESE / 32.109732 / -103.588417	County or Parish/State: LEA / NM
Well Number: 61H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM0026394, NMNM26394	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002547961	Well Status: Approved Application for Permit to Drill	Operator: CIMAREX ENERGY COMPANY

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** PRIVATE

Disposal type description:

Disposal location description: A licensed 3rd party contractor will be used to haul and dispose human waste.

Waste type: GARBAGE

Waste content description: garbage & trash produced during drilling & completion operations

Amount of waste: 32500 pounds

Waste disposal frequency : Weekly

Safe containment description: N/A

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL

Disposal type description:

Disposal location description: Windmill Spraying Service hauls trash to Lea County Landfill

Waste type: DRILLING

Waste content description: Drilling Fluids, drill cuttings, water and other waste produced from the well during drilling operations.

Amount of waste: 15000 barrels

Waste disposal frequency : Weekly

Safe containment description: N/A

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL

Disposal type description:

Disposal location description: Haul to R360 commercial disposal

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

Reserve pit length (ft.) **Reserve pit width (ft.)**

Reserve pit depth (ft.) **Reserve pit volume (cu. yd.)**

Is at least 50% of the reserve pit in cut?

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Well Name: VACA DRAW 20-17 FEDERAL	Well Location: T25S / R33E / SEC 20 / SESE / 32.109732 / -103.588417	County or Parish/State: LEA / NM
Well Number: 61H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM0026394, NMNM26394	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002547961	Well Status: Approved Application for Permit to Drill	Operator: CIMAREX ENERGY COMPANY

Cuttings Area being used? NO

Are you storing cuttings on location? NO

Description of cuttings location

Cuttings area length (ft.)	Cuttings area width (ft.)
Cuttings area depth (ft.)	Cuttings area volume (cu. yd.)

Is at least 50% of the cuttings area in cut?

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

Vaca_Draw_20_17_Fed_61H_Wellsite_layout_20200219152535.pdf

Comments:

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance	Multiple Well Pad Name: VACA DRAW 20-17 FEDERAL
	Multiple Well Pad Number: E2E2 PAD

Recontouring attachment:

Vaca_Draw_20_17_Fed_E2E2_Pad_1_Interim_Reclaim_20200219154235.pdf

Drainage/Erosion control construction: To control and prevent potentially contaminated precipitation from leaving the pad site, a perimeter berm and settlement pond will be installed. Contaminated water will be removed from pond, stored in waste tanks, and disposed of at a state approved facility. Standing water or puddles will not be allowed. Drainage ditches would be established and maintained on the pad and along access roads to divert water away from operations. Natural drainage areas disturbed during construction would be re-contoured to near original condition prior to construction. Erosion Control Best Management Practices would be used where necessary and consist of seeding, fiber rolls, water bars, silt fences, and temporary diversion dikes. Areas disturbed during construction that are no longer needed for operations would be obliterated, re-contoured to near original condition prior to construction. Erosion Control Best Management Practices would be used where necessary and consist of seeding, fiber rolls, water bars, silt fences, and temporary diversion dikes. Areas disturbed during construction that are no longer needed for operations would be obliterated, re-contoured, and reclaimed to near original condition to re-establish natural drainage.

Drainage/Erosion control reclamation: All disturbed and re-contoured areas would be reseeded according to specifications. Approved seed mixtures would be certified weed free and consist of grasses, forbs, or shrubs similar to the surrounding area. Compacted soil areas may need to be obliterated and reclaimed to near natural conditions by re-contouring all slopes to facilitate and re-establish natural drainage.

Well Name: VACA DRAW 20-17 FEDERAL	Well Location: T25S / R33E / SEC 20 / SESE / 32.109732 / -103.588417	County or Parish/State: LEA / NM
Well Number: 61H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM0026394, NMNM26394	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002547961	Well Status: Approved Application for Permit to Drill	Operator: CIMAREX ENERGY COMPANY

Well pad proposed disturbance (acres): 7.749	Well pad interim reclamation (acres): 4.24	Well pad long term disturbance (acres): 3.5
Road proposed disturbance (acres): 6.907	Road interim reclamation (acres): 0	Road long term disturbance (acres): 0.426
Powerline proposed disturbance (acres): 0	Powerline interim reclamation (acres): 0	Powerline long term disturbance (acres): 0
Pipeline proposed disturbance (acres): 2.8	Pipeline interim reclamation (acres): 0	Pipeline long term disturbance (acres): 2.8
Other proposed disturbance (acres): 10.5	Other interim reclamation (acres): 0	Other long term disturbance (acres): 10.5
Total proposed disturbance: 27.956	Total interim reclamation: 4.24	Total long term disturbance: 17.226

Disturbance Comments:

Reconstruction method: After well plugging, all disturbed areas would be returned to the original contour or a contour that blends with the surrounding landform including roads unless the surface owner requests that they be left intact. In consultation with the surface owners it will be determined if any gravel or similar materials used to reinforce an area are to be removed, buried, or left in place during final reclamation. Salvaged topsoil, if any, would be re-spread evenly over the surfaces to be re-vegetated. As necessary, the soil surface would be prepared to provide a seedbed for re-establishment of desirable vegetation. Site preparation may include gouging, scarifying, dozer track-walking, mulching, or fertilizing. Reclamation, Re-vegetation, and Drainage: All disturbed and re-contoured areas would be reseeded using techniques outlined under Phase I and II of this plan or as specified by the land owner. Approved seed mixtures would be certified weed free and consist of grasses, forbs, or shrubs similar to the surrounding area. Compacted soil areas may need to be obliterated and reclaimed to near natural conditions by re-contouring all slopes to facilitate and re-establish natural drainage.

Topsoil redistribution: The original stock piled topsoil, if any, will be spread evenly over the areas being reclaimed and the original landform will be restored for all disturbed areas including well pad, production facilities, roads, pipelines, and power line corridors as close as possible to the original topography. The location will then be seeded.

Soil treatment: The soil surface would be prepared to provide a seedbed for reestablishment of desirable vegetation. Establish control of erosion and invasion of non-native plants to reestablish plant community.

Existing Vegetation at the well pad:

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road:

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline:

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances:

Existing Vegetation Community at other disturbances attachment:

Non native seed used? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

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Well Name: VACA DRAW 20-17 FEDERAL	Well Location: T25S / R33E / SEC 20 / SESE / 32.109732 / -103.588417	County or Parish/State: LEA / NM
Well Number: 61H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM0026394, NMNM26394	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002547961	Well Status: Approved Application for Permit to Drill	Operator: CIMAREX ENERGY COMPANY

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed Summary	
Seed Type	Pounds/Acre

Total pounds/Acre:

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: Amithy	Last Name: Crawford
Phone: (432)620-1909	Email: acrawford@cimarex.com

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: na

Weed treatment plan attachment:

Monitoring plan description: na

Monitoring plan attachment:

Success standards: na

Pit closure description: na

Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: WELL PAD

Describe:

Surface Owner: PRIVATE OWNERSHIP

Other surface owner description:

BIA Local Office:

BOR Local Office:

Well Name: VACA DRAW 20-17 FEDERAL	Well Location: T25S / R33E / SEC 20 / SESE / 32.109732 / -103.588417	County or Parish/State: LEA / NM
Well Number: 61H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM0026394, NMNM26394	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002547961	Well Status: Approved Application for Permit to Drill	Operator: CIMAREX ENERGY COMPANY

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Fee Owner: Hughes Properties, LLC (Trey Hughes) **Fee Owner Address:**

Phone: (575)361-3217

Email: trey.hcp@gmail.com

Surface use plan certification: YES

Surface use plan certification document:

Vaca_Draw_20_17_Fed_61H_Surface_Use_agreement_20200219161547.pdf

Surface access agreement or bond: Agreement

Surface Access Agreement Need description: Cimarex and the Surface Owner have entered into negotiations for a Surface Damage Agreement to allow Cimarex permanent access to the proposed well location. Please see attached surface agreement

Surface Access Bond BLM or Forest Service:

BLM Surface Access Bond number:

USFS Surface access bond number:

Disturbance type: PIPELINE

Describe:

Surface Owner: PRIVATE OWNERSHIP

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Well Name: VACA DRAW 20-17 FEDERAL	Well Location: T25S / R33E / SEC 20 / SESE / 32.109732 / -103.588417	County or Parish/State: LEA / NM
Well Number: 61H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM0026394, NMNM26394	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002547961	Well Status: Approved Application for Permit to Drill	Operator: CIMAREX ENERGY COMPANY

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Fee Owner: Hughes Properties, LLC (Trey Hughes) **Fee Owner Address:**
Phone: (575)361-3217 **Email:** trey.hcp@gmail.com

Surface use plan certification: YES

Surface use plan certification document:

Vaca_Draw_20_17_Fed_61H_Surface_Use_agreement_20200219163125.pdf

Surface access agreement or bond: Agreement

Surface Access Agreement Need description: Cimarex and the Surface Owner have entered into negotiations for a Surface Damage Agreement to allow Cimarex permanent access to the proposed well location. Please see attached surface use agreement

Surface Access Bond BLM or Forest Service:

BLM Surface Access Bond number:

USFS Surface access bond number:

Disturbance type: EXISTING ACCESS ROAD

Describe:

Surface Owner: PRIVATE OWNERSHIP

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Well Name: VACA DRAW 20-17 FEDERAL	Well Location: T25S / R33E / SEC 20 / SESE / 32.109732 / -103.588417	County or Parish/State: LEA / NM
Well Number: 61H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM0026394, NMNM26394	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002547961	Well Status: Approved Application for Permit to Drill	Operator: CIMAREX ENERGY COMPANY

Fee Owner: Hughes Properties, LLC (Trey Hughes) **Fee Owner Address:**
Phone: (575)361-3217 **Email:** trey.hcp@gmail.com

Surface use plan certification: YES

Surface use plan certification document:
Vaca_Draw_20_17_Fed_61H_Surface_Use_agreement_20200219162905.pdf

Surface access agreement or bond: Agreement

Surface Access Agreement Need description: Cimarex and the Surface Owner have entered into negotiations for a Surface Damage Agreement to allow Cimarex permanent access to the proposed well location. Please see attached surface use agreement

Surface Access Bond BLM or Forest Service:

BLM Surface Access Bond number:

USFS Surface access bond number:

Section 12 - Other Information

Right of Way needed? YES **Use APD as ROW?** YES

ROW Type(s): 281001 ROW - ROADS,288100 ROW – O&G Pipeline,288101 ROW – O&G Facility Sites,289001 ROW-O&G Well Pad

ROW Applications

SUPO Additional Information:

Use a previously conducted onsite? YES

Previous Onsite information: Onsite with BLM(Jeff Robertson) and Cimarex Barry Hunt on July 24, 2018

Other SUPO Attachment

Vaca_Draw_20_17_Fed_E2E2_Pad_1_Road_Description_20200219163628.pdf
Vaca_Draw_20_17_Fed_E2E2_Pad_1_Public_Access_20200219163644.pdf
Vaca_Draw_20_17_Fed_E2E2_Pad_1_Flow_Gas_lift_ROW_20200219163701.pdf
Vaca_Draw_20_17_Fed_E2E2__Well_list_20200219163945.docx
Vaca_Draw_20_17_Fed_61H_SUPO_Plan_20200226140352.pdf

Well Name: VACA DRAW 20-17 FEDERAL	Well Location: T25S / R33E / SEC 20 / SESE / 32.109732 / -103.588417	County or Parish/State: LEA / NM
Well Number: 61H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM0026394, NMNM26394	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002547961	Well Status: Approved Application for Permit to Drill	Operator: CIMAREX ENERGY COMPANY

Section 1 - General

Would you like to address long-term produced water disposal? NO

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: PWD disturbance (acres):

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Lined pit Monitor description:

Lined pit Monitor attachment:

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

Received by OCD: 5/18/2021 1:00:27 PM

Page 53 of 118

Well Name: VACA DRAW 20-17 FEDERAL	Well Location: T25S / R33E / SEC 20 / SESE / 32.109732 / -103.588417	County or Parish/State: LEA / NM
Well Number: 61H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM0026394, NMNM26394	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002547961	Well Status: Approved Application for Permit to Drill	Operator: CIMAREX ENERGY COMPANY

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD disturbance (acres): PWD surface owner:

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

Do you propose to put the produced water to beneficial use?

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

Unlined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Well Name: VACA DRAW 20-17 FEDERAL	Well Location: T25S / R33E / SEC 20 / SESE / 32.109732 / -103.588417	County or Parish/State: LEA / NM
Well Number: 61H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM0026394, NMNM26394	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002547961	Well Status: Approved Application for Permit to Drill	Operator: CIMAREX ENERGY COMPANY

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number:

Injection well name:

Assigned injection well API number?

Injection well API number:

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Other PWD discharge volume (bbl/day):

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:

Operator Certification

Well Name: VACA DRAW 20-17 FEDERAL	Well Location: T25S / R33E / SEC 20 / SESE / 32.109732 / -103.588417	County or Parish/State: LEA / NM
Well Number: 61H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM0026394, NMNM26394	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002547961	Well Status: Approved Application for Permit to Drill	Operator: CIMAREX ENERGY COMPANY

Operator Certification

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

NAME:	Signed on: 03/03/2021	
Title:		
Street Address:		
City:	State:	Zip:
Phone:		
Email address:		

Field Representative

Representative Name:		
Street Address:		
City:	State:	Zip:
Phone:		
Email address:		

NOI Attachments

Procedure Description

- Vaca_Draw_20_17_Federal_61H_Updated_Wellsite_Layout_20210303154047.pdf
- Vaca_Draw_20_17_Federal_61H_Offline_Cement_Procedure_20210301082814.pdf

Well Name: VACA DRAW 20-17 FEDERAL	Well Location: T25S / R33E / SEC 20 / SESE / 32.109732 / -103.588417	County or Parish/State: LEA / NM
Well Number: 61H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM0026394, NMNM26394	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002547961	Well Status: Approved Application for Permit to Drill	Operator: CIMAREX ENERGY COMPANY

Vaca_Draw_20_17_Federal_61H_Driectional_and_AC_20210301082735.pdf

Vaca_Draw_20_17_Fed_61H_WH_BOP_Ck_Manifold_20210301082547.pdf

Vaca_Draw_20_17_Fed_61H_Drilling_Plan_20210301082537.pdf

Vaca_Draw_20_17_Federal_61H_C102_20210301082527.pdf

Operator Certification

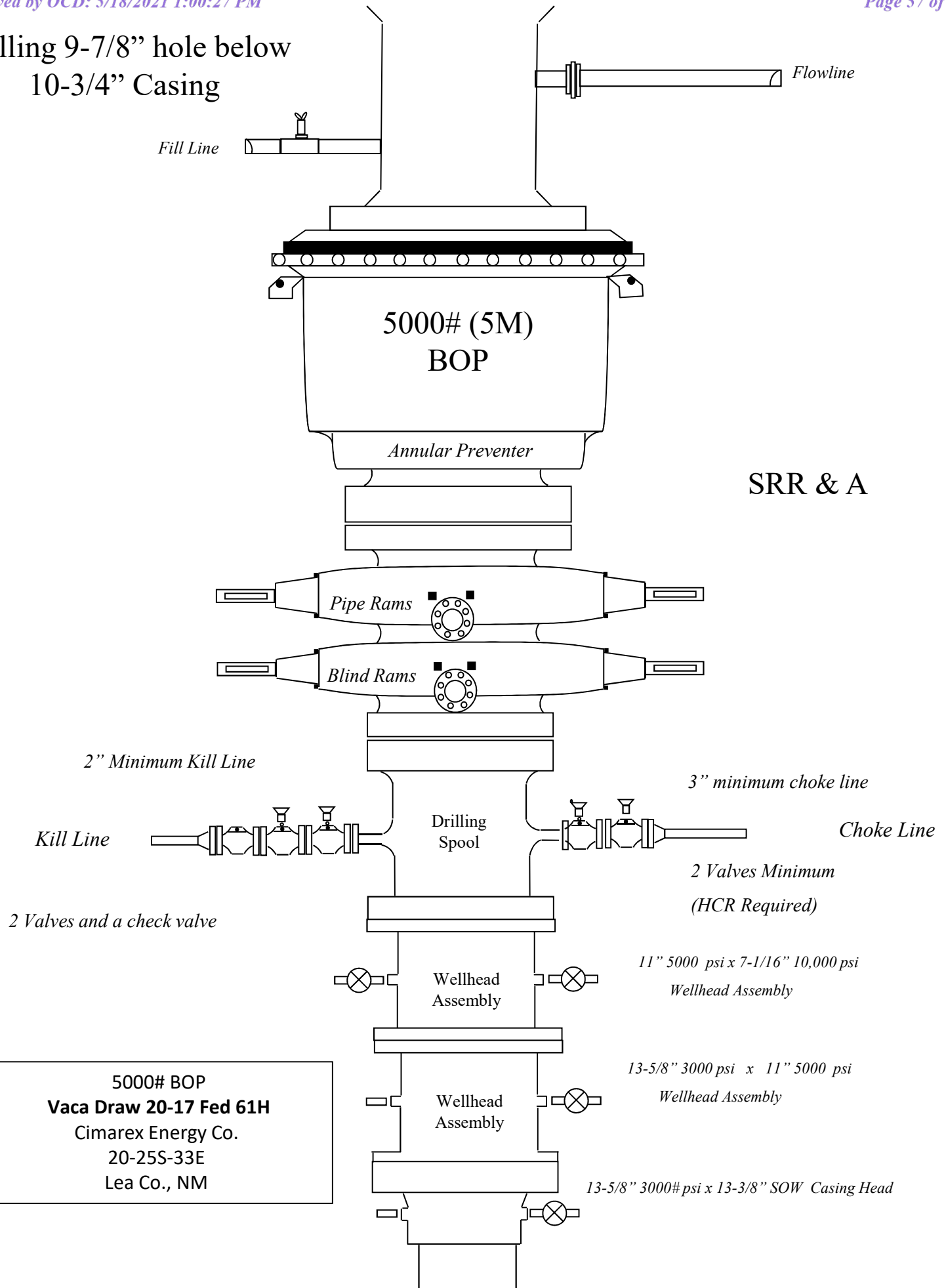
I certify that the foregoing is true and correct. Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any 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.

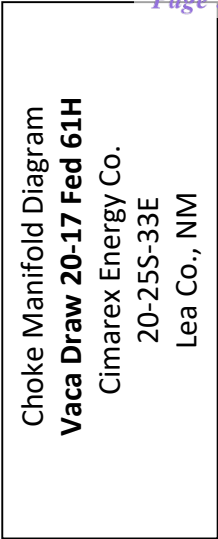
Operator Electronic Signature: CRAWFORD	Signed on: MAR 03, 2021 03:42 PM
Name: CIMAREX ENERGY COMPANY	
Title: Regulatory Analyst	
Street Address: NOT ENTERED	
City: NOT ENTERED	State: NOT ENTERED
Phone: (432) 620-1936	
Email address: tstathem@cimarex.com	

Field Representative

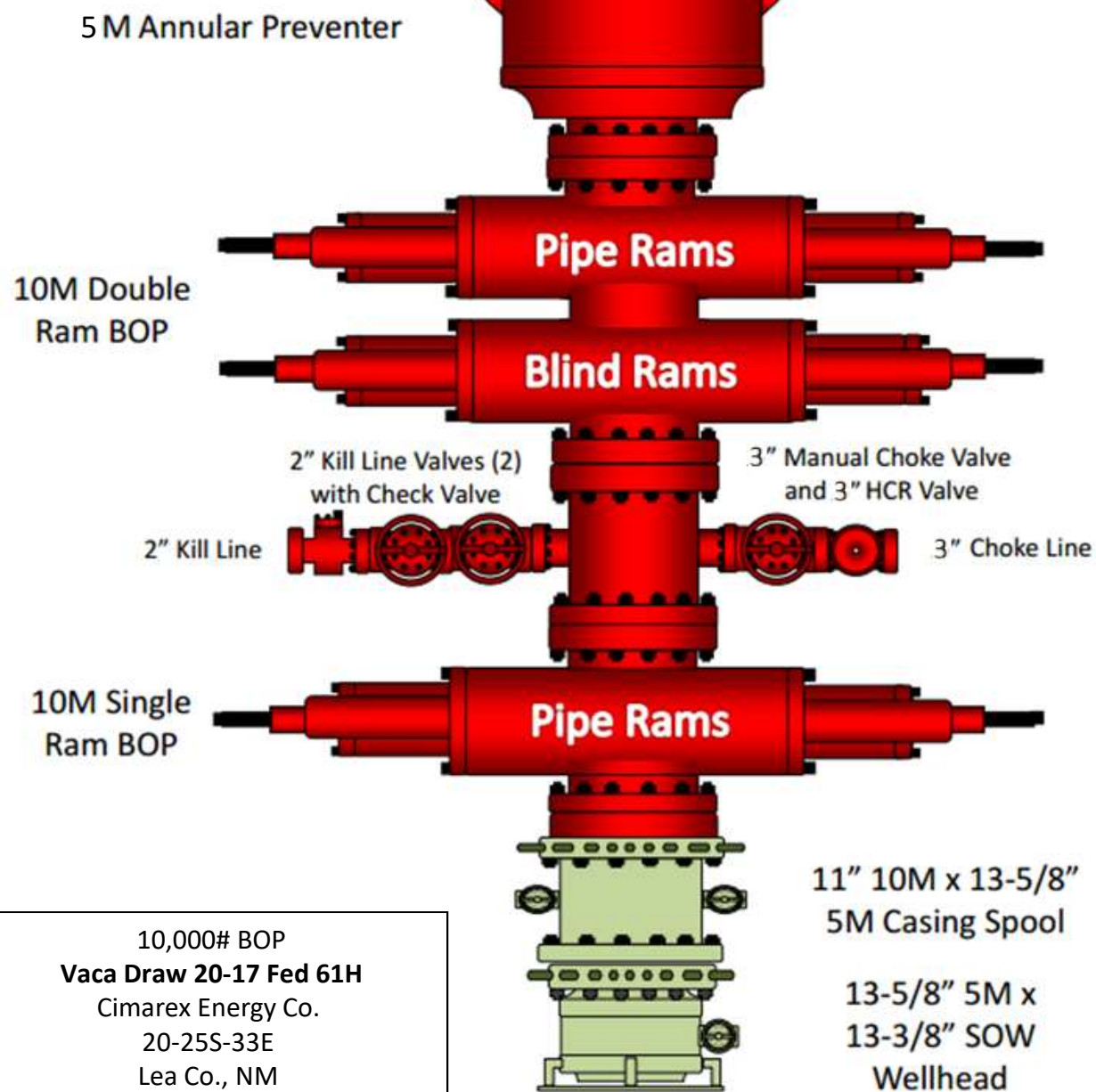
Representative Name:		
Street Address:		
City:	State:	Zip:
Phone:		
Email address:		

Drilling 9-7/8" hole below
10-3/4" Casing





Drilling 6 3/4" Hole
below 7" Casing







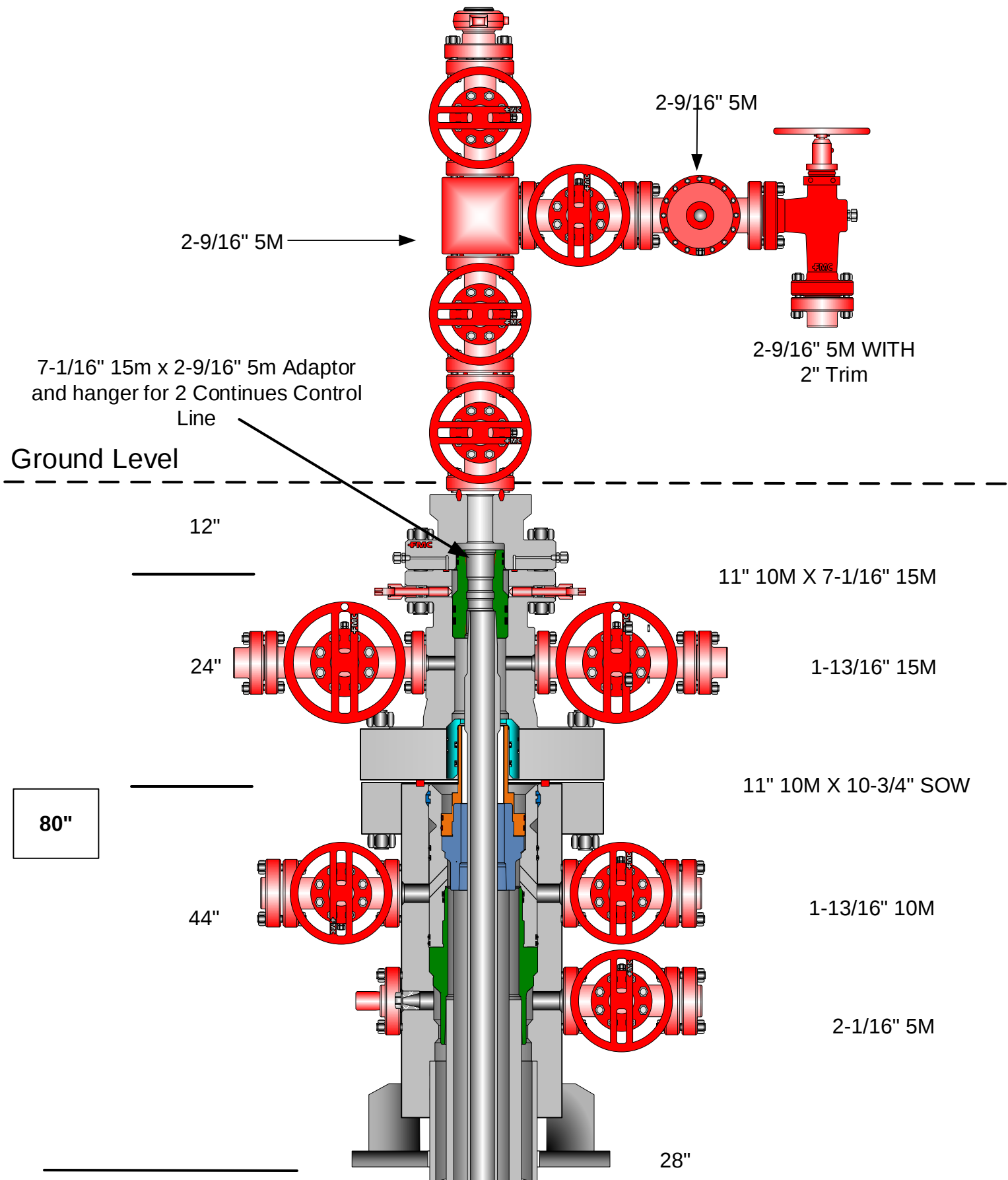
CACTUS FOR SERVICE
WEARBUSHING
IN CASING HEAD &
CASING SPOOL

LEA CO., NM

Multi-bowl Wellhead Diagram

Vaca Draw 20-17 Fed 61H
Cimarex Energy Co.

20-25S-33E
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
14 3/4	0	985	985	10-3/4"	40.50	J-55	BT&C	3.70	7.34	15.77
9 7/8	0	13049	12876	7"	29.00	L-80	BT&C	1.17	1.35	1.81
6 3/4	0	12400	12400	5-1/2"	23.00	L-80	BT&C	1.35	1.09	2.39
6 3/4	12400	22937	12295	5"	18.00	P-110	BT&C	1.64	1.66	(306.88)
BLM Minimum Safety Factor								1.125	1	1.6 Dry 1.8 Wet

1. Geological Formations

TVD of target 12,925

Pilot Hole TD N/A

MD at TD 22,936

Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
Rustler	935	N/A	
Top of Salt	1298	N/A	
Base of Salt	4714	N/A	
Lamar	4909	N/A	
Bell Canyon	4937	N/A	
Cherry Canyon	5990	N/A	
Brushy Canyon	7536	N/A	
Bone Spring	9032	N/A	
Leonard Shale	9087	N/A	
Avalon Shale	9312	N/A	
1st Bone Spring Sand	10011	N/A	
2nd Bone Spring Carb	10223	N/A	
2nd Bone Spring Sand	10583	N/A	
3rd Bone Spring Carb	11071	N/A	
3rd Bone Spring Sand	11722	N/A	
Wolfcamp	12189	N/A	
Wolfcamp Y Sand	12302	N/A	
Wolfcamp A1 Shale	12341	N/A	

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
14 3/4	0	985	985	10-3/4"	40.50	J-55	BT&C	3.70	7.34	15.77
9 7/8	0	13049	12876	7"	29.00	L-80	BT&C	1.17	1.35	1.81
6 3/4	0	12400	12400	5-1/2"	23.00	L-80	BT&C	1.35	1.09	2.39
6 3/4	12400	22937	12295	5"	18.00	P-110	BT&C	1.64	1.66	(306.88)
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

Request Variance for 5-1/2" x 7-5/8" annular clearance. The portion that does not meet clearance will not be cemented

Cimarex Energy Co., Vaca Draw 20-17 Federal 61H

	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?	N

3. Cementing Program

Casing	# Sk	Wt. lb/gal	Yld ft ³ /sack	H ₂ O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surface	332	13.50	1.72	9.15	15.5	Lead: Class C + Bentonite
	156	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Intermediate Stage 1	780	10.30	3.64	22.18		Lead: Tuned Light + LCM
	243	14.80	1.36	6.57	9.5	Tail: Class C + Retarder
Intermediate Stage 2	976	12.90	1.88	9.65	12	Lead: 35:65 (Poz:C) + Salt + Bentonite
Production	1014	14.20	1.30	5.86	14:30	Tail: 50:50 (Poz:H) + Salt + Bentonite + Fluid Loss + Dispersant + SMS

DV tool with possible annular casing packer as needed is proposed at a depth of +/- 4,900'.

Casing String	TOC	% Excess
Surface	0	42
Intermediate Stage 1	4900	47
Intermediate Stage 2	0	40
Production	12849	25

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
9 7/8	13 5/8	5M	Annular	X	5M
			Blind Ram		
			Pipe Ram	X	
			Double Ram	X	
			Other		
6 3/4	13 5/8	10M	Annular	X	50% of working pressure
			Blind Ram		10M
			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.
Y	Are anchors required by manufacturer?

5. Mud Program

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0' to 985'	Fresh Water	7.83 - 8.33	28	N/C
985' to 13049'	Brine Diesel Emulsion	8.50 - 9.00	30-35	N/C
13049' to 22937'	OBM	12.30 - 12.80	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.

The Brine Emulsion is completely saturated brine fluid that ties diesel into itself to lower the weight of the fluid. The drilling fluid is completely salt saturated.

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 from TD 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	8183 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	H ₂ S is present
X	H ₂ S plan is attached

8. Other Facets of Operation**9. Wellhead**

A multi-bowl wellhead system will be utilized.

After running the 10-3/4" surface casing, a 13 5/8" BOP/BOPE system with a minimum working pressure of 10000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 10000 psi test. Annular will be tested to 50% of working pressure. 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 10000 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.

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) 746-3460 Fax: (505) 476-3462

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

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

☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-47961		² Pool Code 98180	³ Pool Name Wildcat Wolfcamp	
⁴ Property Code 319775	⁵ Property Name VACA DRAW 20-17 FEDERAL			⁶ Well Number 61H
⁷ OCRID No. 215099	⁸ Operator Name CIMAREX ENERGY CO.			⁹ Elevation 3398.3'

¹⁰Surface Location

UL or lot no. P	Section 20	Township 25S	Range 33E	Lot Idn	Feet from the 390	North/South line SOUTH	Feet from the 860	East/West line EAST	County LEA
--------------------	---------------	-----------------	--------------	---------	----------------------	---------------------------	----------------------	------------------------	---------------

¹¹ Bottom Hole Location If Different From Surface

UL or lot no. A	Section 17	Township 25S	Range 33E	Lot Idn	Feet from the 100	North/South line NORTH	Feet from the 698	East/West line EAST	County LEA
¹² Dedicated Acres 640		¹³ Joint or Infill		¹⁴ Consolidation Code		¹⁵ Order No.			

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



SCALE

DRAWN BY: T.A. 08-08-19
REV: 2 02-18-21 C.D. (LP & BHL CHANGE)

LINE TABLE		
LINE	DIRECTION	LENGTH
L1	S89°56'49"W	2644.60'
L2	N89°56'44"E	162.00'

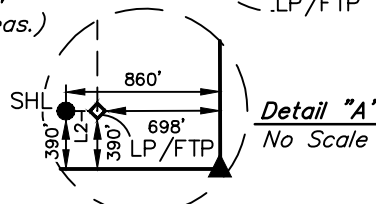
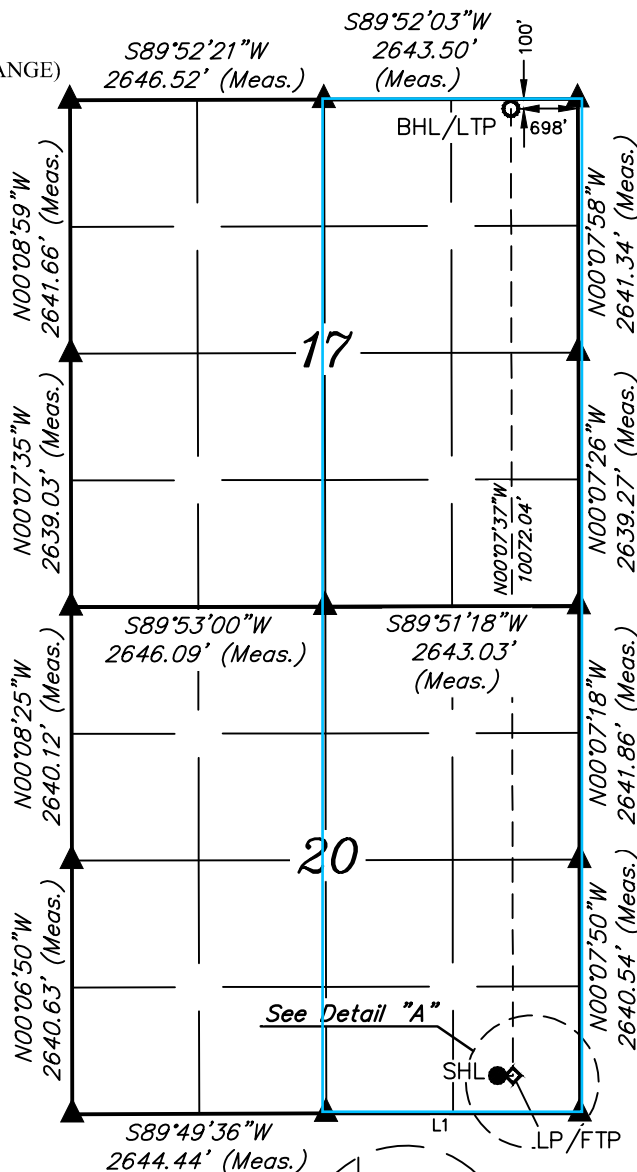
NAD 83 (SURFACE HOLE LOCATION)
LATITUDE = 32°06'35.63" (32.109897°)
LONGITUDE = 103°35'18.77" (103.588546°)
NAD 27 (SURFACE HOLE LOCATION)
LATITUDE = 32°06'35.18" (32.109773°)
LONGITUDE = 103°35'17.07" (103.588075°)
STATE PLANE NAD 83 (N.M. EAST)
N: 404513.69' E: 771939.65'
STATE PLANE NAD 27 (N.M. EAST)
N: 404455.91' E: 730753.47'

NAD 83 (LP/FTP)
LATITUDE = 32°06'35.63" (32.109896°)
LONGITUDE = 103°35'16.88" (103.588023°)
NAD 27 (LP/FTP)
LATITUDE = 32°06'35.18" (32.109772°)
LONGITUDE = 103°35'15.19" (103.587551°)
STATE PLANE NAD 83 (N.M. EAST)
N: 404514.52' E: 772101.62'
STATE PLANE NAD 27 (N.M. EAST)
N: 404456.74' E: 730915.43'

NAD 83 (BHL/LTP)
LATITUDE = 32°08'15.28" (32.137578°)
LONGITUDE = 103°35'16.82" (103.588006°)
NAD 27 (BHL/LTP)
LATITUDE = 32°08'14.83" (32.137453°)
LONGITUDE = 103°35'15.12" (103.587533°)
STATE PLANE NAD 83 (N.M. EAST)
N: 414584.63' E: 772037.22'
STATE PLANE NAD 27 (N.M. EAST)
N: 414526.60' E: 730851.51'

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)



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 3/1/21
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.

July 27, 2018

Date of Survey _____
Signature and Seal of Professional Surveyor: _____



Certificate Number:



Cimarex Vaca Draw 20-17 Federal #61H Rev1 RM 24Feb21 Proposal

Geodetic Report

(Def Plan)



Report Date: February 24, 2021 - 03:34 PM
Client: Cimarex Energy
Field: NM Lea County (NAD 83)
Structure / Slot: Cimarex Vaca Draw 20-17 Federal #61H / New Slot
Well: Vaca Draw 20-17 Federal #61H
Borehole: Vaca Draw 20-17 Federal #61H
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Vaca Draw 20-17 Federal #61H Rev1 RM 24Feb21
Survey Date: February 24, 2021
Tort / AHD / DDI / ERD Ratio: 100.000 ° / 10468.432 ft / 6.269 / 0.810
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 6' 35.63006", W 103° 35' 18.76651"
Location Grid N/E Y/X: N 404513.690 ftUS, E 771939.650 ftUS
CRS Grid Convergence Angle: 0.3959 °
Grid Scale Factor: 0.99997
Version / Patch: 2.10.824.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 359.634 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3421.300 ft above MSL
Seabed / Ground Elevation: 3398.300 ft above MSL
Magnetic Declination: 6.449 °
Total Gravity Field Strength: 998.4331mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 47594.875 nT
Magnetic Dip Angle: 59.675 °
Declination Date: February 24, 2021
Magnetic Declination Model: HDGM 2020
North Reference: Grid North
Grid Convergence Used: 0.3959 °
Total Corr Mag North->Grid North: 6.0531 °
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 [390° FSL, 860° FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	404513.69	771939.65	N 32.1099	W 103.5885
	100.00	0.00	135.34	100.00	0.00	0.00	0.00	0.00	404513.69	771939.65	N 32.1099	W 103.5885
	200.00	0.00	135.34	200.00	0.00	0.00	0.00	0.00	404513.69	771939.65	N 32.1099	W 103.5885
	300.00	0.00	135.34	300.00	0.00	0.00	0.00	0.00	404513.69	771939.65	N 32.1099	W 103.5885
	400.00	0.00	135.34	400.00	0.00	0.00	0.00	0.00	404513.69	771939.65	N 32.1099	W 103.5885
	500.00	0.00	135.34	500.00	0.00	0.00	0.00	0.00	404513.69	771939.65	N 32.1099	W 103.5885
	600.00	0.00	135.34	600.00	0.00	0.00	0.00	0.00	404513.69	771939.65	N 32.1099	W 103.5885
	700.00	0.00	135.34	700.00	0.00	0.00	0.00	0.00	404513.69	771939.65	N 32.1099	W 103.5885
	800.00	0.00	135.34	800.00	0.00	0.00	0.00	0.00	404513.69	771939.65	N 32.1099	W 103.5885
	900.00	0.00	135.34	900.00	0.00	0.00	0.00	0.00	404513.69	771939.65	N 32.1099	W 103.5885
	1000.00	0.00	135.34	1000.00	0.00	0.00	0.00	0.00	404513.69	771939.65	N 32.1099	W 103.5885
	1100.00	0.00	135.34	1100.00	0.00	0.00	0.00	0.00	404513.69	771939.65	N 32.1099	W 103.5885
	1200.00	0.00	135.34	1200.00	0.00	0.00	0.00	0.00	404513.69	771939.65	N 32.1099	W 103.5885
	1300.00	0.00	135.34	1300.00	0.00	0.00	0.00	0.00	404513.69	771939.65	N 32.1099	W 103.5885
	1400.00	0.00	135.34	1400.00	0.00	0.00	0.00	0.00	404513.69	771939.65	N 32.1099	W 103.5885
	1500.00	0.00	135.34	1500.00	0.00	0.00	0.00	0.00	404513.69	771939.65	N 32.1099	W 103.5885
	1600.00	0.00	135.34	1600.00	0.00	0.00	0.00	0.00	404513.69	771939.65	N 32.1099	W 103.5885
	1700.00	0.00	135.34	1700.00	0.00	0.00	0.00	0.00	404513.69	771939.65	N 32.1099	W 103.5885
	1800.00	0.00	135.34	1800.00	0.00	0.00	0.00	0.00	404513.69	771939.65	N 32.1099	W 103.5885
	1900.00	0.00	135.34	1900.00	0.00	0.00	0.00	0.00	404513.69	771939.65	N 32.1099	W 103.5885
Nudge 2°/100' DLS	2000.00	0.00	135.34	2000.00	0.00	0.00	0.00	0.00	404513.69	771939.65	N 32.1099	W 103.5885
	2100.00	2.00	135.34	2099.98	-1.25	-1.24	1.23	2.00	404512.45	771940.88	N 32.1099	W 103.5885
	2200.00	4.00	135.34	2199.84	-5.00	-4.96	4.90	2.00	404508.73	771944.55	N 32.1099	W 103.5885
Hold Nudge	2250.00	5.00	135.34	2249.68	-7.80	-7.75	7.66	2.00	404505.94	771947.31	N 32.1099	W 103.5885
	2300.00	5.00	135.34	2299.49	-10.92	-10.85	10.73	0.00	404502.84	771950.37	N 32.1099	W 103.5885
	2400.00	5.00	135.34	2399.11	-17.16	-17.05	16.85	0.00	404496.64	771956.50	N 32.1099	W 103.5885
	2500.00	5.00	135.34	2498.73	-23.40	-23.25	22.98	0.00	404490.44	771962.63	N 32.1098	W 103.5885
	2600.00	5.00	135.34	2598.35	-29.64	-29.45	29.10	0.00	404484.24	771968.75	N 32.1098	W 103.5885
	2700.00	5.00	135.34	2697.97	-35.88	-35.65	35.23	0.00	404478.04	771974.88	N 32.1098	W 103.5884
	2800.00	5.00	135.34	2797.59	-42.12	-41.85	41.35	0.00	404471.84	771981.00	N 32.1098	W 103.5884
	2900.00	5.00	135.34	2897.21	-48.35	-48.05	47.48	0.00	404465.64	771987.13	N 32.1098	W 103.5884
	3000.00	5.00	135.34	2996.83	-54.59	-54.25	53.61	0.00	404459.44	771993.25	N 32.1097	W 103.5884
	3100.00	5.00	135.34	3096.45	-60.83	-60.45	59.73	0.00	404453.24	771999.38	N 32.1097	W 103.5884
	3200.00	5.00	135.34	3196.07	-67.07	-66.65	65.86	0.00	404447.04	772005.51	N 32.1097	W 103.5883
	3300.00	5.00	135.34	3295.69	-73.31	-72.85	71.98	0.00	404440.84	772011.63	N 32.1097	W 103.5883
	3400.00	5.00	135.34	3395.31	-79.55	-79.05	78.11	0.00	404434.64	772017.76	N 32.1097	W 103.5883
	3500.00	5.00	135.34	3494.93	-85.79	-85.25	84.24	0.00	404428.44	772023.88	N 32.1097	W 103.5883
	3600.00	5.00	135.34	3594.55	-92.03	-91.45	90.36	0.00	404422.24	772030.01	N 32.1096	W 103.5883
	3700.00	5.00	135.34	3694.17	-98.26	-97.65	96.49	0.00	404416.04	772036.13	N 32.1096	W 103.5882
	3800.00	5.00	135.34	3793.78	-104.50	-103.85	102.61	0.00	404409.84	772042.26	N 32.1096	W 103.5882
	3900.00	5.00	135.34	3893.40	-110.74	-110.05	108.74	0.00	404403.64	772048.39	N 32.1096	W 103.5882
	4000.00	5.00	135.34	3993.02	-116.98	-116.25	114.86	0.00	404397.45	772054.51	N 32.1096	W 103.5882
	4100.00	5.00	135.34	4092.64	-123.22	-122.45	120.99	0.00	404391.25	772060.64	N 32.1096	W 103.5882
	4200.00	5.00	135.34	4192.26	-129.46	-128.65	127.12	0.00	404385.05	772066.76	N 32.1095	W 103.5881
	4300.00	5.00	135.34	4291.88	-135.70	-134.85	133.24	0.00	404378.85	772072.89	N 32.1095	W 103.5881
	4400.00	5.00	135.34	4391.50	-141.93	-141.05	139.37	0.00	404372.65	772079.01	N 32.1095	W 103.5881
	4500.00	5.00	135.34	4491.12	-148.17	-147.25	145.49	0.00	404366.45	772085.14	N 32.1095	W 103.5881
	4600.00	5.00	135.34	4590.74	-154.41	-153.45	151.62	0.00	404360.25	772091.27	N 32.1095	W 103.5881
Drop to Vertical 2°/100' DLS	4661.28	5.00	135.34	4651.78	-158.23	-157.25	155.37	0.00	404356.45	772095.02	N 32.1095	W 103.5880
	4700.00	4.23	135.34	4690.38	-160.46	-159.46	157.56	2.00	404354.23	772097.21	N 32.1095	W 103.5880
	4800.00	2.23	135.34	4790.22	-164.49	-163.46	161.52	2.00	404350.23	772101.16	N 32.1094	W 103.5880
	4900.00	0.23	135.34	4890.19	-166.02	-164.98	163.02	2.00	404348.71	772102.67	N 32.1094	W 103.5880
Hold Vertical	4911.28	0.00	135.34	4901.47	-166.04	-165.00	163.04	2.00	404348.70	772102.68	N 32.1094	W 103.5880
	5000.00	0.00	135.34	4990.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	5100.00	0.00	135.34	5090.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	5200.00	0.00	135.34	5190.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	5300.00	0.00	135.34	5290.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	5400.00	0.00	135.34	5390.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	5500.00	0.00	135.34	5490.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	5600.00	0.00	135.34	5590.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	5700.00	0.00	135.34	5690.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	5800.00	0.00	135.34	5790.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	5900.00	0.00	135.34	5890.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	6000.00	0.00	135.34	5990.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	6100.00	0.00	135.34	6090.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	6200.00	0.00	135.34	6190.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	6300.00	0.00	135.34	6290.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	6400.00	0.00	135.34	6390.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	6500.00	0.00	135.34	6490.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	6600.00	0.00	135.34	6590.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	6700.00	0.00	135.34	6690.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	6800.00	0.00	135.34	6790.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	6900.00	0.00	135.34	6890.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	7000.00	0.00	135.34	6990.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	7100.00	0.00	135.34	7090.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880

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 °)
	7200.00	0.00	135.34	7190.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	7300.00	0.00	135.34	7290.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	7400.00	0.00	135.34	7390.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	7500.00	0.00	135.34	7490.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	7600.00	0.00	135.34	7590.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	7700.00	0.00	135.34	7690.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	7800.00	0.00	135.34	7790.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	7900.00	0.00	135.34	7890.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	8000.00	0.00	135.34	7990.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	8100.00	0.00	135.34	8090.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	8200.00	0.00	135.34	8190.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	8300.00	0.00	135.34	8290.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	8400.00	0.00	135.34	8390.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	8500.00	0.00	135.34	8490.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	8600.00	0.00	135.34	8590.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	8700.00	0.00	135.34	8690.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	8800.00	0.00	135.34	8790.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	8900.00	0.00	135.34	8890.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	9000.00	0.00	135.34	8990.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	9100.00	0.00	135.34	9090.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	9200.00	0.00	135.34	9190.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	9300.00	0.00	135.34	9290.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	9400.00	0.00	135.34	9390.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	9500.00	0.00	135.34	9490.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	9600.00	0.00	135.34	9590.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	9700.00	0.00	135.34	9690.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	9800.00	0.00	135.34	9790.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	9900.00	0.00	135.34	9890.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	10000.00	0.00	135.34	9990.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	10100.00	0.00	135.34	10090.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	10200.00	0.00	135.34	10190.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	10300.00	0.00	135.34	10290.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	10400.00	0.00	135.34	10390.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	10500.00	0.00	135.34	10490.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	10600.00	0.00	135.34	10590.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	10700.00	0.00	135.34	10690.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	10800.00	0.00	135.34	10790.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	10900.00	0.00	135.34	10890.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	11000.00	0.00	135.34	10990.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	11100.00	0.00	135.34	11090.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	11200.00	0.00	135.34	11190.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	11300.00	0.00	135.34	11290.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	11400.00	0.00	135.34	11390.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	11500.00	0.00	135.34	11490.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	11600.00	0.00	135.34	11590.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	11700.00	0.00	135.34	11690.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	11800.00	0.00	135.34	11790.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	11900.00	0.00	135.34	11890.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	12000.00	0.00	135.34	11990.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	12100.00	0.00	135.34	12090.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	12200.00	0.00	135.34	12190.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	12300.00	0.00	135.34	12290.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	12400.00	0.00	135.34	12390.19	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
KOP - Build 12°/100' DLS	12424.81	0.00	135.34	12415.00	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
	12500.00	9.02	359.63	12489.88	-160.13	-159.09	163.00	12.00	404354.60	772102.64	N 32.1095	W 103.5880
	12600.00	21.02	359.63	12586.29	-134.26	-133.22	162.83	12.00	404380.48	772102.48	N 32.1095	W 103.5880
	12700.00	33.02	359.63	12675.20	-88.90	-87.87	162.54	12.00	404425.83	772102.19	N 32.1097	W 103.5880
	12800.00	45.02	359.63	12752.75	-26.06	-25.02	162.14	12.00	404488.67	772101.79	N 32.1098	W 103.5880
FTP [390' FSL, 698' FEL]	12835.25	49.25	359.63	12776.72	-0.22	0.81	161.98	12.00	404514.50	772101.62	N 32.1099	W 103.5880
	12900.00	57.02	359.63	12815.54	51.54	52.58	161.64	12.00	404566.26	772101.29	N 32.1100	W 103.5880
	13000.00	69.02	359.63	12860.82	140.50	141.53	161.08	12.00	404655.22	772100.72	N 32.1103	W 103.5880
Build 4°/100' DLS	13049.81	75.00	359.63	12876.19	187.85	188.88	160.77	12.00	404702.56	772100.42	N 32.1104	W 103.5880
	13100.00	77.01	359.63	12888.33	236.55	237.58	160.46	4.00	404751.26	772100.11	N 32.1105	W 103.5880
	13200.00	81.01	359.63	12907.40	334.70	335.72	159.83	4.00	404849.40	772099.48	N 32.1108	W 103.5880
	13300.00	85.01	359.63	12919.57	433.93	434.96	159.20	4.00	404948.63	772098.84	N 32.1111	W 103.5880
	13400.00	89.01	359.63	12924.79	533.78	534.80	158.56	4.00	405048.47	772098.21	N 32.1114	W 103.5880
Landing Point	13424.81	90.00	359.63	12925.00	558.58	559.60	158.40	4.00	405073.28	772098.05	N 32.1114	W 103.5880
	13500.00	90.00	359.63	12925.00	633.77	634.80	157.92	0.00	405148.47	772097.57	N 32.1116	W 103.5880
	13600.00	90.00	359.63	12925.00	733.77	734.79	157.28	0.00	405248.46	772096.93	N 32.1119	W 103.5880
	13700.00	90.00	359.63	12925.00	833.77	834.79	156.64	0.00	405348.45	772096.29	N 32.1122	W 103.5880
	13800.00	90.00	359.63	12925.00	933.77	934.79	156.00	0.00	405448.45	772095.65	N 32.1125	W 103.5880
	13900.00	90.00	359.63	12925.00	1033.77	1034.79	155.36	0.00	405548.44	772095.01	N 32.1127	W 103.5880
	14000.00	90.00	359.63	12925.00	1133.77	1134.79	154.72	0.00	405648.44	772094.37	N 32.1130	W 103.5880
	14100.00	90.00	359.63	12925.00	1233.77	1234.78	154.08	0.00	405748.43	772093.73	N 32.1133	W 103.5880
	14200.00	90.00	359.63	12925.00	1333.77	1334.78	153.44	0.00	405848.43	772093.09	N 32.1136	W 103.5880
	14300.00	90.00	359.63	12925.00	1433.77	1434.78	152.81	0.00	405948.42	772092.45	N 32.1138	W 103.5880
	14400.00	90.00	359.63	12925.00	1533.77	1534.78	152.17	0.00	406048.42	772091.81	N 32.1141	W 103.5880
	14500.00	90.00	359.63	12925.00	1633.77	1634.78	151.53	0.00	406148.41	772091.17	N 32.1144	W 103.5880
	14600.00	90.00	359.63	12925.00	1733.77	1734.77	150.89	0.00	406248.41	772090.53	N 32.1147	W 103.5880

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 °)
	17400.00	90.00	359.63	12925.00	4533.77	4534.72	132.98	0.00	409048.26	772072.63	N 32.1224	W 103.5880
	17500.00	90.00	359.63	12925.00	4633.77	4634.71	132.34	0.00	409148.26	772071.99	N 32.1226	W 103.5880
	17600.00	90.00	359.63	12925.00	4733.77	4734.71	131.70	0.00	409248.25	772071.35	N 32.1229	W 103.5880
	17700.00	90.00	359.63	12925.00	4833.77	4834.71	131.06	0.00	409348.25	772070.71	N 32.1232	W 103.5880
	17800.00	90.00	359.63	12925.00	4933.77	4934.71	130.42	0.00	409448.24	772070.07	N 32.1235	W 103.5880
	17900.00	90.00	359.63	12925.00	5033.77	5034.71	129.78	0.00	409548.23	772069.43	N 32.1237	W 103.5880
	18000.00	90.00	359.63	12925.00	5133.77	5134.70	129.14	0.00	409648.23	772068.79	N 32.1240	W 103.5880
	18100.00	90.00	359.63	12925.00	5233.77	5234.70	128.50	0.00	409748.22	772068.15	N 32.1243	W 103.5880
	18200.00	90.00	359.63	12925.00	5333.77	5334.70	127.86	0.00	409848.22	772067.51	N 32.1246	W 103.5880
	18300.00	90.00	359.63	12925.00	5433.77	5434.70	127.22	0.00	409948.21	772066.87	N 32.1248	W 103.5880
	18400.00	90.00	359.63	12925.00	5533.77	5534.70	126.59	0.00	410048.21	772066.23	N 32.1251	W 103.5880
	18500.00	90.00	359.63	12925.00	5633.77	5634.69	125.95	0.00	410148.20	772065.59	N 32.1254	W 103.5880
	18600.00	90.00	359.63	12925.00	5733.77	5734.69	125.31	0.00	410248.20	772064.95	N 32.1257	W 103.5880
	18700.00	90.00	359.63	12925.00	5833.77	5834.69	124.67	0.00	410348.19	772064.31	N 32.1259	W 103.5880
	18800.00	90.00	359.63	12925.00	5933.77	5934.69	124.03	0.00	410448.19	772063.67	N 32.1262	W 103.5880
	18900.00	90.00	359.63	12925.00	6033.77	6034.69	123.39	0.00	410548.18	772063.03	N 32.1265	W 103.5880
	19000.00	90.00	359.63	12925.00	6133.77	6134.68	122.75	0.00	410648.18	772062.39	N 32.1268	W 103.5880
	19100.00	90.00	359.63	12925.00	6233.77	6234.68	122.11	0.00	410748.17	772061.75	N 32.1270	W 103.5880
	19200.00	90.00	359.63	12925.00	6333.77	6334.68	121.47	0.00	410848.17	772061.12	N 32.1273	W 103.5880
	19300.00	90.00	359.63	12925.00	6433.77	6434.68	120.83	0.00	410948.16	772060.48	N 32.1276	W 103.5880
	19400.00	90.00	359.63	12925.00	6533.77	6534.67	120.19	0.00	411048.16	772059.84	N 32.1279	W 103.5880
	19500.00	90.00	359.63	12925.00	6633.77	6634.67	119.55	0.00	411148.15	772059.20	N 32.1281	W 103.5880
	19600.00	90.00	359.63	12925.00	6733.77	6734.67	118.91	0.00	411248.15	772058.56	N 32.1284	W 103.5880
	19700.00	90.00	359.63	12925.00	6833.77	6834.67	118.27	0.00	411348.14	772057.92	N 32.1287	W 103.5880
	19800.00	90.00	359.63	12925.00	6933.77	6934.67	117.63	0.00	411448.13	772057.28	N 32.1290	W 103.5880
	19900.00	90.00	359.63	12925.00	7033.77	7034.66	116.99	0.00	411548.13	772056.64	N 32.1292	W 103.5880
	20000.00	90.00	359.63	12925.00	7133.77	7134.66	116.35	0.00	411648.12	772056.00	N 32.1295	W 103.5880
	20100.00	90.00	359.63	12925.00	7233.77	7234.66	115.71	0.00	411748.12	772055.36	N 32.1298	W 103.5880
	20200.00	90.00	359.63	12925.00	7333.77	7334.66	115.07	0.00	411848.11	772054.72	N 32.1301	W 103.5880
	20300.00	90.00	359.63	12925.00	7433.77	7434.66	114.43	0.00	411948.11	772054.08	N 32.1303	W 103.5880
	20400.00	90.00	359.63	12925.00	7533.77	7534.65	113.80	0.00	412048.10	772053.44	N 32.1306	W 103.5880
	20500.00	90.00	359.63	12925.00	7633.77	7634.65	113.16	0.00	412148.10	772052.80	N 32.1309	W 103.5880
	20600.00	90.00	359.63	12925.00	7733.77	7734.65	112.52	0.00	412248.09	772052.16	N 32.1312	W 103.5880
	20700.00	90.00	359.63	12925.00	7833.77	7834.65	111.88	0.00	412348.09	772051.52	N 32.1314	W 103.5880
	20800.00	90.00	359.63	12925.00	7933.77	7934.65	111.24	0.00	412448.08	772050.88	N 32.1317	W 103.5880
	20900.00	90.00	359.63	12925.00	8033.77	8034.64	110.60	0.00	412548.08	772050.24	N 32.1320	W 103.5880
	21000.00	90.00	359.63	12925.00	8133.77	8134.64	109.96	0.00	412648.07	772049.60	N 32.1323	W 103.5880
	21100.00	90.00	359.63	12925.00	8233.77	8234.64	109.32	0.00	412748.07	772048.97	N 32.1325	W 103.5880
	21200.00	90.00	359.63	12925.00	8333.77	8334.64	108.68	0.00	412848.06	772048.33	N 32.1328	W 103.5880
	21300.00	90.00	359.63	12925.00	8433.77	8434.64	108.04	0.00	412948.06	772047.69	N 32.1331	W 103.5880
	21400.00	90.00	359.63	12925.00	8533.77	8534.63	107.40	0.00	413048.05	772047.05	N 32.1334	W 103.5880
	21500.00	90.00	359.63	12925.00	8633.77	8634.63	106.76	0.00	413148.05	772046.41	N 32.1336	W 103.5880
	21600.00	90.00	359.63	12925.00	8733.77	8734.63	106.12	0.00	413248.04	772045.77	N 32.1339	W 103.5880
	21700.00	90.00	359.63	12925.00	8833.77	8834.63	105.48	0.00	413348.04	772045.13	N 32.1342	W 103.5880
	21800.00	90.00	359.63	12925.00	8933.77	8934.63	104.84	0.00	413448.03	772044.49	N 32.1345	W 103.5880
	21900.00	90.00	359.63	12925.00	9033.77	9034.62	104.20	0.00	413548.02	772043.85	N 32.1347	W 103.5880
	22000.00	90.00	359.63	12925.00	9133.77	9134.62	103.56	0.00	413648.02	772043.21	N 32.1350	W 103.5880
	22100.00	90.00	359.63	12925.00	9233.77	9234.62	102.92	0.00	413748.01	772042.57	N 32.1353	W 103.5880
	22200.00	90.00	359.63	12925.00	9333.77	9334.62	102.28	0.00	413848.01	772041.93	N 32.1356	W 103.5880
	22300.00	90.00	359.63	12925.00	9433.77	9434.62	101.64	0.00	413948.00	772041.29	N 32.1358	W 103.5880
	22400.00	90.00	359.63	12925.00	9533.77	9534.61	101.01	0.00	414048.00	772040.65	N 32.1361	W 103.5880
	22500.00	90.00	359.63	12925.00	9633.77	9634.61	100.37	0.00	414147.99	772040.01	N 32.1364	W 103.5880
	22600.00	90.00	359.63	12925.00	9733.77	9734.61	99.73	0.00	414247.99	772039.37	N 32.1367	W 103.5880
	22700.00	90.00	359.63	12925.00	9833.77	9834.61	99.09	0.00	414347.98	772038.73	N 32.1369	W 103.5880
	22800.00	90.00	359.63	12925.00	9933.77	9934.61	98.45	0.00	414447.98	772038.09	N 32.1372	W 103.5880
	22900.00	90.00	359.63	12925.00	10033.77	10034.60	97.81	0.00	414547.97	772037.45	N 32.1375	W 103.5880
Cimarex Vaca Draw 20-17 Federal #61H - PBHL [100' FNL, 698' FEL]	22936.66	90.00	359.63	12925.00	10070.43	10071.26	97.57	0.00	414584.63	772037.22	N 32.1376	W 103.5880

Survey Type: Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma

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	23.000	1/100.000	17.500	13.375		NAL_MWD_IFR1+MS-Depth Only	Vaca Draw 20-17 Federal #61H / Cimarex Vaca Draw 20-17 Federal #61H Rev1 RM 24Feb21
	1	23.000	22936.660	1/100.000	17.500	13.375		NAL_MWD_IFR1+MS	Vaca Draw 20-17 Federal #61H / Cimarex Vaca Draw 20-17 Federal



Cimarex Vaca Draw 20-17 Federal #61H Rev1 RM 24Feb21 Anti-Collision Summary Report

Analysis Date-24hr Time: February 24, 2021 - 15:31

Client: Cimarex Energy

Field: NM Lea County (NAD 83)

Structure: Cimarex Vaca Draw 20-17 Federal #61H

Slot: New Slot

Well: Vaca Draw 20-17 Federal #61H

Borehole: Vaca Draw 20-17 Federal #61H

Scan MD Range: 0.00ft ~ 22936.66ft

Analysis Method: 3D Least Distance

Reference Trajectory: Cimarex Vaca Draw 20-17 Federal #61H Rev1 RM 24Feb21 (Def Plan)

Depth Interval: Every 10.00 Measured Depth (ft)

Rule Set: NAL Procedure: D&M AntiCollision Standard S002

Min Pts: All local minima indicated.

Version / Patch: 2.10.824.0

Database \ Project: US1455VSM3115\DRILLING-NM Lea County 2.10

Trajectory Error Model: ISCSA0 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 Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		

Results highlighted: Sep-Factor separation <= 1.50 ft

Cimarex Vaca Draw 20-17 Federal #59H Rev1 RM 09Feb21 (Def Plan)													
												Fail Minor	
19.94	16.35	17.96	3.59	N/A		MAS = 4.98 (m)	0.00	0.00	CtCt<=15m<15.00			Enter Alert	
19.94	16.35	17.96	3.59	26947.13		MAS = 4.98 (m)	23.00	23.00				WRP	
19.94	19.97	5.97	-0.03	1.50		OSF1.50	1970.00	1970.00		OSF<1.50		Enter Minor	
19.94	20.25	5.78	-0.31	1.47		OSF1.50	2000.00	2000.00				MinPt-CtCt	
19.95	20.31	5.75	-0.35	1.47		OSF1.50	2010.00	2010.00				MINPT-O-EQU	
19.99	20.36	5.76	-0.37	1.47		OSF1.50	2020.00	2020.00				MinPts	
20.55	20.63	6.13	-0.09	1.49		OSF1.50	2070.00	2069.99		OSF>1.50		Exit Minor	
49.87	20.68	35.42	29.18	3.84		OSF1.50	3260.00	3255.84				MinPts	
49.88	20.70	35.42	29.19	3.84		OSF1.50	3270.00	3265.80				MinPt-O-SF	
68.43	22.02	53.09	46.41	4.97		OSF1.50	3880.00	3873.48		OSF>5.00		Exit Alert	
343.13	73.96	293.16	269.17	7.11		OSF1.50	12100.00	12090.19				MINPT-O-EQU	
343.27	74.13	293.19	269.14	7.10		OSF1.50	12120.00	12110.19				MinPt-O-ADP	
344.98	74.80	294.45	270.18	7.07		OSF1.50	12200.00	12190.19				MinPt-O-SF	
530.92	64.58	487.20	466.34	12.67		OSF1.50	13430.00	12925.00				MinPt-CtCt	
530.93	160.74	423.11	370.19	5.00		OSF1.50	17100.00	12925.00		OSF<5.00		Enter Alert	
530.93	339.86	303.74	191.13	2.35		OSF1.50	22936.66	12925.00				MinPts	

Cimarex Vaca Draw 20-17 Federal #58H Rev1 RM 09Feb21 (Def Plan)													
												Warning Alert	
39.94	32.21	38.66	7.73	N/A		MAS = 9.82 (m)	0.00	0.00	CtCt<=15m<15.00			Enter Alert	
39.94	32.21	38.66	7.73	34795.82		MAS = 9.82 (m)	23.00	23.00				WRP	
39.94	32.21	26.47	7.73	3.17		MAS = 9.82 (m)	2000.00	2000.00				MinPts	
39.95	32.21	26.45	7.74	3.16		MAS = 9.82 (m)	2010.00	2010.00				MINPT-O-EQU	
40.25	32.21	26.60	8.04	3.15		MAS = 9.82 (m)	2050.00	2050.00				MinPt-O-SF	
67.02	32.21	52.52	34.80	4.98		MAS = 9.82 (m)	2500.00	2498.73		OSF>5.00		Exit Alert	
341.11	32.21	326.97	308.90	26.49		MAS = 9.82 (m)	5000.00	4990.19				MinPt-O-SF	
342.19	77.44	290.15	264.77	6.72		OSF1.50	11900.00	11890.19				MINPT-O-EQU	
342.34	77.58	290.19	264.75	6.71		OSF1.50	11920.00	11910.19				MinPt-O-ADP	
343.68	78.14	291.16	265.54	6.63		OSF1.50	11990.00	11980.19				MinPt-O-SF	
691.03	208.40	551.67	482.63	5.00		OSF1.50	19160.00	12925.00		OSF<5.00		Enter Alert	
691.03	323.96	474.63	367.08	3.21		OSF1.50	22930.00	12925.00				MinPt-CtCt	
691.03	324.16	474.50	366.87	3.20		OSF1.50	22936.66	12925.00				MinPts	

Cimarex Vaca Draw 20-17 Federal #57H Rev1 RM 09Feb21 (Def Plan)													
												Warning Alert	
59.99	32.81	58.71	27.18	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	
59.99	32.81	58.71	27.18	132112.09		MAS = 10.00 (m)	23.00	23.00				WRP	
59.99	32.81	46.96	27.18	5.00		MAS = 10.00 (m)	1930.00	1930.00		OSF<5.00		Enter Alert	
59.99	32.81	46.52	27.18	4.82		MAS = 10.00 (m)	2000.00	2000.00				MinPts	
60.00	32.81	46.50	27.20	4.81		MAS = 10.00 (m)	2010.00	2010.00				MINPT-O-EQU	
60.59	32.81	46.87	27.79	4.77		MAS = 10.00 (m)	2070.00	2069.99				MinPt-O-SF	
64.55	32.81	50.61	31.75	5.00		MAS = 10.00 (m)	2190.00	2189.86		OSF>5.00		Exit Alert	
1003.97	47.12	972.13	956.86	32.82		OSF1.50	7840.00	7830.19				MinPt-O-SF	
1026.13	73.34	976.81	952.80	21.34		OSF1.50	12130.00	12120.19				MINPT-O-EQU	
1026.25	73.49	976.83	952.78	21.29		OSF1.50	12150.00	12140.19				MinPt-O-ADP	
1034.80	75.18	984.25	959.62	20.93		OSF1.50	12390.00	12380.19				MinPt-O-SF	
1102.98	332.05	881.18	770.93	5.00		OSF1.50	22390.00	12925.00		OSF<5.00		Enter Alert	
1102.98	349.26	869.71	753.72	4.75		OSF1.50	22936.66	12925.00				MinPts	

EOG Vaca Draw 20 Federal #1 (Offset) Plugged Inc. Only Off- 14200ft (Def Survey)													
												Warning Alert	
3335.89	32.81	3333.91	3303.08	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	
3335.88	32.81	3333.47	3303.08	7668.87		MAS = 10.00 (m)	23.00	23.00				WRP	
3333.66	32.81	3315.36	3300.85	204.18		MAS = 10.00 (m)	530.00	530.00				MinPts	
3341.93	108.77	3268.76	3233.16	46.91		OSF1.50	2050.00	2050.00				MinPt-CtCt	
3343.16	112.54	3267.47	3230.62	45.33		OSF1.50	2140.00	2139.94				MINPT-O-EQU	
3344.59	114.21	3267.79	3230.38	44.68		OSF1.50	2180.00	2179.88				MinPt-O-ADP	
3481.78	208.62	3342.04	3273.16	25.26		OSF1.50	3990.00	3983.06				MinPt-O-SF	
3537.71	368.72	3291.24	3168.99	14.46		OSF1.50	7160.00	7150.19				MinPt-CtCt	
3536.26	429.62	3249.19	3106.64	12.40		OSF1.50	8330.00	8320.19				MinPt-CtCt	
3528.87	546.35	3163.98	2982.52	9.72		OSF1.50	10560.00	10550.19				MinPt-CtCt	
3533.59	561.04	3158.90	2972.55	9.48		OSF1.50	10930.00	10920.19				MINPT-O-EQU	
3520.56	624.70	3103.43	2895.85	8.48		OSF1.50	12050.00	12040.19				MinPt-CtCt	
2212.78	669.22	1765.17	1543.56	4.98		OSF1.50	14110.00	12925.00		OSF<5.00		Enter Alert	
959.92	675.66	508.82	284.26	2.13		OSF1.50	16100.00	12925.00				MinPt-CtCt	
959.92	675.70	508.79	284.22	2.13		OSF1.50	16110.00	12925.00				MinPts	
2240.27	675.26	1789.44	1565.01	4.99		OSF1.50	18130.00	12925.00		OSF>5.00		Exit Alert	
6896.51	678.88	6443.26	6217.63	15.28		OSF1.50	22936.66	12925.00				TD	

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		
Hankamer Curtis Bass-Federal #1 (Offset) Plugged Blind Off-5074ft (Def Survey)													
												Warning Alert	
	4377.57	32.81	4374.57	4344.76	4305.73	MAS = 10.00 (m)	0.00	0.00				Surface	
	4377.57	32.81	4372.16	4344.76	1277.24	MAS = 10.00 (m)	23.00	23.00				WRP	
	4377.57	618.29	3964.72	3759.28	10.65	OSF1.50	2000.00	2000.00				MinPt-CtCt	
	4550.32	1366.71	3638.52	3183.60	5.00	OSF1.50	4390.00	4381.54	OSF<5.00			Enter Alert	
	4580.76	1581.30	3525.90	2999.46	4.35	OSF1.50	5080.00	5070.19				MinPts	
	4909.34	1475.67	3924.91	3433.68	4.99	OSF1.50	6840.00	6830.19	OSF>5.00			Exit Alert	
	7963.35	272.49	7781.04	7690.87	44.15	OSF1.50	17100.00	12925.00				MinPt-CtCt	
	7964.58	274.82	7780.71	7689.76	43.78	OSF1.50	17240.00	12925.00				MINPT-O-EQU	
	8006.49	322.14	7791.07	7684.35	37.50	OSF1.50	17930.00	12925.00				MinPt-O-ADP	
	9873.24	973.02	9223.90	8900.23	15.25	OSF1.50	22936.66	12925.00				MinPt-O-SF	
Final Surveys - Cimarex Vaca Draw 20-17 Federal #71H MWD Off-19978ft (Surcon Corrected) (Def Survey)													
												Pass	
	489.93	32.81	488.65	457.12	N/A	MAS = 10.00 (m)	0.00	0.00				MinPts	
	489.94	32.81	488.65	457.13	120784.16	MAS = 10.00 (m)	23.00	23.00				WRP	
	490.08	32.81	488.58	457.27	2374.66	MAS = 10.00 (m)	90.00	90.00				MINPT-O-EQU	
	490.28	32.81	488.56	457.47	1137.84	MAS = 10.00 (m)	140.00	140.00				MINPT-O-EQU	
	487.04	32.81	480.81	454.24	98.25	MAS = 10.00 (m)	1060.00	1060.00				MINPT-O-EQU	
	322.98	32.81	312.68	290.18	35.44	MAS = 10.00 (m)	3490.00	3484.96				MinPt-O-SF	
	322.44	32.81	312.20	289.63	35.63	MAS = 10.00 (m)	3540.00	3534.77				MinPts	
	334.28	32.81	324.35	301.47	38.11	MAS = 10.00 (m)	4080.00	4072.72				MINPT-O-EQU	
	327.17	32.81	315.99	294.36	32.61	MAS = 10.00 (m)	4700.00	4690.38				MinPt-O-SF	
	143.57	32.81	126.79	110.77	9.04	MAS = 10.00 (m)	7260.00	7250.19				MinPts	
	143.61	32.81	126.75	110.80	9.00	MAS = 10.00 (m)	7280.00	7270.19				MINPT-O-EQU	
	147.71	32.81	130.03	114.91	8.81	MAS = 10.00 (m)	7480.00	7470.19				MinPt-O-SF	
	310.26	38.36	284.35	271.90	12.42	OSF1.50	9540.00	9530.19				MinPt-O-SF	
	2897.82	32.81	2878.67	2865.01	159.49	MAS = 10.00 (m)	13120.00	12892.69				MinPt-O-SF	
	2920.62	34.32	2897.41	2886.30	131.39	OSF1.50	13680.00	12925.00				MinPt-CtCt	
	2886.64	67.82	2841.10	2818.82	64.76	OSF1.50	15040.00	12925.00				MinPt-CtCt	
	2887.22	69.66	2840.45	2817.56	63.04	OSF1.50	15130.00	12925.00				MINPT-O-EQU	
	2892.70	80.94	2838.42	2811.77	54.25	OSF1.50	15540.00	12925.00				MINPT-O-EQU	
	2877.05	144.62	2780.31	2732.43	30.03	OSF1.50	17690.00	12925.00				MinPt-CtCt	
	2880.03	176.37	2762.12	2703.66	24.62	OSF1.50	18760.00	12925.00				MinPt-CtCt	
	2880.57	178.05	2761.55	2702.52	24.39	OSF1.50	18840.00	12925.00				MINPT-O-EQU	
	2881.24	178.87	2761.65	2702.36	24.29	OSF1.50	18880.00	12925.00				MinPt-O-ADP	
	2883.26	185.35	2759.37	2697.91	23.45	OSF1.50	19060.00	12925.00				MinPt-CtCt	
	2883.38	195.46	2752.74	2687.92	22.23	OSF1.50	19400.00	12925.00				MinPt-CtCt	
	2883.17	220.57	2735.79	2662.60	19.69	OSF1.50	20240.00	12925.00				MinPt-CtCt	
	2887.30	236.74	2729.15	2650.56	18.36	OSF1.50	20810.00	12925.00				MINPT-O-EQU	
	2889.99	249.87	2723.08	2640.12	17.41	OSF1.50	21220.00	12925.00				MinPt-CtCt	
	2891.92	266.66	2713.82	2625.26	16.32	OSF1.50	21780.00	12925.00				MinPt-CtCt	
	2902.07	300.58	2701.35	2601.48	14.52	OSF1.50	22936.66	12925.00				MinPts	
Final Surveys - Cimarex Vaca Draw 20-17 Federal #72H Surveys Off to 19073ft (Surcon Corrected) (Def Survey)													
												Pass	
	509.93	32.81	508.65	477.12	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	509.93	32.81	508.65	477.12	N/A	MAS = 10.00 (m)	23.00	23.00				WRP	
	507.31	32.81	501.29	474.50	106.93	MAS = 10.00 (m)	1060.00	1060.00				MINPT-O-EQU	
	494.01	32.81	483.56	461.20	52.91	MAS = 10.00 (m)	2100.00	2099.98				MinPt-O-SF	
	461.20	32.81	451.64	428.39	54.71	MAS = 10.00 (m)	2630.00	2628.24				MinPt-O-SF	
	443.46	32.81	434.51	410.65	56.78	MAS = 10.00 (m)	3020.00	3016.75				MinPt-O-SF	
	435.45	32.81	426.72	402.64	57.45	MAS = 10.00 (m)	3380.00	3375.38				MinPts	
	438.37	32.81	429.32	405.57	55.35	MAS = 10.00 (m)	3610.00	3604.51				MinPt-O-SF	
	403.64	32.81	393.09	370.83	42.90	MAS = 10.00 (m)	4700.00	4690.38				MinPt-O-SF	
	355.74	32.81	343.41	322.93	31.56	MAS = 10.00 (m)	6120.00	6110.19				MinPts	
	354.70	32.81	341.71	321.90	29.67	MAS = 10.00 (m)	6400.00	6390.19				MinPts	
	354.73	32.81	341.69	321.92	29.54	MAS = 10.00 (m)	6420.00	6410.19				MINPT-O-EQU	
	365.45	32.81	343.80	332.64	17.68	MAS = 10.00 (m)	8740.00	8730.19				MinPts	
	365.46	32.81	343.77	332.65	17.65	MAS = 10.00 (m)	8750.00	8740.19				MINPT-O-EQU	
	368.59	32.81	346.51	335.78	17.47	MAS = 10.00 (m)	8850.00	8840.19				MinPt-O-SF	
	3570.27	90.16	3509.84	3480.11	60.04	OSF1.50	15910.00	12925.00				MinPt-CtCt	
	3571.33	93.30	3508.80	3478.02	58.01	OSF1.50	16050.00	12925.00				MINPT-O-EQU	
	3572.84	95.12	3509.10	3477.72	56.91	OSF1.50	16130.00	12925.00				MinPt-O-ADP	
	3583.44	110.63	3509.36	3472.82	49.01	OSF1.50	16620.00	12925.00				MinPt-CtCt	
	3586.95	135.29	3496.43	3451.66	40.05	OSF1.50	17460.00	12925.00				MinPt-CtCt	
	3589.63	147.09	3491.24	3442.53	36.84	OSF1.50	17860.00	12925.00				MinPt-CtCt	
	3590.55	176.46	3472.59	3414.10	30.69	OSF1.50	18850.00	12925.00				MinPt-CtCt	
	3589.92	183.23	3467.45	3406.70	29.54	OSF1.50	19080.00	12925.00				MinPt-CtCt	
	3593.23	191.07	3465.52	3402.16	28.35	OSF1.50	19380.00	12925.00				MINPT-O-EQU	
	3588.76	231.06	3434.39	3357.70	23.39	OSF1.50	20680.00	12925.00				MinPt-CtCt	
	3582.27	251.72	3414.13	3330.55	21.42	OSF1.50	21370.00	12925.00				MinPt-CtCt	
	3588.37	298.68	3388.91	3289.67	18.07	OSF1.50	22936.66	12925.00				MinPts	
Final Surveys - Cimarex Vaca Draw 20-17 Federal #73H Off-19583ft (Surcon Corrected) (Def Survey)													
												Pass	
	529.93	32.81	528.65	497.13	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	529.93	32.81	528.64	497.12	469260.69	MAS = 10.00 (m)	23.00	23.00				WRP	
	529.66	32.81	527.29	496.85	488.38	MAS = 10.00 (m)	290.00	290.00				MinPts	
	528.88	32.81	524.23	496.07	156.73	MAS = 10.00 (m)	800.00	800.00				MinPts	
	529.05	32.81	524.04	496.24	142.05	MAS = 10.00 (m)	890.00	890.00				MINPT-O-EQU	
	537.32	32.81	527.11	504.51	59.08	MAS = 10.00 (m)	2100.00	2099.98				MinPt-O-SF	
	524.25	32.81	514.40	491.44	60.04	MAS = 10.00 (m)	2450.00	2448.92				MinPt-O-SF	
	510.55	32.81	500.64	477.74	58.18	MAS = 10.00 (m)	2830.00	2827.48				MinPt-O-SF	
	503.66	32.81	493.75	470.85	57.30	MAS = 10.00 (m)	3320.00	3315.61				MinPts	
	503.69	32.81	493.73	470.88	57.01	MAS = 10.00 (m)	3410.00	3405.27				MinPts	
	503.69	32.81	493.92	470.88	58.27	MAS = 10.00 (m)	3520.00	3514.85				MinPts	
	503.69	32.81	493.92	470.88	58.24	MAS = 10.00 (m)	3530.00	3524.81				MINPT-O-EQU	
	503.33	32.81	493.49	470.52	57.78	MAS = 10.00 (m)	3690.00	3684.20				MinPt-O-SF	
	482.16	32.81	471.19	449.35	49.00	MAS = 10.00 (m)	4700.00	4690.38				MinPt-O-SF	
	478.15	32.81	467.58	445.34	50.70	MAS = 10.00 (m)	4910.00	4900.19				MINPT-O-EQU	
	478.12	32.81	467.55	445.31	50.71	MAS = 10.00 (m)	4940.00	4930.19				MINPT-O-EQU	
	478.11	32.81	467.63	445.30	50.62	MAS = 10.00 (m)	4970.00	4960.19				MinPts	

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Cl-Cl (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		
452.68	32.81	435.92	419.87	28.82		MAS = 10.00 (m)	7560.00	7550.19				MINPT-O-EOU	
432.04	35.48	408.01	396.56	18.82		OSF1.50	9430.00	9420.19				MinPts	
433.77	35.79	409.53	397.98	18.72		OSF1.50	9480.00	9470.19				MinPt-O-SF	
3102.66	108.18	3030.20	2994.48	43.42		OSF1.50	16270.00	12925.00				MinPt-CiCt	
3103.09	109.48	3029.76	2993.60	42.90		OSF1.50	16340.00	12925.00				MINPT-O-EOU	
3103.55	110.05	3029.84	2993.50	42.68		OSF1.50	16370.00	12925.00				MinPt-O-ADP	
3102.27	117.20	3023.80	2985.07	40.04		OSF1.50	16580.00	12925.00				MinPt-CiCt	
3093.72	149.40	2993.78	2944.33	31.27		OSF1.50	17670.00	12925.00				MinPt-CiCt	
3094.71	152.38	2992.78	2942.32	30.66		OSF1.50	17800.00	12925.00				MINPT-O-EOU	
3095.63	153.48	2992.97	2942.15	30.45		OSF1.50	17850.00	12925.00				MinPt-O-ADP	
3096.38	164.63	2986.28	2931.74	28.38		OSF1.50	18180.00	12925.00				MinPt-CiCt	
3083.59	186.67	2958.80	2896.92	24.91		OSF1.50	18920.00	12925.00				MinPt-CiCt	
3084.05	188.01	2958.37	2896.05	24.73		OSF1.50	18990.00	12925.00				MINPT-O-EOU	
3084.86	191.45	2956.88	2893.41	24.29		OSF1.50	19080.00	12925.00				MinPt-CiCt	
3085.78	194.11	2956.03	2891.67	23.96		OSF1.50	19200.00	12925.00				MINPT-O-EOU	
3086.50	194.95	2956.20	2891.55	23.87		OSF1.50	19240.00	12925.00				MinPt-O-ADP	
3083.10	232.51	2927.75	2850.59	19.97		OSF1.50	20450.00	12925.00				MinPt-CiCt	
3083.11	243.85	2920.20	2839.26	19.04		OSF1.50	20830.00	12925.00				MinPt-CiCt	
3084.15	246.87	2919.23	2837.28	18.81		OSF1.50	20960.00	12925.00				MINPT-O-EOU	
3083.51	255.00	2913.17	2828.51	18.21		OSF1.50	21200.00	12925.00				MinPt-CiCt	
3049.92	278.91	2863.63	2771.00	16.46		OSF1.50	22000.00	12925.00				MinPt-CiCt	
3050.90	282.15	2862.43	2768.71	16.27		OSF1.50	22140.00	12925.00				MINPT-O-EOU	
3052.01	283.53	2862.65	2768.48	16.20		OSF1.50	22200.00	12925.00				MinPt-O-ADP	
3078.98	296.18	2881.22	2782.85	15.64		OSF1.50	22690.00	12925.00				MinPts	
3096.01	301.19	2894.88	2794.82	15.47		OSF1.50	22936.66	12925.00				MinPt-O-SF	

Final Surveys - Cimarex Vaca
Draw 20-17 Federal #73H ST01
Off- 19719ft (Surcon Corrected)
(Def Survey)

Pass

529.93	32.81	528.65	497.13	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	
529.93	32.81	528.64	497.12	469260.69		MAS = 10.00 (m)	23.00	23.00				WRP	
529.68	32.81	527.28	496.85	488.38		MAS = 10.00 (m)	290.00	290.00				MinPts	
528.89	32.81	524.23	496.07	156.73		MAS = 10.00 (m)	800.00	800.00				MinPts	
529.05	32.81	524.04	496.24	142.05		MAS = 10.00 (m)	890.00	890.00				MINPT-O-EOU	
537.32	32.81	527.11	504.51	59.08		MAS = 10.00 (m)	2100.00	2099.98				MinPt-O-SF	
524.25	32.81	514.40	491.44	60.04		MAS = 10.00 (m)	2450.00	2448.92				MinPt-O-SF	
510.55	32.81	500.64	477.74	58.18		MAS = 10.00 (m)	2830.00	2827.48				MinPt-O-SF	
503.66	32.81	493.75	470.85	57.30		MAS = 10.00 (m)	3320.00	3315.61				MinPts	
503.69	32.81	493.73	470.88	57.01		MAS = 10.00 (m)	3410.00	3405.27				MinPts	
503.69	32.81	493.92	470.88	58.27		MAS = 10.00 (m)	3520.00	3514.85				MinPts	
503.69	32.81	493.92	470.88	58.24		MAS = 10.00 (m)	3530.00	3524.81				MINPT-O-EOU	
503.33	32.81	493.49	470.52	57.78		MAS = 10.00 (m)	3690.00	3684.20				MinPt-O-SF	
482.16	32.81	471.19	449.35	49.04		MAS = 10.00 (m)	4700.00	4690.38				MinPt-O-SF	
478.15	32.81	467.58	445.34	50.70		MAS = 10.00 (m)	4910.00	4900.19				MINPT-O-EOU	
478.12	32.81	467.55	445.31	50.71		MAS = 10.00 (m)	4940.00	4930.19				MINPT-O-EOU	
478.11	32.81	467.63	445.30	50.62		MAS = 10.00 (m)	4970.00	4960.19				MinPts	
452.05	32.81	436.17	419.25	30.46		MAS = 10.00 (m)	7320.00	7310.19				MinPts	
452.68	32.81	435.92	419.87	28.82		MAS = 10.00 (m)	7560.00	7550.19				MINPT-O-EOU	
432.04	35.48	408.01	396.56	18.82		OSF1.50	9430.00	9420.19				MinPts	
433.77	35.79	409.53	397.98	18.72		OSF1.50	9480.00	9470.19				MinPt-O-SF	
2867.50	32.81	2845.89	2834.69	138.99		MAS = 10.00 (m)	12710.00	12683.53				MinPt-O-SF	
2935.81	42.24	2907.33	2893.58	106.72		OSF1.50	14000.00	12925.00				MinPt-CiCt	
2936.80	45.40	2906.21	2891.40	99.14		OSF1.50	14150.00	12925.00				MINPT-O-EOU	
2917.18	70.23	2870.04	2846.96	63.17		OSF1.50	15040.00	12925.00				MinPt-CiCt	
2917.48	71.12	2869.74	2846.36	62.38		OSF1.50	15090.00	12925.00				MINPT-O-EOU	
2917.90	71.65	2869.81	2846.25	61.91		OSF1.50	15120.00	12925.00				MinPt-O-ADP	
2903.98	95.25	2840.15	2808.72	46.19		OSF1.50	15910.00	12925.00				MinPt-CiCt	
2904.17	95.88	2839.96	2808.34	45.91		OSF1.50	15950.00	12925.00				MINPT-O-EOU	
2904.29	95.97	2839.98	2808.32	45.85		OSF1.50	15960.00	12925.00				MinPt-O-ADP	
2904.76	111.00	2830.44	2793.77	39.59		OSF1.50	16450.00	12925.00				MinPt-CiCt	
2905.06	111.86	2830.16	2793.20	39.29		OSF1.50	16500.00	12925.00				MINPT-O-EOU	
2905.51	112.38	2830.26	2793.13	39.11		OSF1.50	16530.00	12925.00				MinPt-O-ADP	
2901.75	126.40	2817.16	2775.35	34.69		OSF1.50	16970.00	12925.00				MinPt-CiCt	
2902.42	128.58	2816.39	2773.86	34.12		OSF1.50	17070.00	12925.00				MINPT-O-EOU	
2903.10	129.39	2816.51	2773.71	33.90		OSF1.50	17110.00	12925.00				MinPt-O-ADP	
2883.86	168.33	2771.31	2715.53	25.84		OSF1.50	18380.00	12925.00				MinPt-CiCt	
2885.45	186.61	2760.72	2698.84	23.31		OSF1.50	18990.00	12925.00				MinPt-CiCt	
2885.45	192.29	2756.93	2693.16	22.62		OSF1.50	19180.00	12925.00				MinPt-CiCt	
2886.14	195.08	2755.76	2691.06	22.30		OSF1.50	19300.00	12925.00				MINPT-O-EOU	
2886.63	195.66	2755.89	2690.98	22.23		OSF1.50	19330.00	12925.00				MinPt-O-ADP	
2886.68	204.55	2749.96	2682.10	21.26		OSF1.50	19590.00	12925.00				MinPt-CiCt	
2886.96	212.32	2744.99	2674.54	20.48		OSF1.50	19850.00	12925.00				MinPt-CiCt	
2885.87	227.85	2733.64	2658.02	19.07		OSF1.50	20370.00	12925.00				MinPt-CiCt	
2880.29	250.66	2712.86	2629.63	17.30		OSF1.50	21130.00	12925.00				MinPt-CiCt	
2880.43	259.10	2707.37	2621.33	16.73		OSF1.50	21410.00	12925.00				MinPt-CiCt	
2882.36	275.34	2698.47	2607.02	15.75		OSF1.50	21950.00	12925.00				MinPt-CiCt	
2884.04	291.84	2689.16	2592.21	14.87		OSF1.50	22500.00	12925.00				MinPt-CiCt	
2884.65	300.84	2683.76	2583.81	14.43		OSF1.50	22800.00	12925.00				MinPt-CiCt	
2884.97	304.89	2681.39	2580.09	14.23		OSF1.50	22936.66	12925.00				MinPts	

Final Surveys - Cimarex Vaca
Draw 20-17 Federal #45H Off-
19226ft (Surcon Corrected)
(Def Survey)

Pass

1239.83	32.81	1238.54	1207.02	N/A	MAS = 10.00 (m)	0.00	0.00		MinPts
1239.84	32.81	1238.54	1207.04	67689.14	MAS = 10.00 (m)	23.00	23.00		WRP
1239.99	32.81	1238.48	1207.18	5646.32	MAS = 10.00 (m)	90.00	90.00		MINPT-O-EOU
1240.18	32.81	1238.45	1207.37	2816.81	MAS = 10.00 (m)	140.00	140.00		MINPT-O-EOU
1235.73	32.81	1230.08	1202.92	282.92	MAS = 10.00 (m)	1040.00	1040.00		MINPT-O-EOU
1214.91	32.81	1204.80	1182.11	135.25	MAS = 10.00 (m)	2100.00	2099.98		MinPt-O-SF
1144.15	32.81	1134.92	1111.34	141.81	MAS = 10.00 (m)	2810.00	2807.55		MinPt-O-SF
994.04	32.81	981.56	961.24	88.94	MAS = 10.00 (m)	4700.00	4690.38		MinPt-O-SF
953.07	35.23	528.93	517.83	24.83	OSF1.50	8750.00	8740.19		MinPt-CiCt
953.11	35.39	528.87	517.72	24.72	OSF1.50	8780.00	8770.19		MINPT-O-EOU
953.20	35.49	528.89	517.71	24.64	OSF1.50	8800.00	8790.19		MinPt-O-ADP
959.91	36.23	535.12	523.68	24.38	OSF1.50	8950.00	8940.19		MinPt-O-SF
3576.83	136.59	3485.43	3440.24	39.57	OSF1.50	17300.00	12925.00		MinPt-CiCt
3577.56	138.65	3484.79	3438.91	38.98	OSF1.50	17400.00	12925.00		MINPT-O-EOU
3578.61	139.91	3485.00	3438.70	38.64	OSF1.50	17460.00	12925.00		MinPt-O-ADP
3593.11	154.40	3489.84	3438.71	35.13	OSF1.50	17950.00	12925.00		MINPT-O-EOU
3593.55	154.90	3489.94	3438.65	35.02	OSF1.50	17970.00	12925.00		MinPt-O-ADP
3611.60	193.47	3482.28	3418.13	28.14	OSF1.50	19210.00	12925.00		MinPt-CiCt

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Cl-Cl (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		
3612.15	195.21	3481.68	3416.86	27.90		OSF1.50	19300.00	12925.00				MINPT-O-EQU	
3612.80	195.96	3481.82	3416.84	27.79		OSF1.50	19340.00	12925.00				MinPt-O-ADP	
3614.74	206.25	3476.90	3408.49	26.41		OSF1.50	19640.00	12925.00				MinPt-CiCt	
3613.17	212.22	3471.35	3400.95	25.65		OSF1.50	19840.00	12925.00				MinPt-CiCt	
3614.84	215.86	3470.59	3398.98	25.23		OSF1.50	20000.00	12925.00				MINPT-O-EQU	
3615.75	217.20	3470.60	3398.54	25.08		OSF1.50	20050.00	12925.00				MINPT-O-EQU	
3621.04	226.52	3469.68	3394.52	24.08		OSF1.50	20350.00	12925.00				MINPT-O-EQU	
3622.09	227.86	3469.85	3394.24	23.94		OSF1.50	20410.00	12925.00				MinPt-O-ADP	
3587.96	263.20	3412.15	3324.76	20.52		OSF1.50	21540.00	12925.00				MinPt-CiCt	
3589.08	266.31	3411.20	3322.77	20.29		OSF1.50	21680.00	12925.00				MINPT-O-EQU	
3597.02	276.15	3412.53	3320.87	19.61		OSF1.50	22020.00	12925.00				MINPT-O-EQU	
3601.66	292.26	3406.42	3309.34	18.54		OSF1.50	22510.00	12925.00				MinPt-CiCt	
3600.69	305.06	3396.96	3295.61	17.76		OSF1.50	22936.66	12925.00				MinPts	

Final Surveys - Cimarex Vaca
Draw 20-17 Federal #44H
MWD Off-19884ft (Surcon
Corrected) (Def Survey)

Pass

1259.83	32.81	1258.54	1227.02	N/A	MAS = 10.00 (m)	0.00	0.00					MinPts	
1259.83	32.81	1258.52	1227.02	67759.28	MAS = 10.00 (m)	23.00	23.00					WRP	
1259.04	32.81	1254.53	1226.24	390.20	MAS = 10.00 (m)	770.00	770.00					MinPts	
1259.18	32.81	1253.67	1226.38	296.88	MAS = 10.00 (m)	1010.00	1010.00					MinPts	
1259.21	32.81	1253.51	1226.40	284.99	MAS = 10.00 (m)	1050.00	1050.00					MINPT-O-EQU	
1259.87	32.81	1253.30	1227.06	231.33	MAS = 10.00 (m)	1270.00	1270.00					MINPT-O-EQU	
1264.96	32.81	1255.02	1232.15	143.38	MAS = 10.00 (m)	2000.00	2000.00					MINPT-O-EQU	
1266.39	32.81	1256.42	1233.58	143.07	MAS = 10.00 (m)	2100.00	2099.98					MinPt-O-SF	
1232.31	32.81	1224.27	1199.50	178.41	MAS = 10.00 (m)	3110.00	3106.41					MinPt-O-SF	
1224.00	32.81	1216.00	1191.19	178.55	MAS = 10.00 (m)	3210.00	3206.03					MinPt-O-SF	
1126.44	32.81	1115.25	1093.63	113.22	MAS = 10.00 (m)	4700.00	4690.38					MinPt-O-SF	
878.45	36.74	853.44	841.72	37.40	OSF1.50	9410.00	9400.19					MinPt-CiCt	
878.48	36.87	853.38	841.61	37.26	OSF1.50	9430.00	9420.19					MinPts	
887.63	37.70	861.98	849.92	36.74	OSF1.50	9600.00	9590.19					MinPt-O-SF	
3093.06	44.90	3062.80	3048.16	105.62	OSF1.50	14120.00	12925.00					MinPt-CiCt	
3064.76	106.84	2993.21	2957.92	43.42	OSF1.50	16450.00	12925.00					MinPt-CiCt	
3040.87	157.06	2935.84	2883.81	29.21	OSF1.50	18170.00	12925.00					MinPt-CiCt	
3041.13	165.34	2930.57	2875.79	27.75	OSF1.50	18450.00	12925.00					MinPt-CiCt	
3040.49	177.46	2921.86	2863.03	25.84	OSF1.50	18860.00	12925.00					MinPt-CiCt	
3039.64	186.05	2915.28	2853.59	24.63	OSF1.50	19150.00	12925.00					MinPt-CiCt	
3041.71	201.86	2906.80	2839.84	22.71	OSF1.50	19680.00	12925.00					MinPt-CiCt	
3033.32	237.90	2874.39	2795.42	19.20	OSF1.50	20890.00	12925.00					MinPt-CiCt	
3037.76	253.42	2868.48	2784.34	18.04	OSF1.50	21440.00	12925.00					MINPT-O-EQU	
3042.40	260.42	2868.46	2781.98	17.58	OSF1.50	21680.00	12925.00					MINPT-O-EQU	
3058.94	299.11	2859.21	2759.83	15.39	OSF1.50	22936.66	12925.00					MinPts	

Cimarex Vaca Draw 20-17
Federal #12H Rev1 RM
10Feb21 (Def Plan)

Pass

2379.27	32.81	2377.98	2346.46	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	
2379.27	32.81	2377.94	2346.46	57234.20	MAS = 10.00 (m)	23.00	23.00					WRP	
2378.92	32.81	2365.31	2346.11	192.94	MAS = 10.00 (m)	2000.00	2000.00					MinPt-O-SF	
1219.20	54.13	1182.14	1165.09	35.64	OSF1.50	8060.00	8050.19					MinPt-O-SF	
1217.38	54.04	1180.37	1163.34	35.64	OSF1.50	8130.00	8120.19					MinPt-O-SF	
1216.75	67.36	1170.87	1149.39	28.26	OSF1.50	10570.00	10560.19					MinPt-CiCt	
1216.88	68.04	1170.54	1148.84	27.97	OSF1.50	10680.00	10670.19					MINPT-O-EQU	
1216.97	68.14	1170.56	1148.83	27.93	OSF1.50	10700.00	10690.19					MinPt-O-ADP	
1220.67	68.79	1173.84	1151.88	27.73	OSF1.50	10870.00	10860.19					MinPt-O-SF	
2264.11	315.30	2053.49	1948.81	10.81	OSF1.50	22936.66	12925.00					MinPts	

Final Surveys - Cimarex Vaca
Draw 20-17 Federal #43H
MWD Off-19167ft (Surcon
Corrected) (Def Survey)

Pass

1279.82	32.81	1278.53	1247.01	N/A	MAS = 10.00 (m)	0.00	0.00					MinPts	
1279.82	32.81	1278.52	1247.02	60928.83	MAS = 10.00 (m)	23.00	23.00					WRP	
1280.56	32.81	1276.48	1247.75	457.56	MAS = 10.00 (m)	670.00	670.00					MinPts	
1280.90	32.81	1275.21	1248.09	291.14	MAS = 10.00 (m)	1050.00	1050.00					MINPT-O-EQU	
1280.62	32.81	1274.15	1247.81	239.84	MAS = 10.00 (m)	1260.00	1260.00					MinPts	
1280.97	32.81	1273.81	1248.16	212.40	MAS = 10.00 (m)	1410.00	1410.00					MINPT-O-EQU	
1287.45	32.81	1277.54	1254.64	146.43	MAS = 10.00 (m)	2100.00	2099.98					MinPt-O-SF	
1365.16	32.81	1357.13	1332.35	197.55	MAS = 10.00 (m)	3170.00	3166.18					MinPt-O-SF	
1372.10	32.81	1364.06	1339.29	198.45	MAS = 10.00 (m)	3350.00	3345.50					MinPt-O-SF	
1444.14	32.81	1434.12	1411.33	162.21	MAS = 10.00 (m)	4670.00	4660.48					MinPt-O-SF	
1478.31	32.81	1463.96	1445.50	110.33	MAS = 10.00 (m)	7090.00	7080.19					MINPT-O-EQU	
1485.77	32.81	1465.88	1452.96	78.67	MAS = 10.00 (m)	8510.00	8500.19					MINPT-O-EQU	
1555.54	34.81	1531.99	1520.72	69.01	OSF1.50	9500.00	9490.19					MinPt-O-SF	
3921.66	35.31	3897.79	3886.38	171.53	OSF1.50	13440.00	12925.00					MinPt-O-ADP	
3923.25	45.35	3892.69	3877.90	132.60	OSF1.50	14060.00	12925.00					MinPt-CiCt	
3900.16	80.72	3846.02	3819.44	73.35	OSF1.50	15480.00	12925.00					MinPt-CiCt	
3878.51	123.65	3795.75	3754.87	47.42	OSF1.50	16990.00	12925.00					MinPt-CiCt	
3878.34	132.09	3789.95	3746.25	44.36	OSF1.50	17280.00	12925.00					MinPt-CiCt	
3877.79	144.10	3781.39	3733.68	40.63	OSF1.50	17690.00	12925.00					MinPt-CiCt	
3877.88	147.63	3779.13	3730.25	39.66	OSF1.50	17810.00	12925.00					MinPt-CiCt	
3880.38	161.75	3772.19	3718.60	36.20	OSF1.50	18290.00	12925.00					MinPt-CiCt	
3872.44	196.40	3741.18	3676.05	29.72	OSF1.50	19460.00	12925.00					MinPt-CiCt	
3862.25	238.76	3702.75	3623.49	24.36	OSF1.50	20880.00	12925.00					MinPt-CiCt	
3862.80	240.58	3702.12	3622.28	24.18	OSF1.50	20970.00	12925.00					MINPT-O-EQU	
3864.47	243.12	3702.00	3621.35	23.93	OSF1.50	21070.00	12925.00					MINPT-O-EQU	
3869.84	254.58	3699.78	3615.25	22.88	OSF1.50	21450.00	12925.00					MINPT-O-EQU	
3868.84	270.09	3688.45	3598.75	21.56	OSF1.50	21930.00	12925.00					MinPt-CiCt	
3873.07	283.87	3683.49	3589.19	20.53	OSF1.50	22430.00	12925.00					MINPT-O-EQU	
3873.81	294.36	3677.25	3579.46	19.80	OSF1.50	22740.00	12925.00					MinPt-CiCt	
3873.14	300.18	3672.69	3572.96	19.41	OSF1.50	22936.66	12925.00					MinPts	

Final Surveys - Cimarex Vaca
Draw 20-17 Federal #4H ST01
MWD Off-22279ft (Surcon
Corrected) (Def Survey)

Pass

2478.61	32.81	2477.43	2445.80	N/A	MAS = 10.00 (m)	0.00	0.00					MinPts	
2478.63	32.81	2477.42	2445.83	67033.03	MAS = 10.00 (m)	23.00	23.00					WRP	
2478.69	32.81	2477.41	2445.89	22731.90	MAS = 10.00 (m)	50.00	50.00					MINPT-O-EQU	
2366.74	32.81	2356.08	2333.93	247.69	MAS = 10.00 (m)	2100.00	2099.98					MinPt-O-SF	
2324.64	32.81	2314.77	2291.84	265.23	MAS = 10.00 (m)	2780.00	2777.67					MinPt-O-SF	

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Cl-Cl (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		
2304.04	32.81	2294.20	2271.23	264.28		MAS = 10.00 (m)	3070.00	3066.56				MinPt-O-SF	
2211.67	32.81	2199.17	2178.86	196.19		MAS = 10.00 (m)	4700.00	4690.38				MinPt-O-SF	
1721.32	39.69	1694.15	1681.63	68.69		OSF1.50	9180.00	9170.19				MinPt-CiCl	
1721.36	39.78	1694.12	1681.57	68.51		OSF1.50	9200.00	9190.19				MINPT-O-EQU	
1721.40	39.84	1694.13	1681.56	68.42		OSF1.50	9210.00	9200.19				MinPt-O-ADP	
1728.90	43.19	1699.40	1685.71	63.08		OSF1.50	9850.00	9840.19				MinPt-CiCl	
1729.06	43.66	1699.24	1685.40	62.37		OSF1.50	9940.00	9930.19				MINPT-O-EQU	
1729.59	44.50	1699.21	1685.09	61.16		OSF1.50	10090.00	10080.19				MINPT-O-EQU	
1729.68	44.61	1699.23	1685.07	61.00		OSF1.50	10110.00	10100.19				MinPt-O-ADP	
1731.54	46.03	1700.15	1685.51	59.07		OSF1.50	10360.00	10350.19				MINPT-O-EQU	
1731.78	46.32	1700.19	1685.46	58.70		OSF1.50	10410.00	10400.19				MinPt-O-ADP	
1732.86	48.78	1699.63	1684.07	55.63		OSF1.50	10840.00	10830.19				MinPt-CiCl	
1732.89	48.86	1699.59	1684.00	55.50		OSF1.50	10860.00	10850.19				MINPT-O-EQU	
1732.93	48.95	1699.60	1683.99	55.44		OSF1.50	10870.00	10860.19				MinPt-O-ADP	
1781.19	54.07	1744.49	1727.11	51.20		OSF1.50	11790.00	11780.19				MinPt-O-SF	
1753.52	56.50	1715.19	1697.02	48.20		OSF1.50	12130.00	12120.19				MinPt-CiCl	
1753.54	56.56	1715.17	1696.98	48.15		OSF1.50	12140.00	12130.19				MinPts	
1772.07	57.76	1732.95	1714.30	47.47		OSF1.50	12410.00	12400.19				MinPt-O-SF	
1790.68	65.10	1746.82	1725.59	42.14		OSF1.50	13740.00	12925.00				MinPt-CiCl	
1790.92	65.74	1746.62	1725.18	41.72		OSF1.50	13790.00	12925.00				MINPT-O-EQU	
1791.27	66.14	1746.70	1725.13	41.48		OSF1.50	13820.00	12925.00				MinPt-O-ADP	
1797.30	74.45	1747.20	1722.96	36.89		OSF1.50	14270.00	12925.00				MINPT-O-EQU	
1801.92	80.39	1747.85	1721.53	34.20		OSF1.50	14560.00	12925.00				MinPt-O-ADP	
1803.15	99.19	1736.55	1703.96	27.65		OSF1.50	15340.00	12925.00				MinPt-CiCl	
1803.50	100.31	1736.15	1703.20	27.34		OSF1.50	15400.00	12925.00				MINPT-O-EQU	
1803.97	100.87	1736.25	1703.11	27.19		OSF1.50	15430.00	12925.00				MinPt-O-ADP	
1800.35	113.64	1724.11	1686.71	24.05		OSF1.50	15900.00	12925.00				MinPt-CiCl	
1800.70	114.78	1723.70	1685.92	23.81		OSF1.50	15960.00	12925.00				MINPT-O-EQU	
1801.18	115.35	1723.80	1685.83	23.70		OSF1.50	15990.00	12925.00				MinPt-O-ADP	
1795.50	143.26	1699.51	1652.24	18.98		OSF1.50	16990.00	12925.00				MinPt-CiCl	
1793.50	163.60	1683.95	1629.90	16.58		OSF1.50	17710.00	12925.00				MinPt-CiCl	
1790.37	175.46	1672.91	1614.91	15.42		OSF1.50	18130.00	12925.00				MinPt-CiCl	
1791.39	177.71	1672.43	1613.67	15.23		OSF1.50	18230.00	12925.00				MINPT-O-EQU	
1795.12	185.24	1671.16	1609.89	14.64		OSF1.50	18490.00	12925.00				MINPT-O-EQU	
1796.29	186.64	1671.39	1609.65	14.54		OSF1.50	18550.00	12925.00				MinPt-O-ADP	
1798.97	191.04	1671.14	1607.94	14.22		OSF1.50	18690.00	12925.00				MINPT-O-EQU	
1799.88	192.12	1671.33	1607.75	14.14		OSF1.50	18740.00	12925.00				MinPt-O-ADP	
1817.58	212.35	1675.57	1605.25	12.91		OSF1.50	19430.00	12925.00				MINPT-O-EQU	
1818.54	213.46	1675.78	1605.08	12.85		OSF1.50	19480.00	12925.00				MinPt-O-ADP	
1789.61	247.38	1624.21	1542.22	10.91		OSF1.50	20600.00	12925.00				MinPt-CiCl	
1790.93	250.55	1623.42	1540.38	10.77		OSF1.50	20730.00	12925.00				MINPT-O-EQU	
1791.91	251.79	1623.57	1540.12	10.73		OSF1.50	20780.00	12925.00				MinPt-O-ADP	
1808.07	279.29	1621.40	1528.78	9.75		OSF1.50	21670.00	12925.00				MinPt-CiCl	
1803.64	289.98	1609.85	1513.66	9.37		OSF1.50	22030.00	12925.00				MinPt-CiCl	
1805.09	294.98	1607.97	1510.11	9.22		OSF1.50	22220.00	12925.00				MINPT-O-EQU	
1806.31	296.43	1608.23	1509.89	9.18		OSF1.50	22280.00	12925.00				MinPt-O-ADP	
1803.98	317.34	1591.94	1486.64	8.56		OSF1.50	22936.66	12925.00				MinPts	

Final Surveys - Cimarex Vaca
Draw 20-17 Federal #4H MWD
Off-12228ft (Surcon Corrected)
(Def Survey)

Pass

2478.61	32.81	2476.63	2445.80	N/A		MAS = 10.00 (m)	0.00	0.00				MinPts	
2478.63	32.81	2476.62	2445.83	67011.33		MAS = 10.00 (m)	23.00	23.00				WRP	
2478.69	32.81	2476.61	2445.89	22724.54		MAS = 10.00 (m)	50.00	50.00				MINPT-O-EQU	
2366.74	32.81	2355.20	2333.93	248.39		MAS = 10.00 (m)	2100.00	2099.98				MinPt-O-SF	
2324.64	32.81	2313.93	2291.84	267.79		MAS = 10.00 (m)	2780.00	2777.67				MinPt-O-SF	
2303.36	32.81	2292.65	2270.55	265.92		MAS = 10.00 (m)	3080.00	3076.52				MinPt-O-SF	
2211.67	32.81	2198.26	2178.86	196.54		MAS = 10.00 (m)	4700.00	4690.38				MinPt-O-SF	
1721.32	40.63	1693.21	1680.69	68.64		OSF1.50	9180.00	9170.19				MinPt-CiCl	
1721.36	40.72	1693.18	1680.63	68.47		OSF1.50	9200.00	9190.19				MINPT-O-EQU	
1721.40	40.77	1693.19	1680.63	68.38		OSF1.50	9210.00	9200.19				MinPt-O-ADP	
1728.90	44.12	1698.46	1684.78	63.05		OSF1.50	9850.00	9840.19				MinPt-CiCl	
1729.06	44.60	1698.31	1684.46	62.33		OSF1.50	9940.00	9930.19				MINPT-O-EQU	
1729.59	45.42	1698.29	1684.17	61.13		OSF1.50	10090.00	10080.19				MINPT-O-EQU	
1729.68	45.53	1698.30	1684.15	60.98		OSF1.50	10110.00	10100.19				MinPt-O-ADP	
1731.54	46.94	1699.23	1684.60	59.08		OSF1.50	10360.00	10350.19				MINPT-O-EQU	
1731.78	47.22	1699.28	1684.56	58.71		OSF1.50	10410.00	10400.19				MinPt-O-ADP	
1732.86	49.69	1698.71	1683.17	55.63		OSF1.50	10840.00	10830.19				MinPt-CiCl	
1732.89	49.84	1698.68	1683.09	55.50		OSF1.50	10860.00	10850.19				MINPT-O-EQU	
1732.93	49.86	1698.69	1683.08	55.44		OSF1.50	10870.00	10860.19				MinPt-O-ADP	
1799.32	55.35	1761.49	1743.97	51.28		OSF1.50	11970.00	11960.19				MinPt-O-SF	
1854.46	56.68	1815.80	1797.78	51.38		OSF1.50	12280.00	12270.19				MinPt-O-SF	
1861.56	57.14	1822.60	1804.43	51.14		OSF1.50	12350.00	12340.19				MinPt-O-SF	
10276.24	71.93	10227.63	10204.31	220.33		OSF1.50	22936.66	12925.00				TD	

Cimarex Vaca Draw 20-17
Federal #11H Rev1 RM
10Feb21 (Def Plan)

Pass

2399.24	32.81	2397.96	2366.43	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	
2399.24	32.81	2397.91	2366.43	57714.97		MAS = 10.00 (m)	23.00	23.00				WRP	
2399.24	32.81	2385.71	2366.43	195.90		MAS = 10.00 (m)	2000.00	2000.00				MinPts	
2399.29	32.81	2385.69	2366.48	194.75		MAS = 10.00 (m)	2020.00	2020.00				MINPT-O-EQU	
2421.31	32.81	2406.67	2388.50	181.24		MAS = 10.00 (m)	2500.00	2498.73				MinPt-O-SF	
2000.66	59.73	1960.23	1940.93	51.80		OSF1.50	10220.00	10210.19				MinPt-CiCl	
2000.89	61.02	1959.60	1939.87	50.67		OSF1.50	10390.00	10380.19				MINPT-O-EQU	
2001.01	61.16	1959.62	1939.84	50.55		OSF1.50	10410.00	10400.19				MinPt-O-ADP	
2017.79	63.05	1975.18	1954.75	49.39		OSF1.50	10790.00	10780.19				MinPt-O-SF	
2995.65	322.76	2780.05	2672.89	13.97		OSF1.50	22936.66	12925.00				MinPts	

Final Surveys - Cimarex Vaca
Draw 20-17 Federal #3H MWD
Off-22454' (Surcon Corrected)
(Def Survey)

Pass

2498.55	32.81	2497.41	2465.74	807191.36		MAS = 10.00 (m)	0.00	0.00				Surface	
2498.50	32.81	2497.30	2465.69	38898.06		MAS = 10.00 (m)	23.00	23.00				WRP	
2496.05	32.81	2493.78	2463.25	1910.73		MAS = 10.00 (m)	310.00	310.00				MinPts	
2496.09	32.81	2493.68	2463.28	1797.04		MAS = 10.00 (m)	330.00	330.00				MINPT-O-EQU	
2495.21	32.81	2487.78	2462.40	385.68		MAS = 10.00 (m)	1490.00	1490.00				MinPts	
2481.34	32.81	2471.57	2448.53	283.42		MAS = 10.00 (m)	2100.00	2099.98				MinPt-O-SF	
2450.83	32.81	2442.81	2418.02	351.23		MAS = 10.00 (m)	3070.00	3066.56				MINPT-O-EQU	
2450.82	32.81	2442.81	2418.02	351.88		MAS = 10.00 (m)	3080.00	3076.52				MinPts	
2435.03	32.81	2424.70	2402.22	262.53		MAS = 10.00 (m)	4580.00	4570.82				MinPts	

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		
2435.07	32.81	2424.68	2402.26	261.02		MAS = 10.00 (m)	4600.00	4590.74				MINPT-O-EOU	
2435.89	32.81	2425.32	2403.08	256.03		MAS = 10.00 (m)	4700.00	4690.38				MinPt-O-SF	
2135.89	36.43	2111.06	2099.46	91.98		OSF1.50	9220.00	9210.19				MinPt-CiCl	
2136.08	36.98	2110.89	2099.10	90.57		OSF1.50	9310.00	9300.19				MINPT-O-EOU	
2136.89	37.86	2111.11	2099.03	88.40		OSF1.50	9450.00	9440.19				MinPt-O-ADP	
2142.87	49.56	2109.29	2093.31	66.98		OSF1.50	11350.00	11340.19				MinPt-CiCl	
2143.23	50.48	2109.04	2092.76	65.74		OSF1.50	11480.00	11470.19				MINPT-O-EOU	
2143.72	51.08	2109.13	2092.64	64.94		OSF1.50	11570.00	11560.19				MinPt-O-ADP	
2169.34	64.26	2126.06	2105.08	51.66		OSF1.50	13630.00	12925.00				MinPt-CiCl	
2169.50	64.59	2126.00	2104.91	51.39		OSF1.50	13660.00	12925.00				MINPT-O-EOU	
2169.60	64.71	2126.02	2104.89	51.30		OSF1.50	13670.00	12925.00				MinPt-O-ADP	
2168.17	69.91	2121.12	2098.26	47.39		OSF1.50	13980.00	12925.00				MinPt-CiCl	
2162.29	83.44	2106.22	2078.86	39.48		OSF1.50	14650.00	12925.00				MinPt-CiCl	
2162.70	84.48	2105.94	2078.22	38.99		OSF1.50	14710.00	12925.00				MINPT-O-EOU	
2163.32	85.22	2106.07	2078.11	38.66		OSF1.50	14750.00	12925.00				MinPt-O-ADP	
2164.89	92.72	2102.63	2072.17	35.51		OSF1.50	15050.00	12925.00				MinPt-CiCl	
2165.47	94.54	2101.99	2070.92	34.83		OSF1.50	15140.00	12925.00				MINPT-O-EOU	
2166.29	95.56	2102.14	2070.73	34.46		OSF1.50	15190.00	12925.00				MinPt-O-ADP	
2167.11	118.02	2087.98	2049.09	27.84		OSF1.50	16040.00	12925.00				MinPt-CiCl	
2168.95	128.88	2082.59	2040.08	25.49		OSF1.50	16440.00	12925.00				MinPt-CiCl	
2160.62	153.11	2058.09	2007.51	21.34		OSF1.50	17310.00	12925.00				MinPt-CiCl	
2162.40	165.87	2051.37	1996.54	19.70		OSF1.50	17760.00	12925.00				MinPt-CiCl	
2163.24	173.86	2046.88	1989.38	18.80		OSF1.50	18040.00	12925.00				MinPt-CiCl	
2164.03	181.97	2042.26	1982.06	17.96		OSF1.50	18320.00	12925.00				MinPt-CiCl	
2164.05	186.83	2039.05	1977.23	17.49		OSF1.50	18490.00	12925.00				MinPt-CiCl	
2162.47	199.70	2028.88	1962.77	16.34		OSF1.50	18930.00	12925.00				MinPt-CiCl	
2162.32	207.64	2023.45	1954.69	15.71		OSF1.50	19200.00	12925.00				MinPt-CiCl	
2159.95	231.48	2005.18	1928.47	14.07		OSF1.50	20010.00	12925.00				MinPt-CiCl	
2158.27	253.56	1988.78	1904.71	12.83		OSF1.50	20750.00	12925.00				MinPt-CiCl	
2159.21	256.46	1987.79	1902.75	12.69		OSF1.50	20870.00	12925.00				MINPT-O-EOU	
2160.20	257.63	1988.00	1902.58	12.64		OSF1.50	20920.00	12925.00				MinPt-O-ADP	
2165.56	262.40	1990.18	1903.16	12.43		OSF1.50	21090.00	12925.00				MinPt-O-ADP	
2162.28	285.56	1971.46	1876.73	11.41		OSF1.50	21830.00	12925.00				MinPt-CiCl	
2157.59	303.71	1954.67	1853.89	10.70		OSF1.50	22440.00	12925.00				MinPt-CiCl	
2158.06	305.28	1954.09	1852.78	10.64		OSF1.50	22510.00	12925.00				MINPT-O-EOU	
2158.76	306.13	1954.22	1852.63	10.62		OSF1.50	22550.00	12925.00				MinPt-O-ADP	
2162.38	310.12	1955.19	1852.26	10.50		OSF1.50	22680.00	12925.00				MINPT-O-EOU	
2164.19	312.20	1955.62	1851.99	10.44		OSF1.50	22760.00	12925.00				MinPt-O-ADP	
2166.51	314.44	1956.44	1852.07	10.37		OSF1.50	22840.00	12925.00				MinPt-O-ADP	
2169.52	317.10	1957.68	1852.43	10.30		OSF1.50	22936.66	12925.00				MinPt-O-SF	
Cimarex Vaca Draw 20-17 Federal #10H Rev1 RM 10Feb21 (Def Plan)													
2419.24	32.81	2417.95	2386.43	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	Pass
2419.24	32.81	2417.91	2386.43	57886.68		MAS = 10.00 (m)	23.00	23.00				WRP	
2419.24	32.81	2405.71	2386.43	197.52		MAS = 10.00 (m)	2000.00	2000.00				MinPts	
2419.29	32.81	2405.69	2386.48	196.37		MAS = 10.00 (m)	2020.00	2020.00				MINPT-O-EOU	
2440.42	32.81	2425.90	2407.61	184.35		MAS = 10.00 (m)	2480.00	2478.81				MinPt-O-SF	
2683.85	66.25	2639.28	2617.60	61.94		OSF1.50	10100.00	10090.19				MINPT-O-EOU	
2684.03	66.48	2639.28	2617.58	61.72		OSF1.50	10130.00	10120.19				MinPt-O-ADP	
2713.95	69.32	2667.31	2644.63	59.81		OSF1.50	10660.00	10650.19				MinPt-O-SF	
3691.52	333.88	3468.50	3357.63	16.64		OSF1.50	22936.66	12925.00				MinPts	
Cimarex Vaca Draw 20-17 Federal #9H Rev1 RM 10Feb21 (Def Plan)													
2439.22	32.81	2437.94	2406.42	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	Pass
2439.22	32.81	2437.90	2406.42	58056.36		MAS = 10.00 (m)	23.00	23.00				WRP	
2439.22	32.81	2425.82	2406.42	201.22		MAS = 10.00 (m)	1980.00	1980.00				MinPts	
2439.25	32.81	2425.77	2406.44	200.09		MAS = 10.00 (m)	2000.00	2000.00				MINPT-O-EOU	
2441.22	32.81	2427.69	2408.41	199.34		MAS = 10.00 (m)	2100.00	2099.98				MinPt-O-SF	
2683.55	67.51	2638.12	2616.05	60.76		OSF1.50	10780.00	10770.19				MinPt-CiCl	
2683.63	67.81	2638.00	2615.83	60.49		OSF1.50	10820.00	10810.19				MINPT-O-EOU	
2683.75	67.95	2638.02	2615.80	60.36		OSF1.50	10840.00	10830.19				MinPt-O-ADP	
2710.21	70.26	2662.94	2639.95	58.91		OSF1.50	11290.00	11280.19				MinPt-O-SF	
3299.90	339.16	3073.36	2960.73	14.64		OSF1.50	22936.66	12925.00				MinPts	
Final Surveys - Cimarex Vaca Draw 20-17 Federal #2H MWD 0ft-22179ft (Surcon Corrected) (Def Survey)													
2518.58	32.81	2517.56	2485.77	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	Pass
2518.57	32.81	2517.50	2485.76	52469.57		MAS = 10.00 (m)	23.00	23.00				WRP	
2517.53	32.81	2513.34	2484.72	794.38		MAS = 10.00 (m)	760.00	760.00				MinPts	
2518.07	32.81	2511.90	2485.26	488.09		MAS = 10.00 (m)	1220.00	1220.00				MinPts	
2519.16	32.81	2509.01	2486.35	275.74		MAS = 10.00 (m)	2000.00	2000.00				MINPT-O-EOU	
2520.32	32.81	2510.03	2487.51	271.73		MAS = 10.00 (m)	2100.00	2099.98				MinPt-O-SF	
2549.32	32.81	2539.45	2516.51	288.18		MAS = 10.00 (m)	2850.00	2847.40				MinPt-O-SF	
2591.20	32.81	2580.73	2558.39	274.10		MAS = 10.00 (m)	3890.00	3883.44				MinPt-O-SF	
2599.83	32.81	2589.28	2567.02	272.62		MAS = 10.00 (m)	4110.00	4102.60				MinPt-O-SF	
2603.48	32.81	2592.92	2570.68	272.71		MAS = 10.00 (m)	4190.00	4182.30				MinPt-O-SF	
2622.44	32.81	2610.83	2589.63	247.53		MAS = 10.00 (m)	4661.28	4651.78				MinPt-O-SF	
2625.23	32.81	2614.12	2592.42	259.99		MAS = 10.00 (m)	4960.00	4950.19				MinPt-O-SF	
2618.95	32.81	2607.80	2586.14	258.48		MAS = 10.00 (m)	5350.00	5340.19				MinPt-O-SF	
2549.94	38.91	2523.65	2511.04	101.05		OSF1.50	9970.00	9960.19				MinPt-CiCl	
2550.21	39.58	2523.48	2510.65	99.36		OSF1.50	10060.00	10050.19				MINPT-O-EOU	
2552.17	42.05	2523.78	2510.12	93.38		OSF1.50	10440.00	10430.19				MINPT-O-EOU	
2553.12	43.16	2523.99	2509.96	90.93		OSF1.50	10600.00	10590.19				MinPt-O-ADP	
2555.03	45.26	2524.51	2509.78	86.67		OSF1.50	10910.00	10900.19				MinPt-O-ADP	
2605.38	76.47	2554.07	2528.90	51.75		OSF1.50	14360.00	12925.00				MinPt-CiCl	
2606.38	79.75	2552.88	2526.63	49.61		OSF1.50	14530.00	12925.00				MINPT-O-EOU	
2606.82													

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Cl-Cl (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		
2601.23	163.25	2492.07	2437.98	24.04		OSF1.50	17700.00	12925.00				MinPt-CtCt	
2601.74	164.71	2491.60	2437.03	23.83		OSF1.50	17770.00	12925.00				MINPT-O-EQU	
2602.26	165.32	2491.72	2436.94	23.74		OSF1.50	17800.00	12925.00				MinPt-O-ADP	
2600.81	185.66	2476.71	2415.15	21.12		OSF1.50	18480.00	12925.00				MinPt-CtCt	
2601.30	187.13	2476.22	2414.17	20.95		OSF1.50	18550.00	12925.00				MINPT-O-EQU	
2601.82	187.75	2476.32	2414.07	20.89		OSF1.50	18580.00	12925.00				MinPt-O-ADP	
2616.13	197.03	2484.45	2419.10	20.01		OSF1.50	18910.00	12925.00				MINPT-O-EQU	
2618.59	199.73	2485.11	2418.86	19.76		OSF1.50	19000.00	12925.00				MinPt-O-ADP	
2606.23	213.33	2463.71	2392.93	18.40		OSF1.50	19430.00	12925.00				MinPt-CtCt	
2606.94	215.42	2463.00	2391.53	18.23		OSF1.50	19520.00	12925.00				MINPT-O-EQU	
2605.93	231.54	2451.21	2374.36	16.95		OSF1.50	20050.00	12925.00				MinPt-CtCt	
2607.61	234.98	2450.63	2372.63	16.71		OSF1.50	20190.00	12925.00				MINPT-O-EQU	
2609.77	237.58	2451.00	2372.19	16.54		OSF1.50	20290.00	12925.00				MinPt-O-ADP	
2616.32	250.77	2448.83	2365.58	15.71		OSF1.50	20720.00	12925.00				MINPT-O-EQU	
2617.07	251.64	2448.99	2365.43	15.66		OSF1.50	20760.00	12925.00				MinPt-O-ADP	
2606.04	267.64	2427.29	2338.40	14.65		OSF1.50	21270.00	12925.00				MinPt-CtCt	
2606.41	268.83	2426.87	2337.59	14.59		OSF1.50	21330.00	12925.00				MINPT-O-EQU	
2606.97	271.45	2425.67	2335.51	14.45		OSF1.50	21400.00	12925.00				MinPt-CtCt	
2607.62	273.53	2424.93	2334.09	14.35		OSF1.50	21490.00	12925.00				MINPT-O-EQU	
2608.54	274.66	2425.10	2333.88	14.29		OSF1.50	21540.00	12925.00				MinPt-O-ADP	
2608.51	279.16	2422.08	2329.35	14.06		OSF1.50	21660.00	12925.00				MinPt-CtCt	
2609.00	280.96	2421.37	2328.04	13.97		OSF1.50	21740.00	12925.00				MINPT-O-EQU	
2609.53	281.57	2421.49	2327.96	13.95		OSF1.50	21770.00	12925.00				MinPt-O-ADP	
2606.86	302.93	2404.58	2303.93	12.95		OSF1.50	22460.00	12925.00				MinPt-CtCt	
2607.18	303.98	2404.23	2303.25	12.90		OSF1.50	22510.00	12925.00				MINPT-O-EQU	
2607.65	304.51	2404.32	2303.14	12.88		OSF1.50	22540.00	12925.00				MinPt-O-ADP	
2602.95	317.79	2390.76	2285.16	12.32		OSF1.50	22936.66	12925.00				MinPts	

Final Surveys - Cimarex Vaca
Draw 20-17 Federal #13H
MWD Off-22542ft (Surcon
Corrected) (Def Survey)

Pass

3698.83	32.81	3696.85	3666.02	N/A	MAS = 10.00 (m)	0.00	0.00	MinPts
3698.84	32.81	3696.81	3666.03	74033.98	MAS = 10.00 (m)	23.00	23.00	WRP
3699.14	32.81	3696.51	3666.33	5696.95	MAS = 10.00 (m)	180.00	180.00	MINPT-O-EQU
3699.74	32.81	3697.03	3666.93	2336.26	MAS = 10.00 (m)	380.00	380.00	MINPT-O-EQU
3551.79	32.81	3540.74	3518.98	359.94	MAS = 10.00 (m)	2100.00	2099.98	MinPt-O-SF
3415.07	32.81	3402.24	3382.26	296.64	MAS = 10.00 (m)	4700.00	4690.38	MinPt-O-SF
2956.32	42.26	2927.41	2914.06	110.63	OSF1.50	9550.00	9540.19	MinPt-CtCt
2956.48	42.68	2927.29	2913.80	109.48	OSF1.50	9620.00	9610.19	MINPT-O-EQU
2956.63	42.86	2927.32	2913.77	109.00	OSF1.50	9650.00	9640.19	MinPt-O-ADP
2982.66	48.61	2949.54	2934.05	96.19	OSF1.50	10730.00	10720.19	MinPt-O-ADP
2990.11	58.95	2950.16	2931.16	78.65	OSF1.50	12390.00	12380.19	MinPt-CtCt
2990.14	59.07	2950.11	2931.07	78.48	OSF1.50	12410.00	12400.19	MINPT-O-EQU
2990.20	59.13	2950.12	2931.07	78.40	OSF1.50	12420.00	12410.19	MinPt-O-ADP
2990.23	62.86	2947.71	2927.37	73.47	OSF1.50	13160.00	12900.59	MinPt-CtCt
2990.29	63.01	2947.65	2927.25	73.25	OSF1.50	13190.00	12905.80	MINPT-O-EQU
2990.40	63.17	2947.68	2927.24	73.10	OSF1.50	13210.00	12908.92	MinPt-CtCt
2989.14	81.90	2933.92	2907.24	55.97	OSF1.50	14430.00	12925.00	MinPt-CtCt
2989.29	82.48	2933.70	2906.83	55.58	OSF1.50	14470.00	12925.00	MINPT-O-EQU
2989.64	82.88	2933.77	2906.76	55.30	OSF1.50	14500.00	12925.00	MinPt-O-ADP
2994.26	97.67	2928.53	2896.59	46.84	OSF1.50	15130.00	12925.00	MinPt-CtCt
2995.47	104.96	2924.88	2890.50	43.54	OSF1.50	15450.00	12925.00	MINPT-O-EQU
2978.14	135.62	2887.11	2842.53	33.38	OSF1.50	16590.00	12925.00	MinPt-CtCt
2978.62	136.94	2886.70	2841.68	33.06	OSF1.50	16660.00	12925.00	MINPT-O-EQU
2979.10	137.51	2886.81	2841.60	32.93	OSF1.50	16690.00	12925.00	MinPt-O-ADP
2985.92	143.29	2889.78	2842.64	31.65	OSF1.50	16920.00	12925.00	MinPt-O-ADP
2996.91	153.46	2893.99	2843.45	29.63	OSF1.50	17270.00	12925.00	MINPT-O-EQU
2997.80	154.42	2894.24	2843.38	29.45	OSF1.50	17310.00	12925.00	MinPt-O-ADP
3003.33	161.50	2895.00	2841.83	28.20	OSF1.50	17550.00	12925.00	MINPT-O-EQU
3006.29	165.08	2895.63	2841.22	27.61	OSF1.50	17690.00	12925.00	MinPt-O-ADP
2983.21	189.41	2856.31	2793.79	23.84	OSF1.50	18500.00	12925.00	MinPt-CtCt
2984.55	195.04	2853.90	2789.51	23.16	OSF1.50	18720.00	12925.00	MINPT-O-EQU
2985.47	204.77	2848.33	2780.69	22.06	OSF1.50	19030.00	12925.00	MinPt-CtCt
2989.38	215.78	2844.91	2773.60	20.95	OSF1.50	19430.00	12925.00	MINPT-O-EQU
2990.07	216.62	2845.05	2773.45	20.87	OSF1.50	19470.00	12925.00	MinPt-O-ADP
2988.04	229.44	2834.47	2758.60	19.68	OSF1.50	19870.00	12925.00	MinPt-CtCt
2988.51	230.75	2834.04	2757.72	19.57	OSF1.50	19940.00	12925.00	MINPT-O-EQU
2989.01	231.36	2834.16	2757.65	19.52	OSF1.50	19970.00	12925.00	MinPt-O-ADP
2988.19	244.43	2824.62	2743.76	18.47	OSF1.50	20380.00	12925.00	MinPt-CtCt
2989.15	246.85	2823.97	2742.30	18.29	OSF1.50	20490.00	12925.00	MINPT-O-EQU
2990.31	248.23	2824.22	2742.08	18.19	OSF1.50	20550.00	12925.00	MinPt-O-ADP
2995.63	260.64	2821.25	2734.99	17.35	OSF1.50	20930.00	12925.00	MinPt-CtCt
2996.03	264.82	2818.87	2731.21	17.08	OSF1.50	21070.00	12925.00	MinPt-CtCt
2995.76	292.08	2800.43	2703.68	15.47	OSF1.50	21990.00	12925.00	MinPt-CtCt
2994.77	302.86	2792.25	2691.91	14.91	OSF1.50	22350.00	12925.00	MinPt-CtCt
2993.09	318.31	2780.27	2674.78	14.18	OSF1.50	22870.00	12925.00	MinPt-CtCt
2993.37	319.90	2779.49	2673.47	14.11	OSF1.50	22936.66	12925.00	MinPts

Cimarex Vaca Draw 20-17
Federal #31H Rev1 RM
20Feb20 (Def Plan)

Pass

3138.30	32.81	3137.02	3105.49	N/A	MAS = 10.00 (m)	0.00	0.00	Surface
3138.30	32.81	3136.97	3105.49	63031.51	MAS = 10.00 (m)	23.00	23.00	WRP
3138.30	32.81	3124.76	3105.49	255.93	MAS = 10.00 (m)	2000.00	2000.00	MinPts
3138.35	32.81	3124.73	3105.54	254.43	MAS = 10.00 (m)	2020.00	2020.00	MINPT-O-EQU
3159.58	32.81	3145.06	3126.77	238.64	MAS = 10.00 (m)	2480.00	2478.81	MinPt-O-SF
3405.27	32.81	3393.26	3372.46	317.53	MAS = 10.00 (m)	4661.28	4651.78	MinPt-O-SF
3409.77	32.81	3397.75	3376.96	317.37	MAS = 10.00 (m)	4700.00	4690.38	MinPt-O-SF
3418.12	32.81	3406.11	3385.31	318.49	MAS = 10.00 (m)	4810.00	4800.21	MinPt-O-SF
3417.50	61.30	3376.21	3356.21	85.39	OSF1.50	10550.00	10540.19	MinPt-CtCt
3417.56	61.51	3376.13	3356.05	85.09	OSF1.50	10580.00	10570.19	MINPT-O-EQU
3417.67	61.65	3376.15	3356.03	84.90	OSF1.50	10600.00	10590.19	MinPt-O-ADP
3466.70	64.63	3423.19	3402.08	82.07	OSF1.50	11230.00	11220.19	MinPt-O-SF
4079.05	340.13	3851.86	3738.92	18.05	OSF1.50	22936.66	12925.00	MinPts

Cimarex Vaca Draw 20-17
Federal #30H Rev1 RM
20Feb20 (Def Plan)

Pass

3158.28	32.81	3157.00	3125.48	N/A	MAS = 10.00 (m)	0.00	0.00	Surface
3158.28	32.81	3156.95	3125.48	62320.12	MAS = 10.00 (m)	23.00	23.00	WRP
3158.28	32.81	3144.93	3125.48	261.55	MAS = 10.00 (m)	1970.00	1970.00	MinPts
3158.34	32.81	3144.86	3125.53	258.96	MAS = 10.00 (m)	2000.00	2000.00	MINPT-O-EQU

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Cl-Cl (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		
3160.77	32.81	3147.19	3127.98	257.04		MAS = 10.00 (m)	2100.00	2099.98				MinPt-O-SF	
4028.24	36.78	4003.29	3991.46	170.23		OSF1.50	6770.00	6760.19				MinPt-O-SF	
4028.33	54.61	3991.45	3973.66	113.16		OSF1.50	9900.00	9890.19				MINPT-O-EQU	
4028.37	54.72	3991.46	3973.65	113.04		OSF1.50	9910.00	9900.19				MinPt-O-ADP	
4170.35	59.98	4129.94	4110.37	106.55		OSF1.50	11080.00	11070.19				MinPt-O-SF	
4386.16	62.79	4343.88	4323.38	106.95		OSF1.50	11800.00	11790.19				MinPt-O-SF	
4872.44	345.02	4642.00	4527.42	21.26		OSF1.50	22936.66	12925.00				MinPts	

Cimarex Vaca Draw 20-17
Federal #29H Rev1 RM
20Feb20 (Def Plan)

3178.30	32.81	3177.01	3145.49	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	Pass
3178.30	32.81	3176.97	3145.49	63835.18		MAS = 10.00 (m)	23.00	23.00				WRP	
3178.30	32.81	3168.09	3145.49	355.89		MAS = 10.00 (m)	1470.00	1470.00				MinPts	
3178.35	32.81	3168.02	3145.55	351.06		MAS = 10.00 (m)	1500.00	1500.00				MINPT-O-EQU	
3200.79	32.81	3188.78	3167.99	298.24		MAS = 10.00 (m)	2000.00	2000.00				MinPt-O-SF	
4150.70	42.19	4122.14	4108.51	152.17		OSF1.50	7050.00	7040.19				MinPt-O-SF	
4150.48	62.28	4108.45	4088.12	102.04		OSF1.50	10850.00	10840.19				MinPt-CiCi	
4150.47	62.51	4108.35	4087.83	101.61		OSF1.50	10890.00	10880.19				MINPT-O-EQU	
4150.56	62.67	4108.36	4087.90	101.40		OSF1.50	10910.00	10900.19				MinPt-O-ADP	
4258.92	67.86	4213.25	4191.06	95.93		OSF1.50	11940.00	11930.19				MinPt-O-SF	
4565.70	347.68	4333.48	4218.01	19.76		OSF1.50	22936.66	12925.00				MinPts	

Final Surveys - Cimarex Vaca
Draw 20-17 Federal #8H MWD
0ft-22328ft (Surcon Corrected)
(Def Survey)

3718.82	32.81	3717.65	3686.01	N/A		MAS = 10.00 (m)	0.00	0.00				MinPts	Pass
3718.84	32.81	3717.65	3686.03	76463.95		MAS = 10.00 (m)	23.00	23.00				WRP	
3718.35	32.81	3717.14	3686.58	3392.12		MAS = 10.00 (m)	290.00	290.00				MinPts	
3720.26	32.81	3716.60	3687.45	1467.87		MAS = 10.00 (m)	590.00	590.00				MINPT-O-EQU	
3715.00	32.81	3707.12	3682.19	549.93		MAS = 10.00 (m)	1540.00	1540.00				MinPts	
3715.15	32.81	3706.97	3682.34	526.73		MAS = 10.00 (m)	1600.00	1600.00				MINPT-O-EQU	
3717.95	32.81	3708.72	3685.14	458.73		MAS = 10.00 (m)	1810.00	1810.00				MinPt-O-SF	
3690.97	32.81	3680.98	3658.16	416.64		MAS = 10.00 (m)	2100.00	2099.98				MinPt-O-SF	
3671.62	32.81	3663.27	3638.81	509.87		MAS = 10.00 (m)	3140.00	3136.30				MINPT-O-EQU	
3671.62	32.81	3663.28	3638.81	510.76		MAS = 10.00 (m)	3150.00	3146.26				MinPts	
3674.29	32.81	3665.18	3641.49	461.63		MAS = 10.00 (m)	3820.00	3813.71				MINPT-O-EQU	
3674.66	32.81	3665.14	3641.85	438.64		MAS = 10.00 (m)	3960.00	3953.18				MinPt-O-SF	
3657.89	32.81	3647.03	3624.99	380.79		MAS = 10.00 (m)	4540.00	4530.97				MinPts	
3657.84	32.81	3647.00	3625.03	378.39		MAS = 10.00 (m)	4560.00	4550.89				MINPT-O-EQU	
3658.35	32.81	3647.10	3625.54	362.95		MAS = 10.00 (m)	4661.28	4651.78				MINPT-O-EQU	
3658.32	32.81	3647.04	3625.51	361.78		MAS = 10.00 (m)	4700.00	4690.38				MinPt-O-SF	
3380.68	34.99	3356.79	3345.69	152.22		OSF1.50	9060.00	9050.19				MinPt-CiCi	
3380.90	35.72	3356.52	3345.18	149.00		OSF1.50	9180.00	9170.19				MINPT-O-EQU	
3382.48	37.50	3356.91	3344.98	141.64		OSF1.50	9470.00	9460.19				MinPt-O-ADP	
3379.08	46.50	3347.52	3332.59	113.11		OSF1.50	10980.00	10970.19				MinPt-CiCi	
3379.20	46.87	3347.38	3332.33	112.17		OSF1.50	11040.00	11030.19				MINPT-O-EQU	
3379.41	47.13	3347.43	3332.29	111.54		OSF1.50	11080.00	11070.19				MinPt-O-ADP	
3397.91	51.58	3363.01	3346.33	101.81		OSF1.50	11800.00	11790.19				MINPT-O-EQU	
3397.95	51.64	3363.02	3346.32	101.69		OSF1.50	11810.00	11800.19				MinPt-O-ADP	
3398.89	52.26	3363.54	3346.63	100.46		OSF1.50	11910.00	11900.19				MinPt-O-ADP	
3394.75	53.72	3358.42	3341.03	97.53		OSF1.50	12120.00	12110.19				MinPt-CiCi	
3394.79	53.86	3358.38	3340.94	97.28		OSF1.50	12140.00	12130.19				MINPT-O-EQU	
3394.84	53.92	3358.38	3340.92	97.16		OSF1.50	12150.00	12140.19				MinPt-O-ADP	
3402.43	63.89	3359.43	3338.55	81.44		OSF1.50	13580.00	12925.00				MinPt-CiCi	
3402.55	64.18	3359.35	3338.37	81.06		OSF1.50	13610.00	12925.00				MINPT-O-EQU	
3402.63	64.28	3359.37	3338.35	80.93		OSF1.50	13620.00	12925.00				MinPt-O-ADP	
3435.86	72.57	3387.08	3363.29	72.18		OSF1.50	14140.00	12925.00				MinPts	
3444.09	79.27	3390.85	3364.83	66.14		OSF1.50	14440.00	12925.00				MinPt-CiCi	
3430.50	91.54	3369.07	3338.96	56.95		OSF1.50	14980.00	12925.00				MinPt-CiCi	
3430.68	102.36	3362.03	3328.32	50.86		OSF1.50	15420.00	12925.00				MinPt-CiCi	
3430.57	108.52	3357.82	3322.05	47.94		OSF1.50	15660.00	12925.00				MinPt-CiCi	
3431.48	116.60	3353.32	3314.86	44.59		OSF1.50	15970.00	12925.00				MinPt-CiCi	
3431.82	124.40	3348.49	3307.42	41.77		OSF1.50	16260.00	12925.00				MinPt-CiCi	
3432.55	126.76	3347.64	3305.79	40.99		OSF1.50	16370.00	12925.00				MINPT-O-EQU	
3432.99	132.07	3344.54	3300.92	39.34		OSF1.50	16540.00	12925.00				MinPt-O-ADP	
3431.48	137.85	3339.18	3293.63	37.66		OSF1.50	16750.00	12925.00				MinPt-CiCi	
3430.16	144.25	3333.59	3285.91	35.96		OSF1.50	16980.00	12925.00				MinPt-CiCi	
3423.91	158.30	3317.97	3265.61	32.69		OSF1.50	17480.00	12925.00				MinPt-CiCi	
3422.53	162.86	3313.55	3259.67	31.75		OSF1.50	17640.00	12925.00				MinPt-CiCi	
3422.81	163.74	3313.24	3259.07	31.58		OSF1.50	17690.00	12925.00				MINPT-O-EQU	
3423.24	164.26	3313.33	3258.98	31.48		OSF1.50	17720.00	12925.00				MinPt-O-ADP	
3428.57	168.41	3315.89	3260.16	30.75		OSF1.50	17880.00	12925.00				MinPts	
3433.38	174.03	3316.96	3259.35	29.79		OSF1.50	18060.00	12925.00				MINPT-O-EQU	
3435.16	176.29	3317.24	3258.87	29.42		OSF1.50	18150.00	12925.00				MinPt-O-ADP	
3426.91	206.29	3288.97	3220.62	25.06		OSF1.50	19140.00	12925.00				MinPt-CiCi	
3427.33	207.46	3288.63	3219.83	24.93		OSF1.50	19200.00	12925.00				MINPT-O-EQU	
3427.64	207.77	3288.72	3219.87	24.88		OSF1.50	19220.00	12925.00				MinPt-O-ADP	
3416.11	227.19	3264.24	3188.92	22.67		OSF1.50	19850.00	12925.00				MinPt-CiCi	
3416.60	228.82	3263.64	3187.78	22.51		OSF1.50	19930.00	12925.00				MINPT-O-EQU	
3417.26	229.62	3263.76	3187.63	22.44		OSF1.50	19970.00	12925.00				MinPt-O-ADP	
3420.45	234.10	3263.97	3186.35	22.02		OSF1.50	20110.00	12925.00				MINPT-O-EQU	
3421.10	234.92	3264.08	3186.18	21.95		OSF1.50	20150.00	12925.00				MinPt-O-ADP	
3452.59	256.40	3281.27	3196.20	20.29		OSF1.50	20840.00	12925.00				MinPt-CiCi	
3453.04	257.73	3280.83	3195.31	20.18		OSF1.50	20910.00	12925.00				MINPT-O-EQU	
3453.52	258.29	3280.94	3195.23	20.14		OSF1.50	20940.00	12925.00				MinPt-O-ADP	
3423.60	302.29	3221.67	3121.31	17.05		OSF1.50	22390.00	12925.00				MinPt-CiCi	
3424.17	303.96	3221.13	3120.21	16.96		OSF1.50	22470.00	12925.00				MINPT-O-EQU	
3424.85	304.77	3221.26	3120.07	16.92		OSF1.50	22510.00	12925.00				MinPt-O-ADP	
3436.59	318.06	3224.15	3118.53	16.26		OSF1.50	22936.66	12925.00				MinPts	

Final Surveys - Cimarex Vaca
Draw 20-17 Federal #7H MWD
0ft-22544ft (Surcon Corrected)
(Def Survey)

3738.83	32.81	3737.65	3706.02	N/A		MAS = 10.00 (m)	0.00	0.00				MinPts	Pass
3738.88	32.81	3737.66	3706.07	94482.98		MAS = 10.00 (m)	23.00	23.00				WRP	
3752.53	32.81	3742.36	3719.72	411.04		MAS = 10.00 (m)	2100.00	2099.98				MinPt-O-SF	
3751.94	32.81	3741.92	3719.13	418.03		MAS = 10.00 (m)	2180.00	2179.88				MINPT-O-EQU	
3751.94	32.81	3741.95	3719.13	419.31		MAS = 10.00 (m)	2190.00	2189.86				MinPts	
3775.80	32.81	3767.56	3743.00	524.74		MAS = 10.00 (m)	2970.00	2966.94				MinPt-O-SF	
3782.08	32.81	3773.74	3749.27	518.33		MAS = 10.00 (m)	3210.00	3206.03				MinPt-O-SF	

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		
3784.10	32.81	3775.76	3751.29	518.84		MAS = 10.00 (m)	3310.00	3305.65				MinPt-O-SF	
3793.18	32.81	3784.88	3760.37	522.73		MAS = 10.00 (m)	3540.00	3534.77				MinPt-O-SF	
3854.77	32.81	3844.29	3821.96	408.84		MAS = 10.00 (m)	4690.00	4680.41				MinPt-O-SF	
3799.99	32.81	3781.93	3766.18	237.14		MAS = 10.00 (m)	7730.00	7720.19				MinPts	
3799.09	32.81	3781.85	3766.28	234.56		MAS = 10.00 (m)	7780.00	7770.19				MINPT-O-EQU	
3799.93	32.81	3782.09	3767.12	226.30		MAS = 10.00 (m)	7940.00	7930.19				MINPT-O-EQU	
3800.66	32.81	3782.14	3767.85	217.46		MAS = 10.00 (m)	8120.00	8110.19				MINPT-O-EQU	
3825.57	37.70	3800.09	3787.87	156.49		OSF1.50	9840.00	9830.19				MinPt-CtCt	
3825.70	38.23	3799.86	3787.47	154.27		OSF1.50	9930.00	9920.19				MINPT-O-EQU	
3825.89	38.46	3799.91	3787.43	153.35		OSF1.50	9970.00	9960.19				MinPt-O-ADP	
3811.94	48.54	3779.23	3763.40	120.36		OSF1.50	11490.00	11480.19				MinPt-CtCt	
3812.61	50.64	3778.50	3761.97	115.27		OSF1.50	11800.00	11790.19				MINPT-O-EQU	
3812.76	50.82	3778.53	3761.94	114.86		OSF1.50	11830.00	11820.19				MinPt-O-ADP	
3841.88	55.59	3804.52	3786.35	105.69		OSF1.50	12520.00	12509.56				MINPT-O-EQU	
3842.02	55.69	3804.55	3786.32	105.38		OSF1.50	12550.00	12538.76				MinPt-O-ADP	
3823.61	66.09	3779.22	3757.52	88.07		OSF1.50	13730.00	12925.00				MinPt-CtCt	
3823.86	66.71	3779.06	3757.15	87.25		OSF1.50	13780.00	12925.00				MINPT-O-EQU	
3824.07	66.95	3779.10	3757.11	86.93		OSF1.50	13800.00	12925.00				MinPt-O-ADP	
3804.56	86.63	3746.48	3717.93	66.61		OSF1.50	14760.00	12925.00				MinPt-CtCt	
3805.25	88.71	3745.78	3716.54	65.05		OSF1.50	14870.00	12925.00				MINPT-O-EQU	
3807.50	92.45	3745.54	3715.05	62.43		OSF1.50	15030.00	12925.00				MINPT-O-EQU	
3808.69	93.88	3745.78	3714.81	61.48		OSF1.50	15100.00	12925.00				MinPt-O-ADP	
3812.35	98.00	3746.69	3714.35	58.93		OSF1.50	15270.00	12925.00				MinPt-O-ADP	
3832.14	110.09	3758.45	3722.11	52.70		OSF1.50	15760.00	12925.00				MinPts	
3802.22	140.33	3708.34	3661.89	40.92		OSF1.50	16820.00	12925.00				MinPt-CtCt	
3801.86	143.69	3705.74	3658.17	39.95		OSF1.50	16940.00	12925.00				MinPt-CtCt	
3802.34	145.06	3705.31	3657.28	39.58		OSF1.50	17010.00	12925.00				MINPT-O-EQU	
3803.00	145.83	3705.45	3657.17	39.37		OSF1.50	17050.00	12925.00				MinPt-O-ADP	
3805.56	149.64	3705.49	3655.94	38.40		OSF1.50	17170.00	12925.00				MINPT-O-EQU	
3806.02	150.16	3705.58	3655.86	38.26		OSF1.50	17200.00	12925.00				MinPt-O-ADP	
3828.41	161.18	3720.63	3667.23	35.84		OSF1.50	17630.00	12925.00				MinPt-O-ADP	
3833.42	166.08	3722.37	3667.33	34.82		OSF1.50	17780.00	12925.00				MinPt-O-ADP	
3805.50	211.03	3664.48	3594.46	27.17		OSF1.50	19280.00	12925.00				MinPt-CtCt	
3806.90	214.85	3663.34	3592.05	26.69		OSF1.50	19440.00	12925.00				MINPT-O-EQU	
3808.97	217.33	3663.78	3591.65	26.40		OSF1.50	19540.00	12925.00				MinPt-O-ADP	
3812.56	222.78	3663.71	3589.77	25.78		OSF1.50	19710.00	12925.00				MINPT-O-EQU	
3813.55	223.95	3663.93	3589.61	25.65		OSF1.50	19760.00	12925.00				MinPt-O-ADP	
3810.05	248.12	3644.31	3561.93	23.12		OSF1.50	20540.00	12925.00				MinPt-CtCt	
3817.14	267.18	3638.65	3549.96	21.50		OSF1.50	21210.00	12925.00				MINPT-O-EQU	
3818.26	268.53	3638.91	3549.72	21.40		OSF1.50	21270.00	12925.00				MinPt-O-ADP	
3820.27	284.63	3630.19	3535.64	20.20		OSF1.50	21770.00	12925.00				MinPt-CtCt	
3813.12	300.76	3612.29	3512.36	19.07		OSF1.50	22310.00	12925.00				MinPt-CtCt	
3814.03	303.81	3611.16	3510.22	18.89		OSF1.50	22440.00	12925.00				MINPT-O-EQU	
3814.95	304.89	3611.37	3510.07	18.83		OSF1.50	22490.00	12925.00				MinPt-O-ADP	
3821.68	320.16	3607.90	3501.51	17.96		OSF1.50	22936.66	12925.00				MinPts	

Cimarex Vaca Draw 20-17
Federal #6H MWD Final(Surcon
Corrected) (Def Survey)

Pass

3798.38	32.81	3796.38	3765.57	169590.47	MAS = 10.00 (m)	0.00	0.00	Surface
3798.32	32.81	3796.26	3765.52	43249.83	MAS = 10.00 (m)	23.00	23.00	WRP
3795.05	32.81	3790.13	3762.24	1289.53	MAS = 10.00 (m)	690.00	690.00	MinPts
3795.65	32.81	3789.84	3762.84	989.36	MAS = 10.00 (m)	900.00	900.00	MINPT-O-EQU
3798.07	32.81	3790.42	3765.26	669.04	MAS = 10.00 (m)	1310.00	1310.00	MINPT-O-EQU
3793.70	32.81	3782.89	3760.89	429.47	MAS = 10.00 (m)	2060.00	2060.00	MinPts
3793.71	32.81	3782.88	3760.90	428.74	MAS = 10.00 (m)	2070.00	2069.99	MINPT-O-EQU
3793.86	32.81	3782.99	3761.06	426.39	MAS = 10.00 (m)	2100.00	2099.98	MinPt-O-SF
3843.07	32.81	3833.74	3810.26	522.74	MAS = 10.00 (m)	3200.00	3196.07	MinPt-O-SF
3875.69	32.81	3866.44	3842.88	532.64	MAS = 10.00 (m)	3640.00	3634.39	MinPt-O-SF
3939.55	32.81	3928.09	3906.74	415.21	MAS = 10.00 (m)	4661.28	4651.78	MinPt-O-SF
3954.73	32.81	3943.91	3921.92	447.28	MAS = 10.00 (m)	5090.00	5080.19	MinPt-O-SF
3999.48	32.81	3983.93	3966.67	294.67	MAS = 10.00 (m)	7110.00	7100.19	MinPts
3999.64	32.81	3983.73	3966.83	286.95	MAS = 10.00 (m)	7230.00	7220.19	MINPT-O-EQU
4453.98	41.27	4425.81	4412.71	169.97	OSF1.50	10740.00	10730.19	MinPt-O-SF
5024.49	46.79	4992.64	4977.70	168.12	OSF1.50	11900.00	11890.19	MinPt-O-SF
5111.40	47.42	5079.13	5063.99	168.69	OSF1.50	12060.00	12050.19	MinPt-O-SF
5595.45	52.92	5559.51	5542.53	164.72	OSF1.50	13540.00	12925.00	MinPt-CtCt
5595.58	53.28	5559.39	5542.29	163.51	OSF1.50	13580.00	12925.00	MINPT-O-EQU
5595.82	53.58	5559.44	5542.24	162.61	OSF1.50	13610.00	12925.00	MinPt-O-ADP
5605.85	58.35	5566.23	5547.50	149.10	OSF1.50	13940.00	12925.00	MinPts
5609.77	62.70	5567.31	5547.07	138.52	OSF1.50	14100.00	12925.00	MINPT-O-EQU
5610.26	63.30	5567.40	5546.98	137.19	OSF1.50	14140.00	12925.00	MinPt-O-ADP
5599.60	74.99	5548.94	5524.61	115.01	OSF1.50	14630.00	12925.00	MinPt-CtCt
5600.04	76.21	5548.57	5523.83	113.12	OSF1.50	14710.00	12925.00	MINPT-O-EQU
5600.57	76.83	5548.69	5523.74	112.20	OSF1.50	14750.00	12925.00	MinPt-O-ADP
5579.19	103.75	5509.37	5475.45	82.20	OSF1.50	15740.00	12925.00	MinPt-CtCt
5579.61	105.02	5508.94	5474.59	81.19	OSF1.50	15820.00	12925.00	MINPT-O-EQU
5580.01	105.50	5509.02	5474.51	80.82	OSF1.50	15850.00	12925.00	MinPt-O-ADP
5597.73	119.18	5517.62	5478.55	71.62	OSF1.50	16300.00	12925.00	MinPt-CtCt
5597.10	129.01	5510.43	5468.08	66.07	OSF1.50	16650.00	12925.00	MinPt-CtCt
5595.55	148.22	5496.07	5447.33	57.37	OSF1.50	17320.00	12925.00	MinPt-CtCt
5596.40	150.86	5495.16	5445.52	56.36	OSF1.50	17450.00	12925.00	MINPT-O-EQU
5597.40	152.10	5495.34	5445.30	55.91	OSF1.50	17510.00	12925.00	MinPt-O-ADP
5598.84	161.74	5490.35	5437.10	52.55	OSF1.50	17790.00	12925.00	MinPt-CtCt
5596.70	175.51	5479.03	5421.18	48.36	OSF1.50	18260.00	12925.00	MinPt-CtCt
5596.90	188.00	5470.91	5408.91	45.12	OSF1.50	18690.00	12925.00	MinPt-CtCt
5596.98	193.27	5467.48	5403.72	43.87	OSF1.50	18870.00	12925.00	MinPt-CtCt
5590.21	234.90	5432.95	5385.31	35.99	OSF1.50	20280.00	12925.00	MinPt-CtCt
5591.11	237.60	5432.05	5383.51	35.58	OSF1.50	20410.00	12925.00	MINPT-O-EQU
5589.59	307.34	5384.04	5282.25	27.45	OSF1.50	22710.00	12925.00	MinPt-CtCt
5589.84	308.07	5383.80	5281.77	27.38	OSF1.50	22760.00	12925.00	MINPT-O-EQU
5590.21	308.50	5383.89	5281.71	27.35	OSF1.50	22790.00	12925.00	MinPt-O-ADP
5594.32	310.46	5386.68	5283.85	27.19	OSF1.50	22936.66	12925.00	MinPt-O-SF

Cimarex Vaca Draw 20-17
Federal #5H Final MWD(Surcon
Corrected) (Def Survey)

Pass

3818.39	32.81	3816.40	3785.58	263530.92	MAS = 10.00 (m)	0.00	0.00	Surface
3818.36	32.81	3816.31	3785.55	52025.62	MAS = 10.00 (m)	23.00	23.00	WRP
3816.42	32.81	3812.28	3783.61	1766.86	MAS = 10.00 (m)	530.00	530.00	MinPts
3816.51	32.81	3811.54	3783.71	1274.95	MAS = 10.00 (m)	730.00	730.00	MinPts
3816.75	32.81	3811.15	3783.94	1055.92	MAS = 10.00 (m)	860.00	860.00	MINPT-O-EQU

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Cl-Cl (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		
3818.54	32.81	3809.44	3785.74	535.63		MAS = 10.00 (m)	1640.00	1640.00				MinPts	
3818.63	32.81	3809.31	3785.82	519.90		MAS = 10.00 (m)	1690.00	1690.00				MINPT-O-EQU	
3828.62	32.81	3817.95	3795.81	440.09		MAS = 10.00 (m)	2100.00	2099.98				MinPt-O-SF	
3908.66	32.81	3900.05	3875.85	589.71		MAS = 10.00 (m)	3140.00	3136.30				MinPt-O-SF	
4047.23	32.81	4036.17	4014.42	445.42		MAS = 10.00 (m)	4700.00	4690.38				MinPt-O-SF	
4079.49	32.81	4066.92	4046.68	384.97		MAS = 10.00 (m)	6140.00	6130.19				MinPts	
4079.52	32.81	4066.90	4046.71	383.24		MAS = 10.00 (m)	6160.00	6150.19				MINPT-O-EQU	
4100.48	32.81	4080.27	4067.67	224.78		MAS = 10.00 (m)	8350.00	8340.19				MinPts	
4100.94	32.81	4079.75	4068.13	213.31		MAS = 10.00 (m)	8600.00	8590.19				MINPT-O-EQU	
4108.27	35.62	4083.90	4072.70	183.41		OSF1.50	9390.00	9380.19				MINPT-O-EQU	
4108.31	35.62	4083.91	4072.69	183.09		OSF1.50	9400.00	9390.19				MinPt-O-ADP	
4465.70	45.19	4434.91	4420.51	154.94		OSF1.50	11320.00	11310.19				MinPt-O-SF	
4656.13	48.47	4623.16	4607.67	150.17		OSF1.50	11800.00	11790.19				MinPt-O-SF	
5161.01	56.62	5122.60	5104.39	141.63		OSF1.50	13610.00	12925.00				MinPt-CiCl	
5161.31	57.42	5122.37	5103.89	139.59		OSF1.50	13680.00	12925.00				MINPT-O-EQU	
5161.73	57.90	5122.47	5103.83	138.40		OSF1.50	13720.00	12925.00				MinPt-O-ADP	
5153.12	68.58	5106.75	5084.55	116.02		OSF1.50	14260.00	12925.00				MinPt-CiCl	
5153.60	69.76	5106.44	5083.85	114.02		OSF1.50	14340.00	12925.00				MINPT-O-EQU	
5154.14	70.38	5106.56	5083.76	112.98		OSF1.50	14380.00	12925.00				MinPt-O-ADP	
5150.61	88.06	5091.24	5062.54	89.71		OSF1.50	15080.00	12925.00				MinPt-CiCl	
5152.14	93.30	5089.29	5058.85	84.60		OSF1.50	15320.00	12925.00				MINPT-O-EQU	
5142.17	112.42	5066.56	5029.75	69.81		OSF1.50	16000.00	12925.00				MinPt-CiCl	
5142.72	114.02	5066.05	5028.70	68.82		OSF1.50	16090.00	12925.00				MINPT-O-EQU	
5143.33	114.73	5066.19	5028.60	68.40		OSF1.50	16130.00	12925.00				MinPt-O-ADP	
5149.13	129.88	5061.92	5019.30	60.39		OSF1.50	16660.00	12925.00				MINPT-O-EQU	
5150.57	131.55	5062.21	5019.02	59.60		OSF1.50	16740.00	12925.00				MinPt-O-ADP	
5153.87	135.19	5063.09	5018.69	58.01		OSF1.50	16870.00	12925.00				MINPT-O-EQU	
5155.52	137.00	5063.53	5018.52	57.25		OSF1.50	16940.00	12925.00				MinPt-O-ADP	
5144.42	155.92	5039.82	4988.50	50.11		OSF1.50	17540.00	12925.00				MinPt-CiCl	
5144.59	162.01	5035.93	4982.58	48.20		OSF1.50	17750.00	12925.00				MinPt-CiCl	
5141.36	187.93	5015.41	4953.42	41.46		OSF1.50	18640.00	12925.00				MinPt-CiCl	
5137.54	198.49	5004.55	4939.05	39.20		OSF1.50	19000.00	12925.00				MinPt-CiCl	
5141.03	210.34	5000.16	4930.71	37.00		OSF1.50	19400.00	12925.00				MinPt-CiCl	
5142.12	213.60	4999.06	4928.52	36.43		OSF1.50	19550.00	12925.00				MINPT-O-EQU	
5153.02	236.48	4994.78	4916.62	32.96		OSF1.50	20330.00	12925.00				MINPT-O-EQU	
5144.53	274.14	4961.11	4870.39	28.34		OSF1.50	21550.00	12925.00				MinPt-CiCl	
5147.59	281.74	4959.12	4865.87	27.59		OSF1.50	21850.00	12925.00				MINPT-O-EQU	
5156.52	293.18	4960.41	4863.34	26.55		OSF1.50	22250.00	12925.00				MinPt-O-ADP	
5151.48	308.66	4945.04	4842.81	25.19		OSF1.50	22710.00	12925.00				MinPt-CiCl	
5151.76	309.40	4944.83	4842.36	25.13		OSF1.50	22760.00	12925.00				MINPT-O-EQU	
5152.01	309.69	4944.86	4842.32	25.11		OSF1.50	22780.00	12925.00				MinPt-O-ADP	
5156.64	311.78	4948.13	4844.86	24.96		OSF1.50	22936.66	12925.00				MinPt-O-SF	

Cimarex Vaca Draw 20-17
Federal #1H ST01 Off-21966ft
(Def Survey)

Pass

3838.35	32.81	3837.18	3805.54	05172.92	MAS = 10.00 (m)	0.00	0.00		Surface
3838.25	32.81	3837.01	3805.44	34604.17	MAS = 10.00 (m)	23.00	23.00		WRP
3836.36	32.81	3834.04	3803.55	3223.40	MAS = 10.00 (m)	290.00	290.00		MinPts
3836.83	32.81	3833.66	3804.02	1886.30	MAS = 10.00 (m)	450.00	450.00		MINPT-O-EQU
3866.45	32.81	3856.52	3833.64	439.37	MAS = 10.00 (m)	2000.00	2000.00		MinPt-O-SF
3870.20	32.81	3860.25	3837.39	438.70	MAS = 10.00 (m)	2100.00	2099.98		MinPt-O-SF
4115.14	32.81	4104.93	4082.33	452.79	MAS = 10.00 (m)	4700.00	4690.38		MinPt-O-SF
4251.40	32.81	4230.52	4218.59	215.23	MAS = 10.00 (m)	8490.00	8480.19		MINPT-O-EQU
4256.11	36.34	4231.51	4219.77	181.28	OSF1.50	9520.00	9510.19		MinPt-CiCl
4224.90	50.63	4190.77	4174.27	128.00	OSF1.50	11790.00	11780.19		MinPt-CiCl
4225.00	50.94	4190.66	4174.06	127.19	OSF1.50	11840.00	11830.19		MINPT-O-EQU
4225.10	51.06	4190.68	4174.04	126.89	OSF1.50	11860.00	11850.19		MinPt-O-ADP
4254.34	62.49	4212.30	4191.85	103.97	OSF1.50	13490.00	12925.00		MinPt-CiCl
4254.56	63.17	4212.07	4191.39	102.84	OSF1.50	13550.00	12925.00		MINPT-O-EQU
4254.75	63.39	4212.11	4191.36	102.48	OSF1.50	13570.00	12925.00		MinPt-O-ADP
4246.34	75.06	4195.92	4171.28	86.13	OSF1.50	14210.00	12925.00		MinPt-CiCl
4246.65	75.97	4195.63	4170.68	85.10	OSF1.50	14270.00	12925.00		MINPT-O-EQU
4247.16	76.57	4195.73	4170.58	84.42	OSF1.50	14310.00	12925.00		MinPt-O-ADP
4255.18	86.33	4197.25	4168.85	74.90	OSF1.50	14730.00	12925.00		MinPt-CiCl
4249.01	101.08	4181.24	4147.93	63.75	OSF1.50	15340.00	12925.00		MinPt-CiCl
4249.75	103.27	4180.52	4146.48	62.39	OSF1.50	15450.00	12925.00		MINPT-O-EQU
4250.58	104.27	4180.70	4146.32	61.80	OSF1.50	15500.00	12925.00		MinPt-O-ADP
4228.76	142.52	4133.37	4086.24	44.85	OSF1.50	16890.00	12925.00		MinPt-CiCl
4229.52	144.87	4132.56	4084.65	44.13	OSF1.50	17000.00	12925.00		MINPT-O-EQU
4231.18	149.07	4131.43	4082.12	42.89	OSF1.50	17150.00	12925.00		MINPT-O-EQU
4232.52	150.64	4131.71	4081.88	42.45	OSF1.50	17220.00	12925.00		MinPt-O-ADP
4234.86	153.57	4132.10	4081.29	41.66	OSF1.50	17320.00	12925.00		MINPT-O-EQU
4235.08	153.79	4132.17	4081.28	41.60	OSF1.50	17330.00	12925.00		MinPt-O-ADP
4245.21	161.94	4136.88	4083.27	39.59	OSF1.50	17620.00	12925.00		MINPT-O-EQU
4245.86	170.41	4131.87	4075.44	37.61	OSF1.50	17870.00	12925.00		MinPt-CiCl
4248.78	177.97	4129.76	4070.81	36.03	OSF1.50	18160.00	12925.00		MINPT-O-EQU
4250.31	179.84	4130.04	4070.47	35.66	OSF1.50	18240.00	12925.00		MinPt-O-ADP
4231.80	213.39	4089.17	4018.42	29.90	OSF1.50	19350.00	12925.00		MinPt-CiCl
4232.36	215.25	4088.48	4017.11	29.64	OSF1.50	19440.00	12925.00		MINPT-O-EQU
4233.22	216.27	4088.65	4016.94	29.51	OSF1.50	19490.00	12925.00		MinPt-O-ADP
4251.69	228.52	4098.96	4023.17	28.04	OSF1.50	19920.00	12925.00		MINPT-O-EQU
4252.99	232.34	4097.73	4020.66	27.59	OSF1.50	19990.00	12925.00		MinPt-CiCl
4217.63	259.72	4044.11	3957.91	24.46	OSF1.50	20920.00	12925.00		MinPt-CiCl
4218.59	262.46	4043.24	3956.13	24.21	OSF1.50	21040.00	12925.00		MINPT-O-EQU
4220.15	264.29	4043.59	3955.87	24.05	OSF1.50	21120.00	12925.00		MinPt-O-ADP
4231.11	273.22	4048.59	3957.89	23.32	OSF1.50	21440.00	12925.00		MinPt-O-ADP
4238.21	278.67	4052.05	3959.54	22.90	OSF1.50	21610.00	12925.00		MinPts
4242.27	289.24	4049.06	3953.03	22.08	OSF1.50	21910.00	12925.00		MinPt-CiCl
4246.36	300.05	4045.95	3946.31	21.30	OSF1.50	22310.00	12925.00		MINPT-O-EQU
4247.60	301.55	4046.19	3946.05	21.20	OSF1.50	22370.00	12925.00		MinPt-O-ADP
4249.11	313.10	4040.00	3936.01	20.43	OSF1.50	22710.00	12925.00		MinPt-CiCl
4249.35	313.75	4039.88	3935.60	20.38	OSF1.50	22750.00	12925.00		MINPT-O-EQU
4249.61	314.07	4039.85	3935.54	20.36	OSF1.50	22770.00	12925.00		MinPt-O-ADP
4255.42	316.45	4044.07	3938.97	20.24	OSF1.50	22936.66	12925.00		MinPt-O-SF

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		
3870.20	32.81	3859.40	3837.39	438.64		MAS = 10.00 (m)	2100.00	2099.98				MinPt-O-SF	
4115.14	32.81	4104.08	4082.33	452.69		MAS = 10.00 (m)	4700.00	4690.38				MinPt-O-SF	
4251.40	32.81	4229.67	4218.59	215.19		MAS = 10.00 (m)	8490.00	8480.19				MINPT-O-EQU	
4256.11	37.19	4230.66	4218.92	181.25		OSF1.50	9520.00	9510.19				MinPt-CtCt	
4221.35	53.49	4185.03	4167.86	122.87		OSF1.50	12120.00	12110.19				MinPt-CtCt	
4221.34	54.80	4184.15	4166.55	119.83		OSF1.50	12320.00	12310.19				MinPt-CtCt	
4220.06	57.42	4181.12	4162.64	114.12		OSF1.50	12770.00	12730.89				MinPt-CtCt	
4220.08	57.47	4181.10	4162.60	114.01		OSF1.50	12780.00	12738.32				MINPT-O-EQU	
4220.12	57.53	4181.11	4162.59	113.91		OSF1.50	12790.00	12745.61				MinPt-O-ADP	
5039.44	83.19	4983.32	4956.25	93.04		OSF1.50	15590.00	12925.00				MinPt-O-SF	
5055.85	83.45	4999.55	4972.39	93.04		OSF1.50	15620.00	12925.00				MinPt-O-SF	
10941.43	108.22	10868.62	10833.21	154.46		OSF1.50	22936.66	12925.00				TD	
Cimarex Vaca Draw 20-17 Federal #1H Rev0 RM 10Apr17 (Non-Def Plan)													
3838.40	32.81	3836.41	3805.59	863345.87		MAS = 10.00 (m)	0.00	0.00				Surface	Pass
3838.40	32.81	3836.36	3805.59	69067.67		MAS = 10.00 (m)	23.00	23.00				WRP	
3838.40	32.81	3824.15	3805.59	312.70		MAS = 10.00 (m)	2000.00	2000.00				MinPts	
3838.41	32.81	3824.13	3805.60	311.78		MAS = 10.00 (m)	2010.00	2010.00				MINPT-O-EQU	
4000.38	103.20	3930.92	3897.18	59.25		OSF1.50	12840.00	12779.81				MinPt-CtCt	
4000.42	103.38	3930.87	3897.09	59.18		OSF1.50	12860.00	12792.39				MINPT-O-EQU	
4000.52	103.46	3930.89	3897.07	59.11		OSF1.50	12880.00	12804.30				MinPt-O-ADP	
4103.27	108.19	4030.48	3995.08	57.92		OSF1.50	13780.00	12925.00				MinPt-O-SF	
4114.68	108.49	4041.70	4006.19	57.92		OSF1.50	13830.00	12925.00				MinPt-O-SF	
10835.29	136.22	10743.82	10699.07	121.05		OSF1.50	22936.66	12925.00				TD	



Cimarex Vaca Draw 20-17 Federal #61H Rev1 RM 24Feb21 Proposal Geodetic Report (Def Plan)



Report Date: February 24, 2021 - 03:35 PM
Client: Cimarex Energy
Field: NM Lea County (NAD 83)
Structure / Slot: Cimarex Vaca Draw 20-17 Federal #61H / New Slot
Well: Vaca Draw 20-17 Federal #61H
Borehole: Vaca Draw 20-17 Federal #61H
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Vaca Draw 20-17 Federal #61H Rev1 RM 24Feb21
Survey Date: February 24, 2021
Tort / AHD / DDI / ERD Ratio: 100.000 ° / 10468.432 ft / 6.269 / 0.810
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 6' 35.63006", W 103° 35' 18.76651"
Location Grid N/E Y/X: N 404513.690 ftUS, E 771939.650 ftUS
CRS Grid Convergence Angle: 0.3959 °
Grid Scale Factor: 0.99997
Version / Patch: 2.10.824.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 359.634 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3421.300 ft above MSL
Seabed / Ground Elevation: 3398.300 ft above MSL
Magnetic Declination: 6.449 °
Total Gravity Field Strength: 998.4331mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 47594.875 nT
Magnetic Dip Angle: 59.675 °
Declination Date: February 24, 2021
Magnetic Declination Model: HDGM 2020
North Reference: Grid North
Grid Convergence Used: 0.3959 °
Total Corr Mag North->Grid North: 6.0531 °
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 [390' FSL, 860' FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	404513.69	771939.65	N 32.1099	W 103.5885
Nudge 2"/100' DLS	2000.00	0.00	135.34	2000.00	0.00	0.00	0.00	0.00	404513.69	771939.65	N 32.1099	W 103.5885
Hold Nudge Drop to Vertical	2250.00	5.00	135.34	2249.68	-7.80	-7.75	7.66	2.00	404505.94	771947.31	N 32.1099	W 103.5885
2"/100' DLS	4661.28	5.00	135.34	4651.78	-158.23	-157.25	155.37	0.00	404356.45	772095.02	N 32.1095	W 103.5880
Hold Vertical	4911.28	0.00	135.34	4901.47	-166.04	-165.00	163.04	2.00	404348.70	772102.68	N 32.1094	W 103.5880
KOP - Build	12424.81	0.00	135.34	12415.00	-166.04	-165.00	163.04	0.00	404348.70	772102.68	N 32.1094	W 103.5880
12"/100' DLS												
Build 4"/100' DLS	13049.81	75.00	359.63	12876.19	187.85	188.88	160.77	12.00	404702.56	772100.42	N 32.1104	W 103.5880
Landing Point Cimarex Vaca Draw 20-17	13424.81	90.00	359.63	12925.00	558.58	559.60	158.40	4.00	405073.28	772098.05	N 32.1114	W 103.5880
Federal #61H - PBHL [100' FNL, 698' FEL]	22936.66	90.00	359.63	12925.00	10070.43	10071.26	97.57	0.00	414584.63	772037.22	N 32.1376	W 103.5880

Survey Type: Def Plan

Survey Error Model: ISCWSA Rev 0 *** 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	23.000	1/100.000	17.500	13.375		NAL_MWD_IFR1+MS-Depth Only	Vaca Draw 20-17 Federal #61H / Cimarex Vaca Draw 20-17 Federal #61H Rev1 RM 24Feb21
	1	23.000	22936.660	1/100.000	17.500	13.375		NAL_MWD_IFR1+MS	Vaca Draw 20-17 Federal #61H / Cimarex Vaca Draw 20-17 Federal



Cimarex Energy

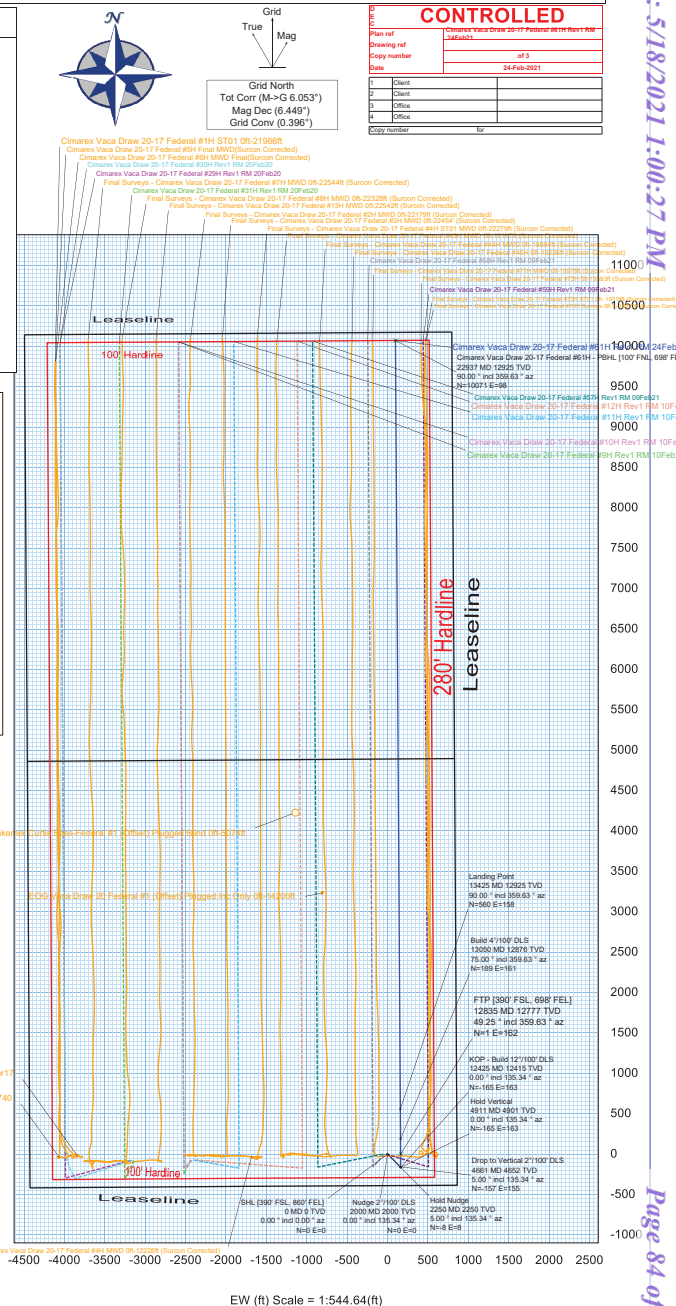
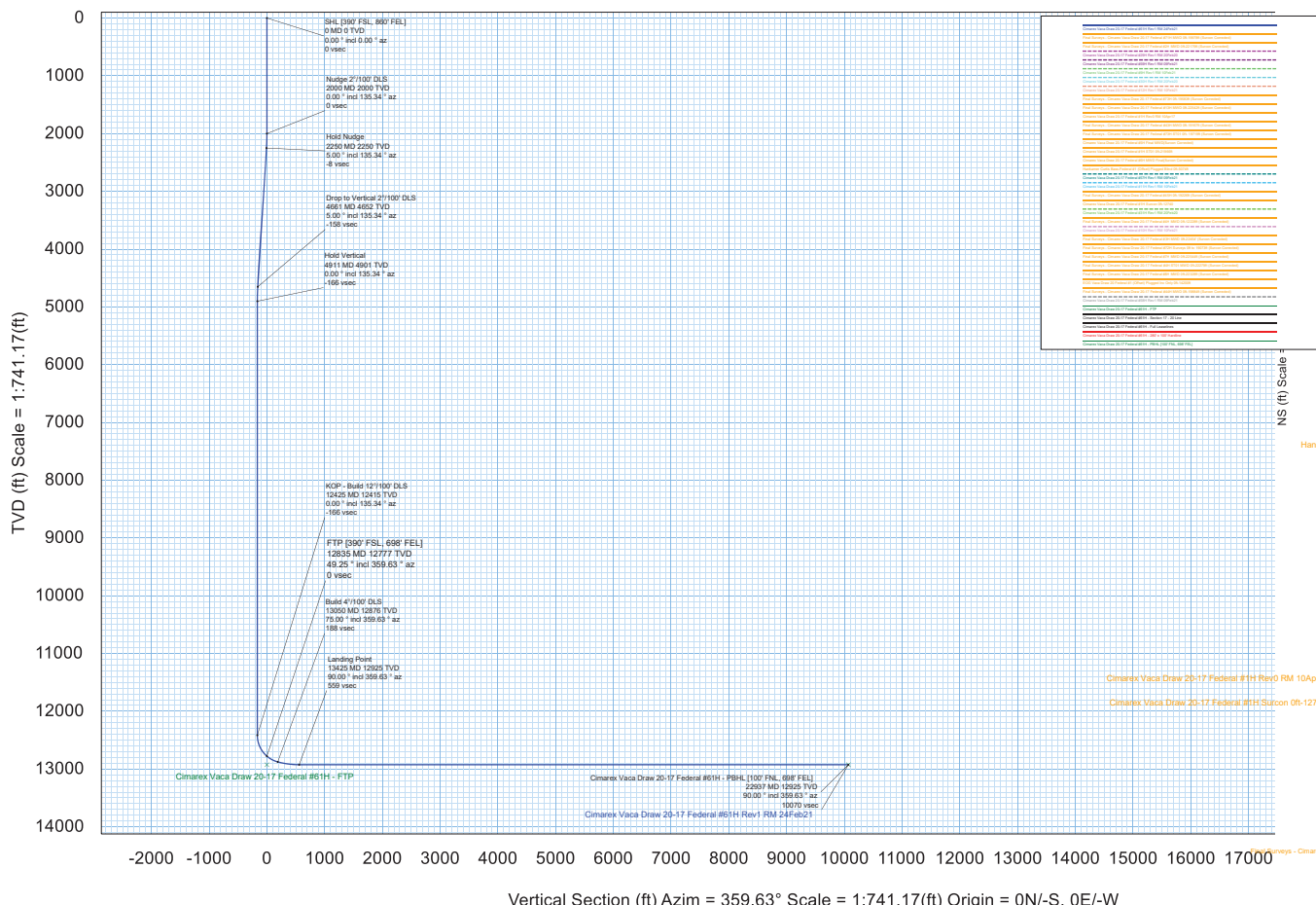
Rev 1



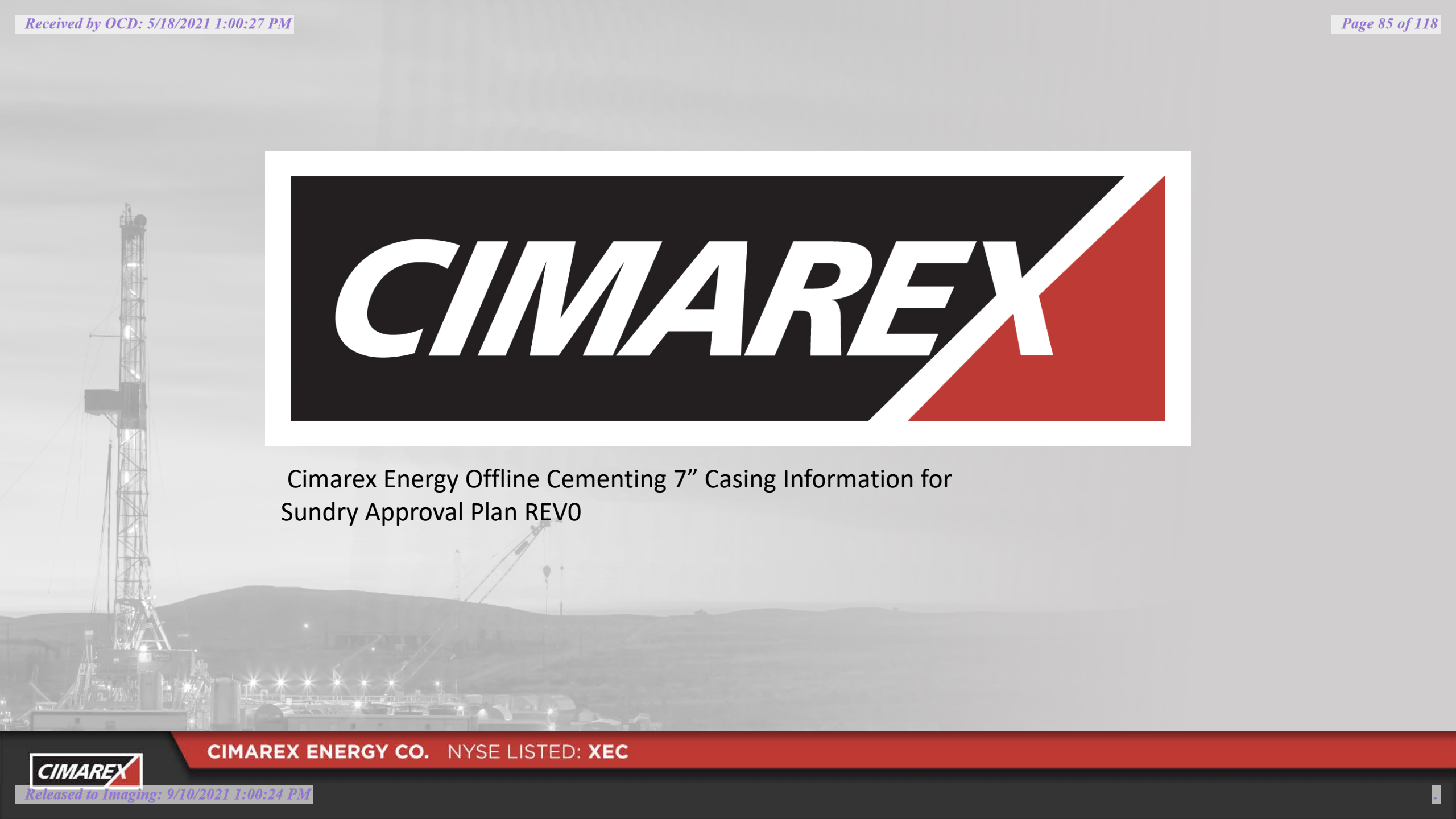
Borehole:	Vaca Draw 20-17 Federal #61H	Well:	Vaca Draw 20-17 Federal #61H	Field:	NM Lea County (NAD 83)	Structure:	Cimarex Vaca Draw 20-17 Federal #61H
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Gravity & Magnetic Parameters	Dip: 59.675°	Date: 24-Feb-2021	Surface Location	NAD83 New Mexico State Plane, Eastern Zone, US Feet	Grid Conv:	Miscellaneous	TVD Ref:
Model: HDGM 2020	FS: 47584.875nT	Gravity FS: 980.433mgm (9.80665 Based)	Lat: N 32 6 35.63	Northings: 404513.69HUS	Scale Fact: 0.3859°	Plan: New Slot	RKB(3421.3ft above MSL)
MagDec: 6.449°			Lon: W 103 35 18.77	Eastings: 771939.65HUS	0.99997	Plan: Cimarex Vaca Draw 20-17 Federal #61H Rev1 RM 24Feb21	

Critical Points								
Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)S(-)	E(+)W(-)	DLS
SHL [390° FSL, 860° FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Nudge 2°/100' DLS	2000.00	0.00	135.34	2000.00	0.00	0.00	0.00	0.00
Hold Nudge	2250.00	5.00	135.34	2249.68	-7.80	-7.75	7.66	2.00
Drop to Vertical 2°/100' DLS	4661.28	5.00	135.34	4651.78	-158.23	-157.25	155.37	0.00
Hold Vertical	4911.28	0.00	135.34	4901.47	-166.04	-165.00	163.04	2.00
KOP - Build 12°/100' DLS	12424.81	0.00	135.34	12415.00	-166.04	-165.00	163.04	0.00
FTP [390° FSL, 698° FEL]	12835.25	49.25	359.63	12776.72	-0.22	0.81	161.98	12.00
Build 4°/100' DLS	13049.81	75.00	359.63	12876.19	187.85	188.88	160.77	12.00
Landing Point	13424.81	90.00	359.63	12925.00	558.58	559.60	158.40	4.00
Cimarex Vaca Draw 20-17 Federal #61H - PBHL [100° FNL, 698° FEL]	22936.66	90.00	359.63	12925.00	10070.43	10071.26	97.57	0.00



CONTROLLED	
Plan ref	Controlled
Issued ref	Controlled
Copy number	of 3
Date	24-Feb-2021
1 Client	
2 Client	
3 Office	
4 Office	
Copy number	for



CIMAREX

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



CIMAREX ENERGY CO. NYSE LISTED: XEC

Cementing Operational Workflow

Conventional Cementing

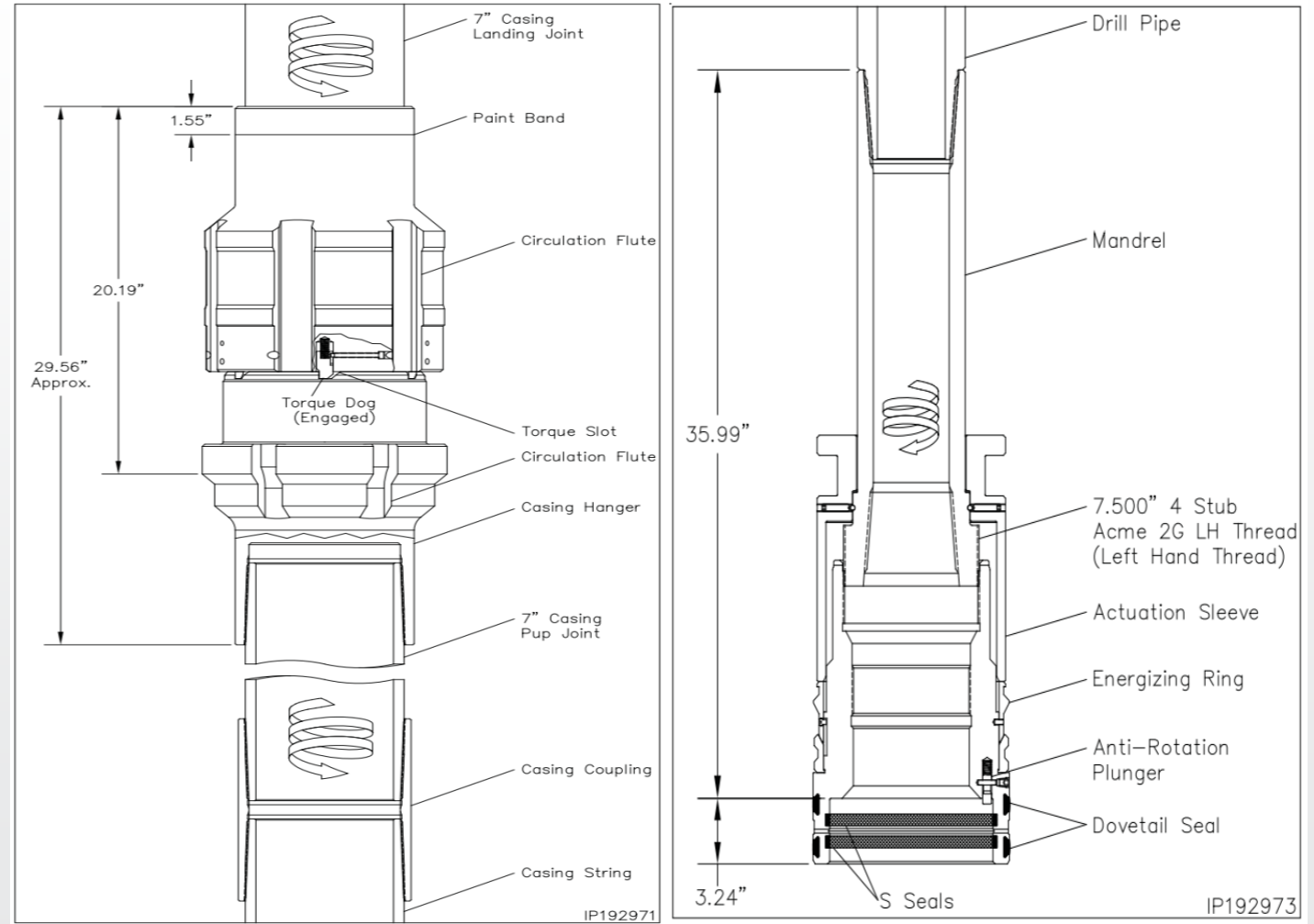
1. Land casing on fluted mandrel hanger
2. Circulate down casing, taking returns through BOP stack
3. Pump lead and tail cement
4. Displace cement and bump the plug
5. Ensure floats are holding pressure
6. RD cement crew
7. Install packoff to isolate pressure
8. Install BPV and skid rig

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

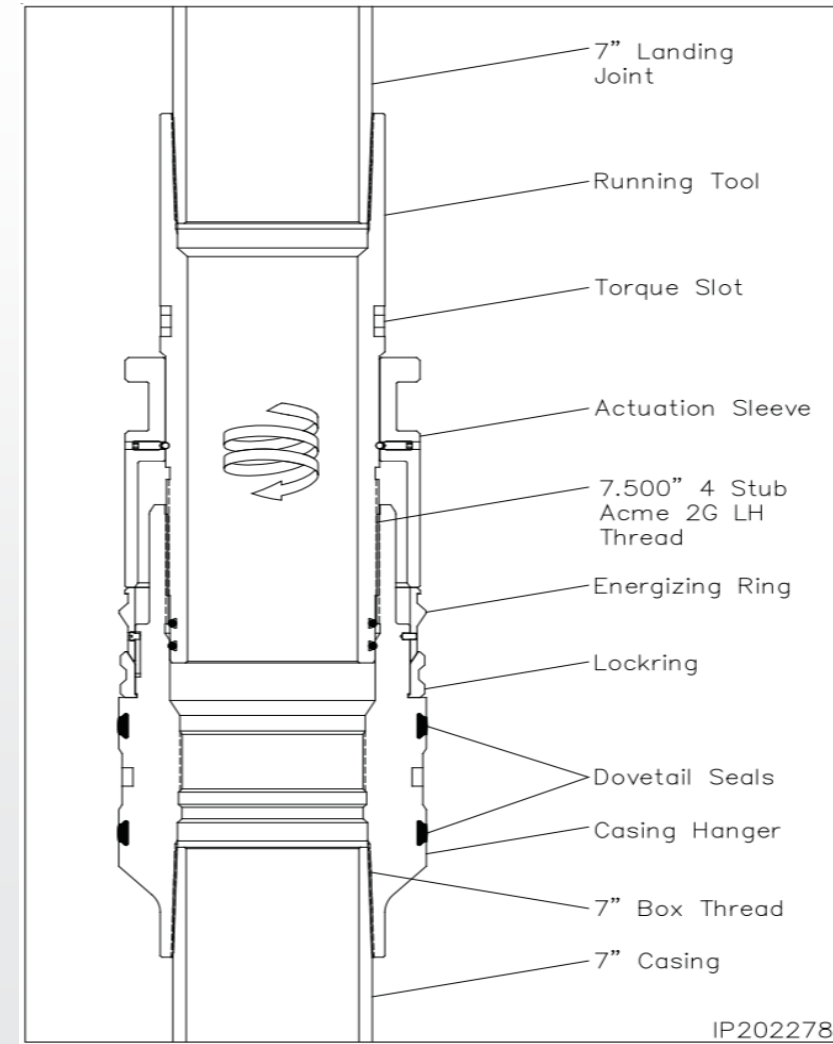
Conventional Cementing Equipment-Fluted Mandrel

- 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

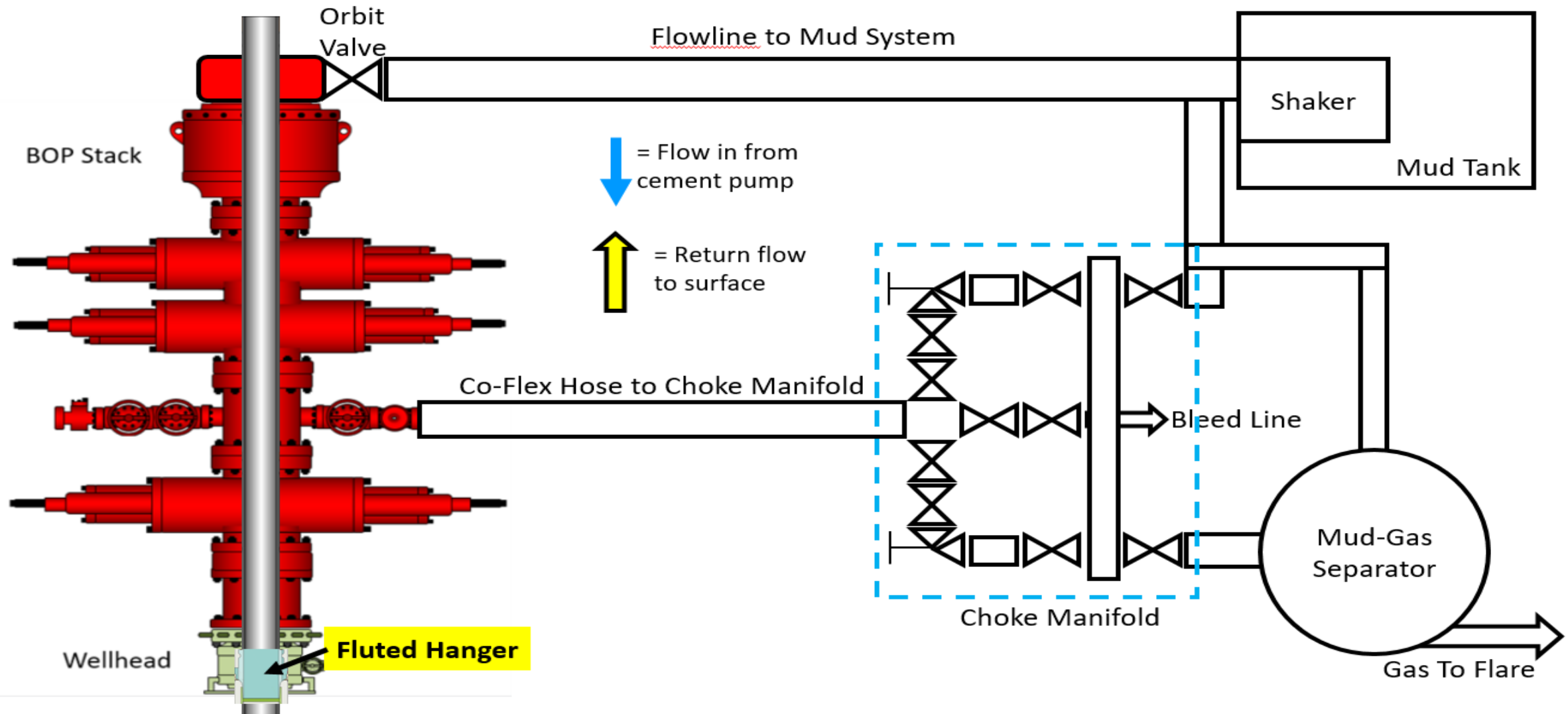


Offline Cementing Equipment-Solid Body Mandrel Hanger

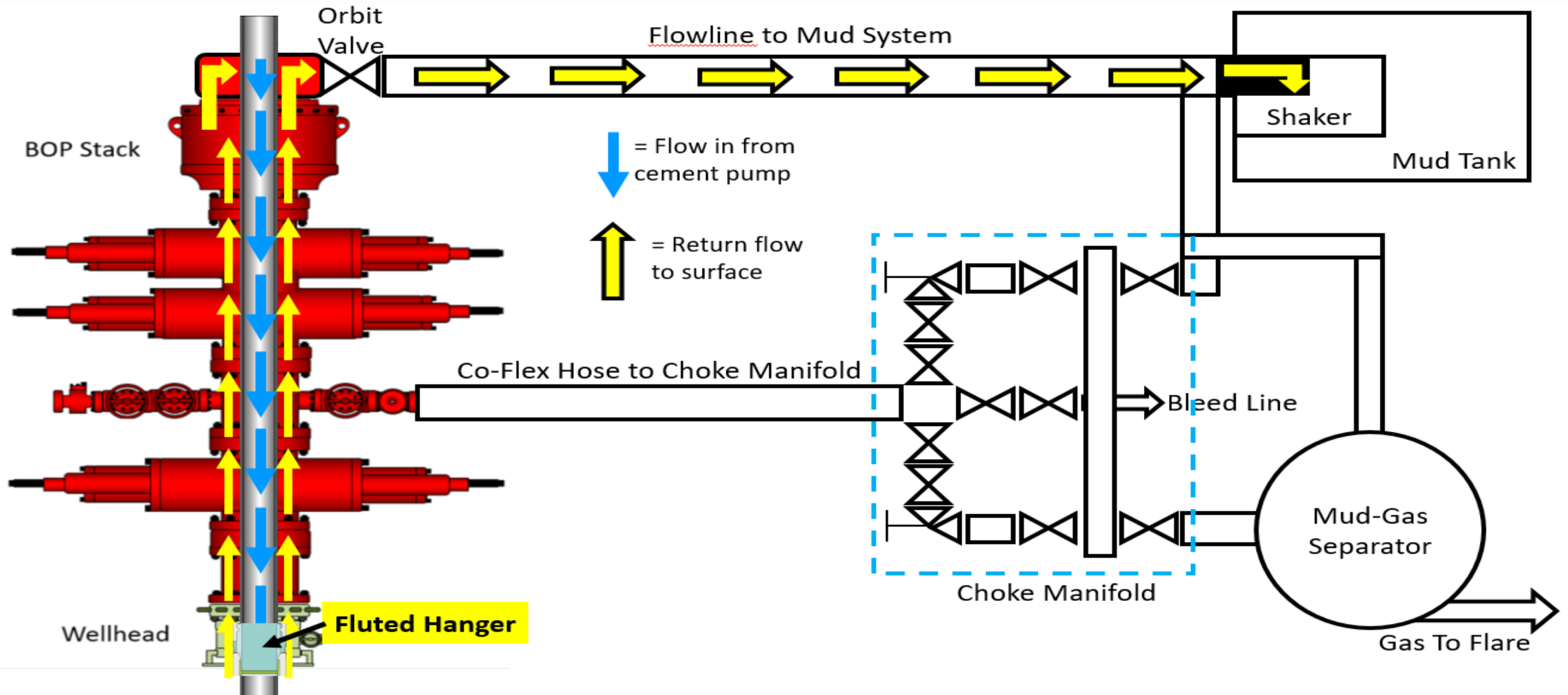
- Solid Body Mandrel Hanger allows for casing to be landed and pressure isolated in one step, **prior** to cementing
- Lockring is engaged to lock casing in place
- Casing is isolated and returns throughout cement job flow through the casing valves and through flowback iron independent of rig



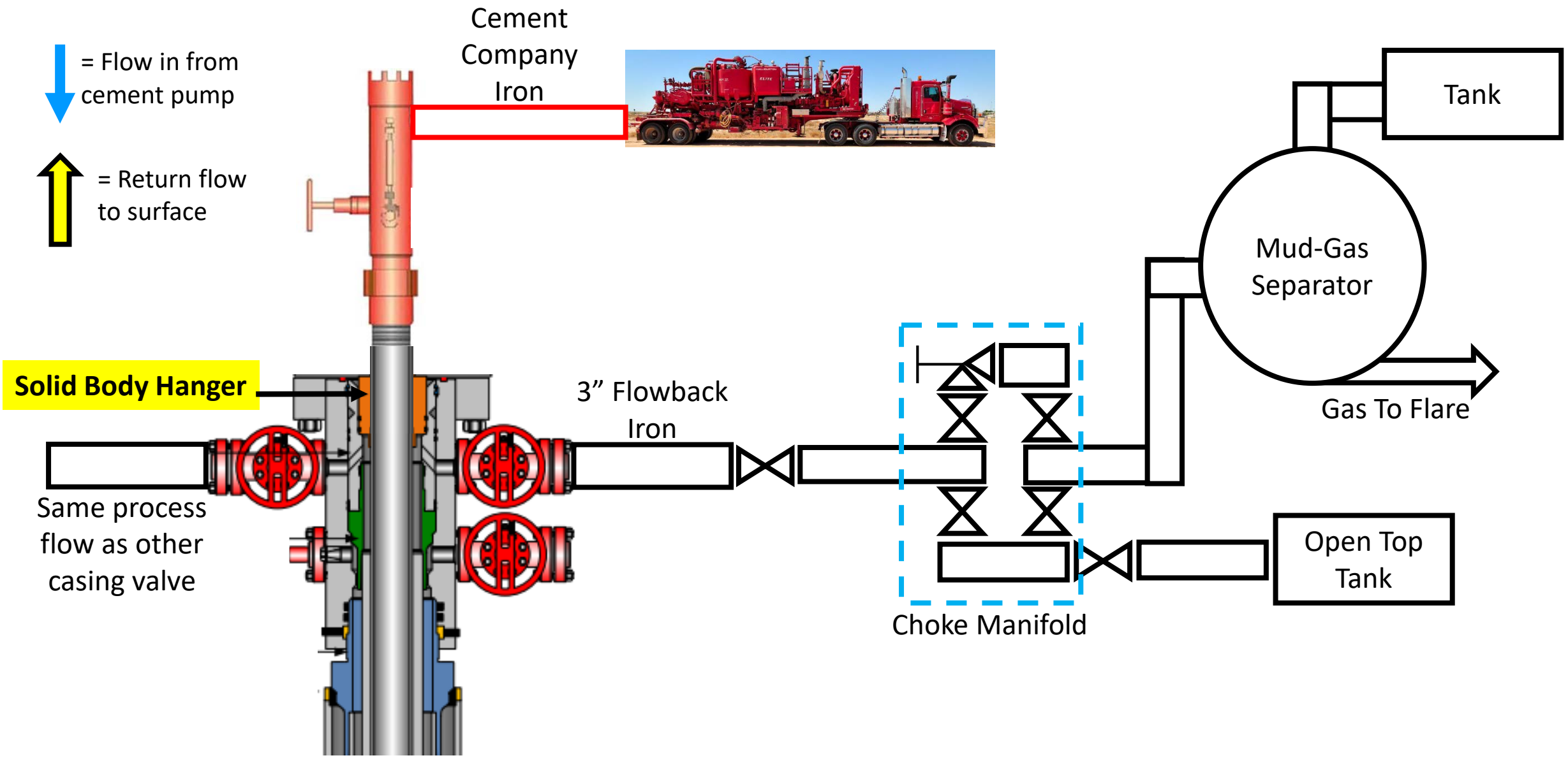
Conventional Cementing Flow Diagram



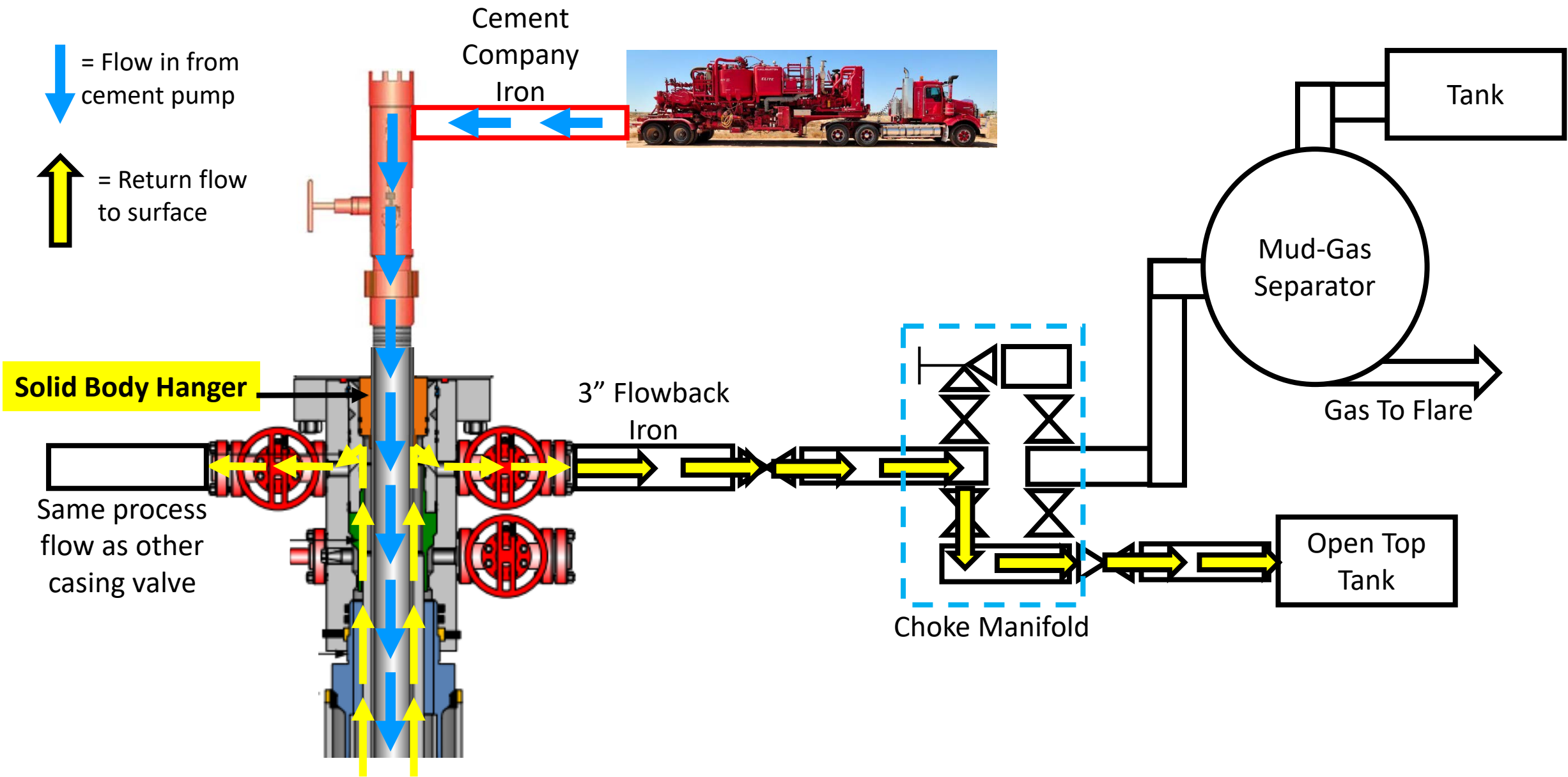
Conventional Cementing Flow Diagram



Offline Cementing -- Intermediate Casing

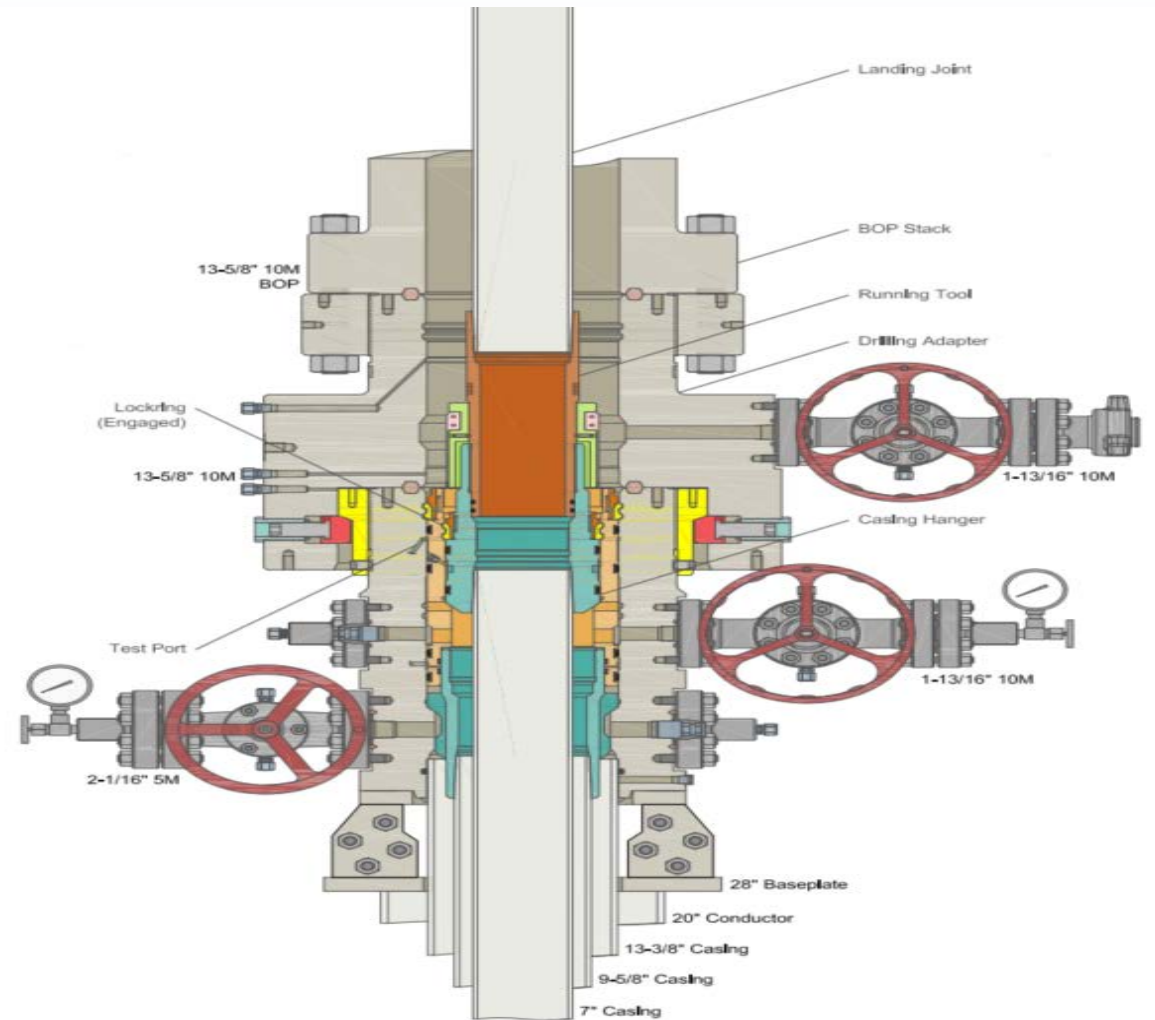


Offline Cementing -- Intermediate Casing



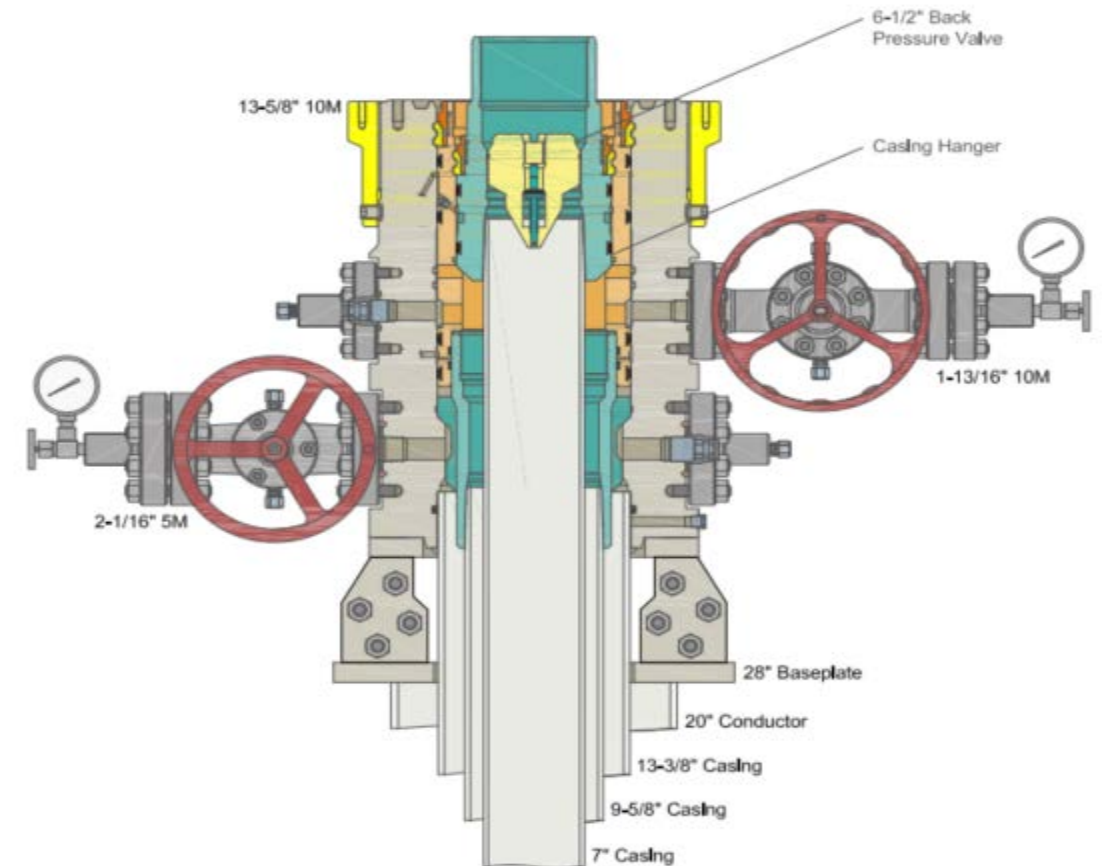
Offline Cementing Progression

- 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 WILL NOT set solid body packoff.**
 - 10K float collar-Internal Barrier
 - 10k float Shoe-Internal Barrier
 - **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**



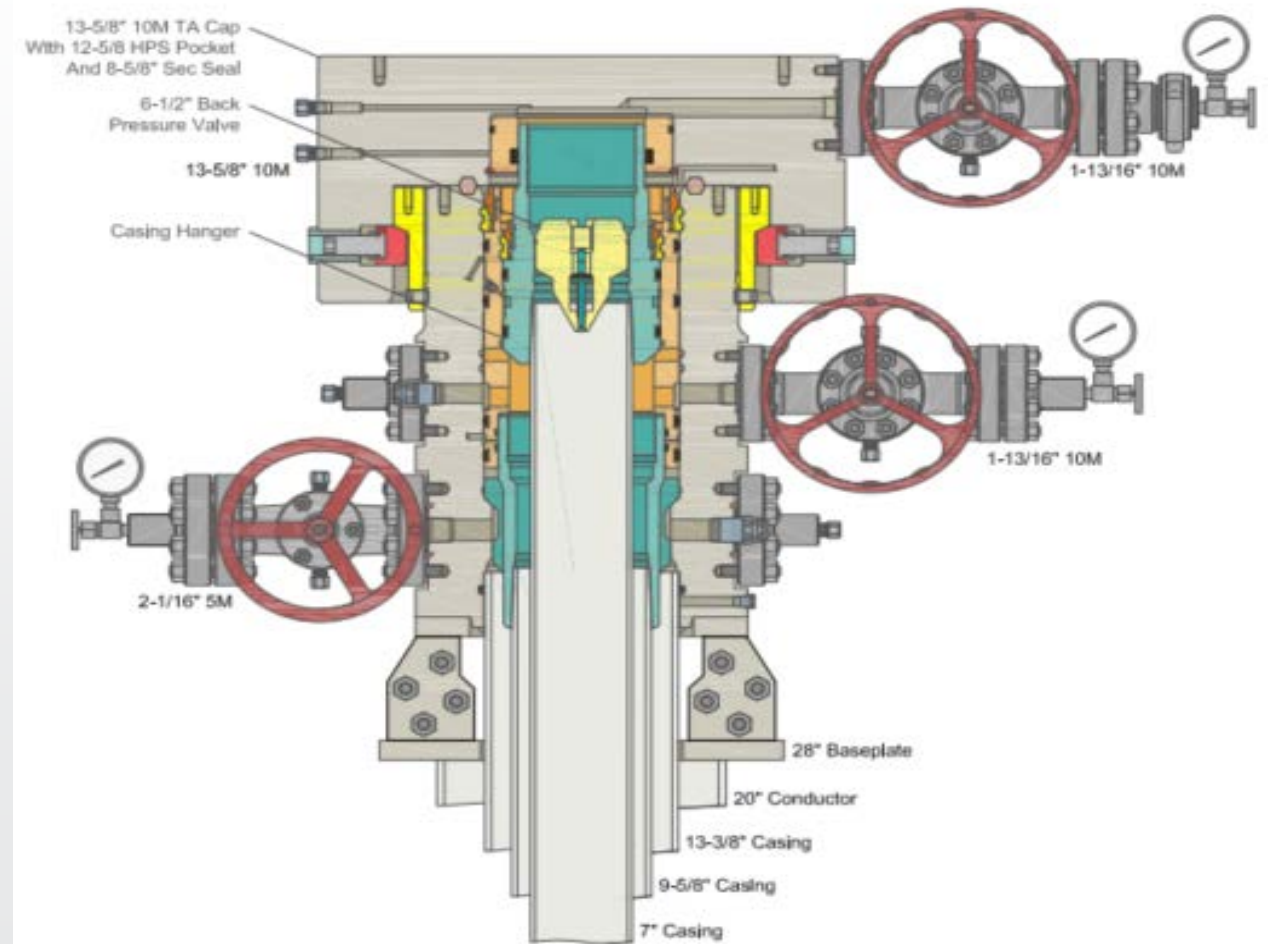
Offline Cementing Progression

- 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



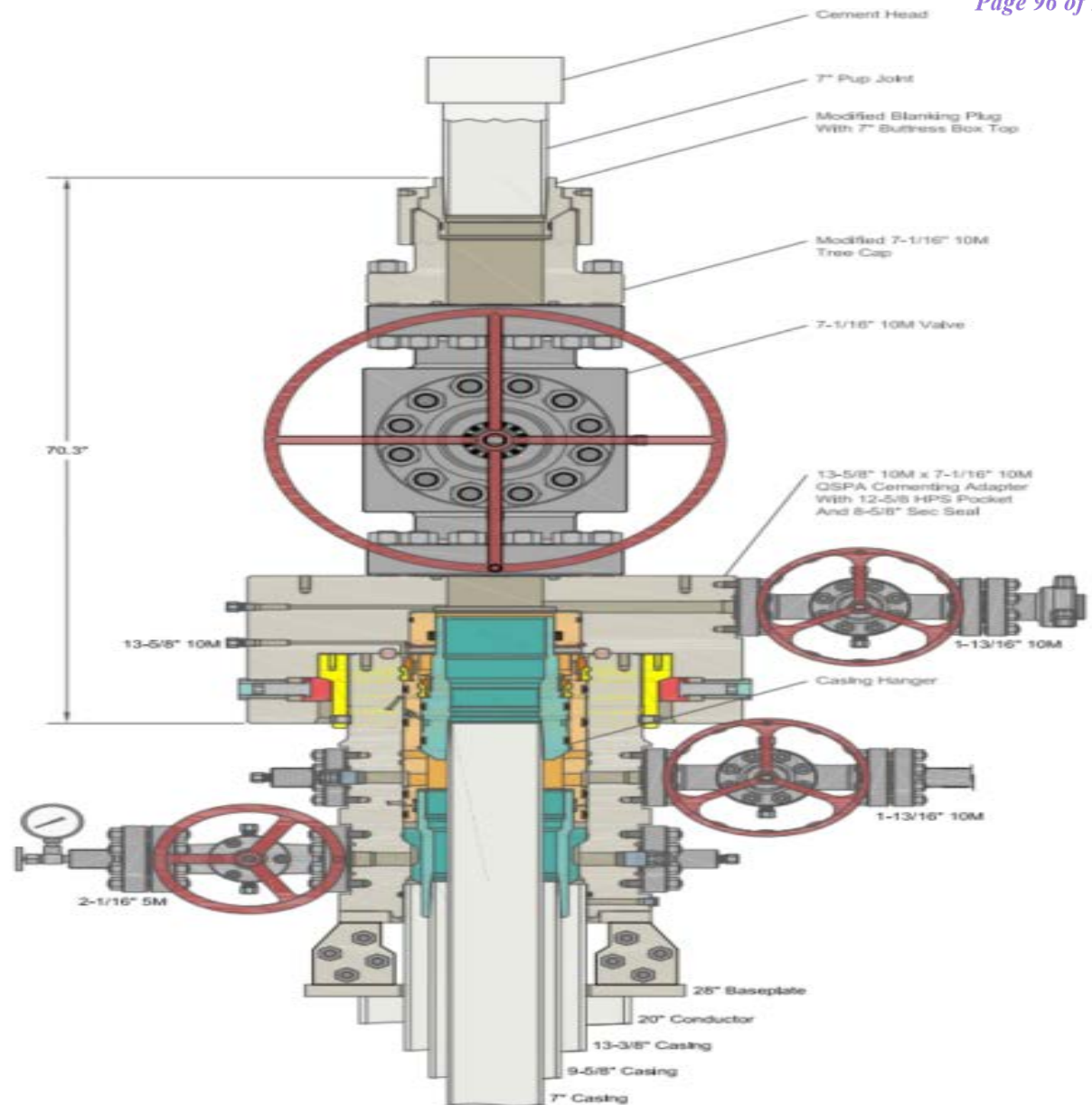
Offline Cementing Progression

- 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



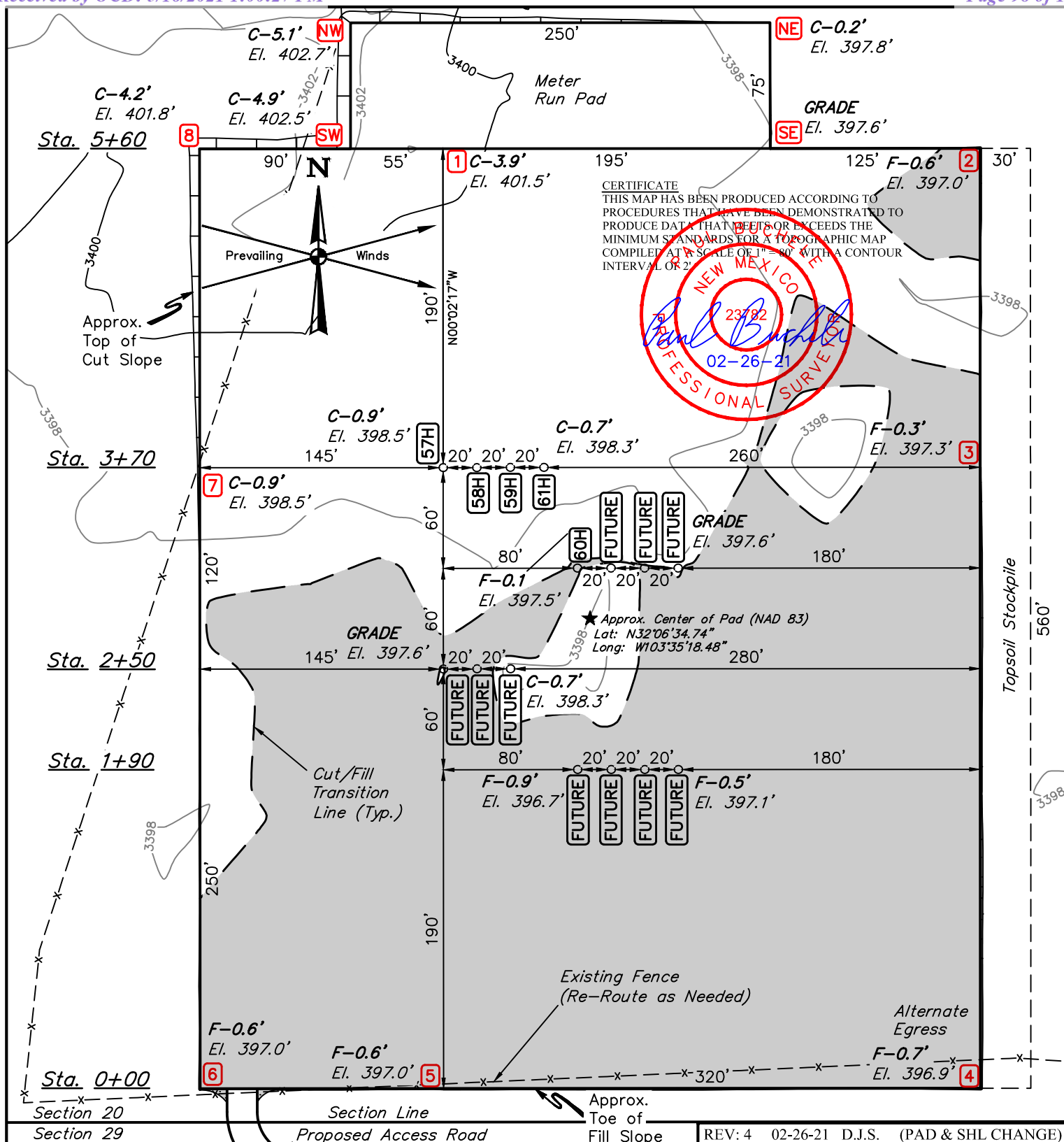
Offline Cementing Progression

- 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 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



FINISHED GRADE ELEVATION = 3397.6'

NOTES:

- Contours shown at 2' intervals.
- Cut/Fill slopes 1 1/2:1 (Typ.)
- Underground utilities shown on this sheet are for visualization purposes only, actual locations to be determined prior to construction.
- Basis of Bearings is a Transverse Mercator Projection with a Central Meridian of W103°53'00" (NAD 83)

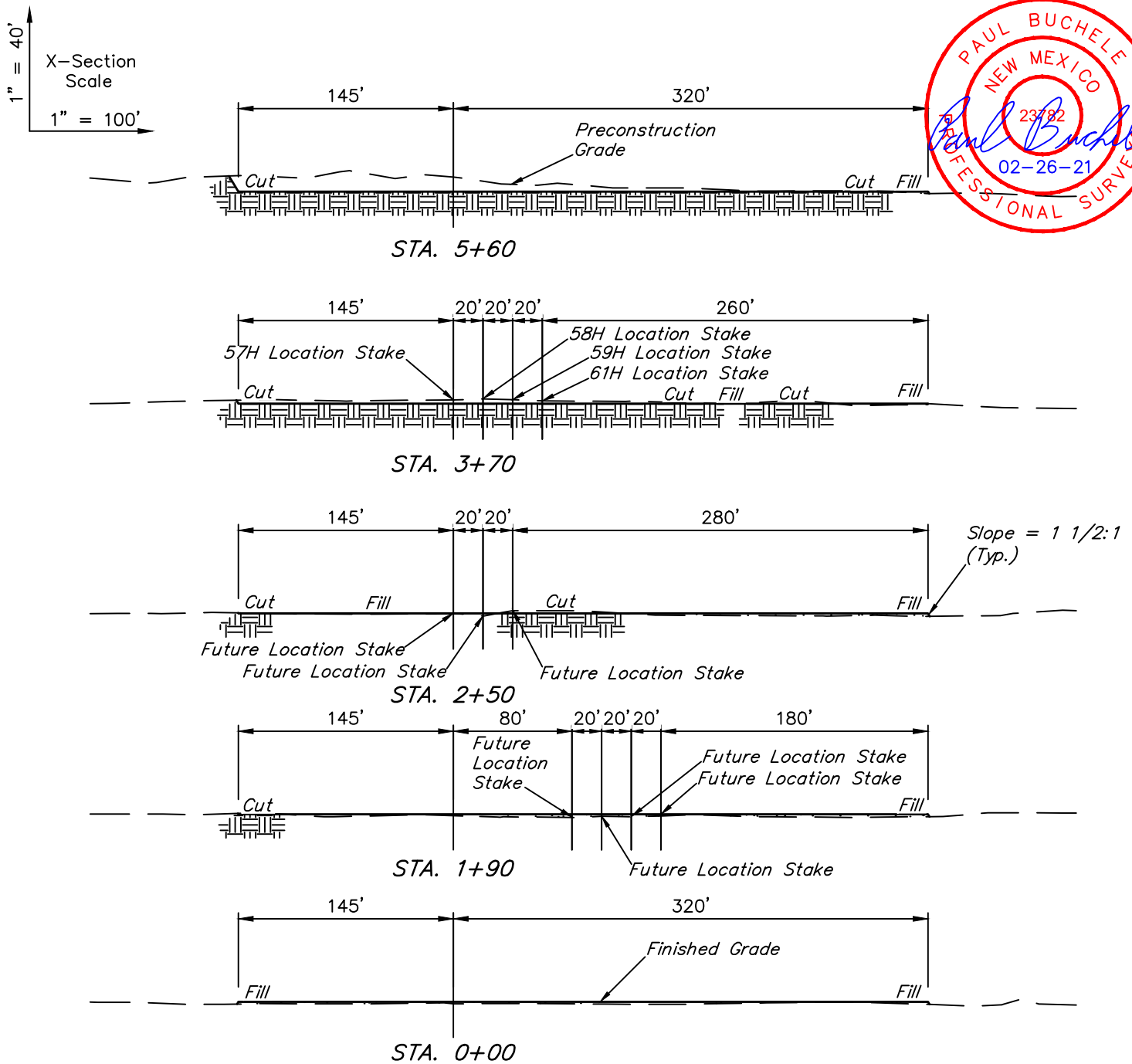


UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017

CIMAREX ENERGY CO.

VACA DRAW 20-17 FEDERAL E2E2 PAD 1
300' FSL 833' FEL (APPROX. CENTER OF PAD)
SE 1/4 SE 1/4, SECTION 20, T25S, R33E, N.M.P.M.
LEA COUNTY, NEW MEXICO

SURVEYED BY	M.D., R.C.	02-23-21	SCALE
DRAWN BY	D.J.S.	08-20-18	1" = 80'
LOCATION LAYOUT			EXHIBIT J



APPROXIMATE EARTHWORK QUANTITIES	
(4") TOPSOIL STRIPPING	3,490 Cu. Yds.
REMAINING LOCATION	4,850 Cu. Yds.
TOTAL CUT	8,340 Cu. Yds.
FILL	4,850 Cu. Yds.
EXCESS MATERIAL	3,490 Cu. Yds.
TOPSOIL	3,490 Cu. Yds.
EXCESS UNBALANCE (After Interim Rehabilitation)	0 Cu. Yds.

APPROXIMATE SURFACE DISTURBANCE AREAS		
	DISTANCE	ACRES
WELL SITE DISTURBANCE	NA	±6.868
30' WIDE ACCESS ROAD R-O-W DISTURBANCE	±589.61'	±0.406
TOTAL SURFACE USE AREA		±7.274

REV: 3 02-26-21 D.J.S. (PAD & SHL CHANGE)

NOTES:

- Fill quantity includes 5% for compaction.
- Cut/Fill slopes 1 1/2:1 (Typ.)

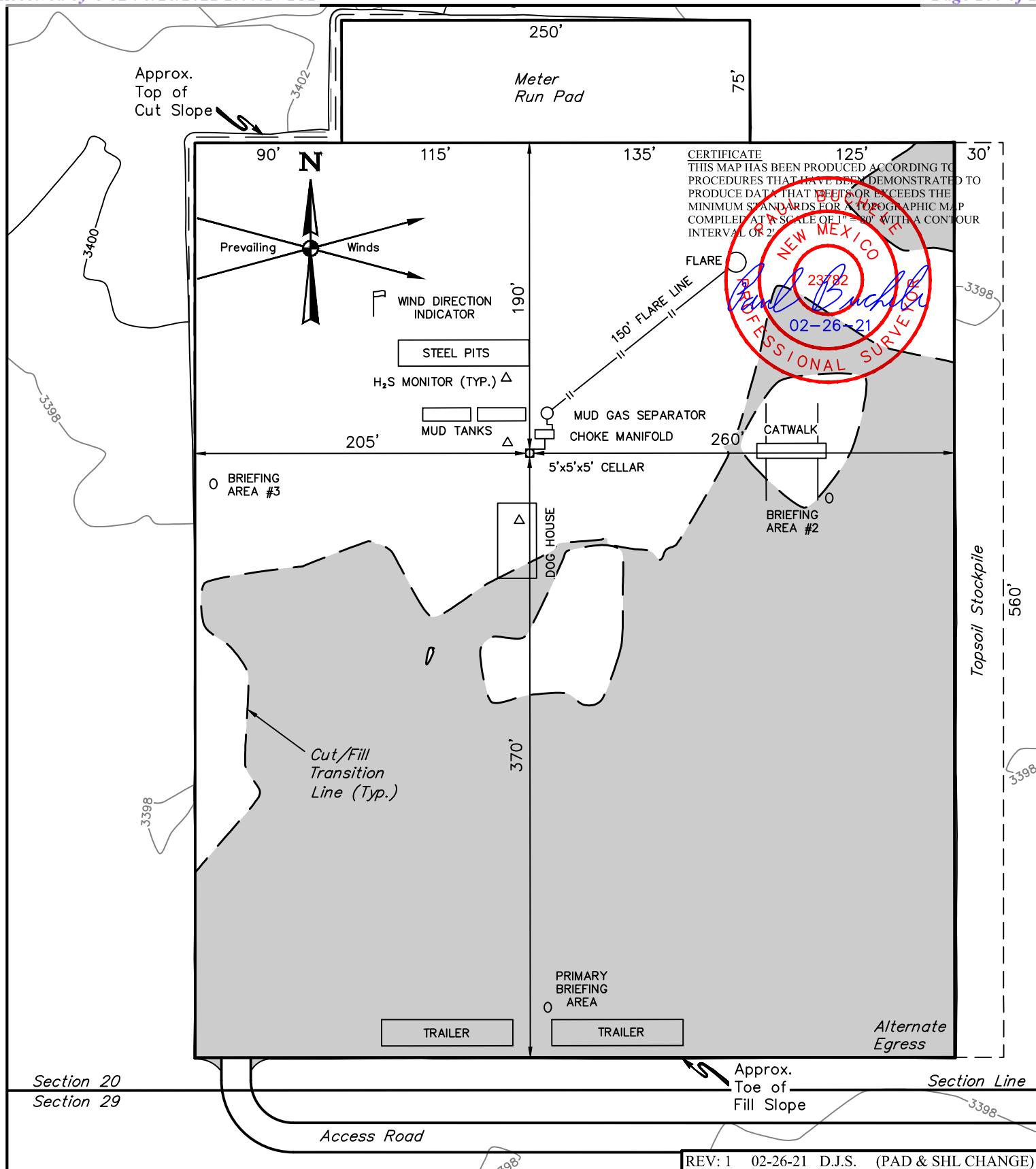
CIMAREX ENERGY CO.

VACA DRAW 20-17 FEDERAL E2E2 PAD 1
300' FSL 833' FEL (APPROX. CENTER OF PAD)
SE 1/4 SE 1/4, SECTION 20, T25S, R33E, N.M.P.M.
LEA COUNTY, NEW MEXICO

SURVEYED BY	M.D., R.C.	02-23-21	SCALE
DRAWN BY	D.J.S.	08-20-18	AS SHOWN
TYPICAL CROSS SECTIONS			EXHIBIT J



UELS, LLC
 Corporate Office * 85 South 200 East
 Vernal, UT 84078 * (435) 789-1017

**CIMAREX ENERGY CO.**

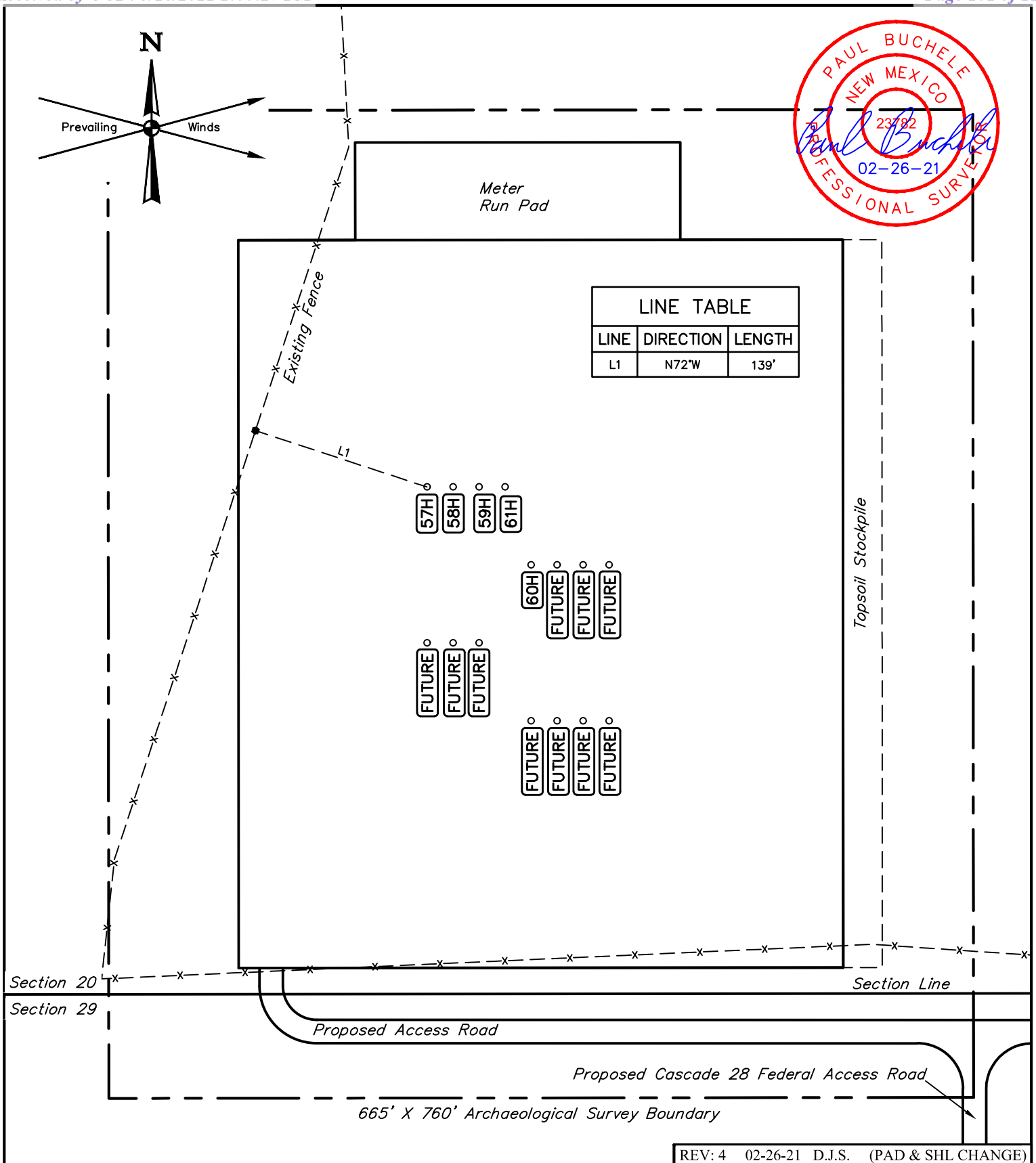
VACA DRAW 20-17 FEDERAL 61H
390' FSL 860' FEL

SE 1/4 SE 1/4, SECTION 20, T25S, R33E, N.M.P.M.
LEA COUNTY, NEW MEXICO

SURVEYED BY	M.D., R.C.	02-23-21	SCALE
DRAWN BY	T.A.	08-08-19	1" = 80'
TYPICAL RIG LAYOUT			EXHIBIT K



UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017



REV: 4 02-26-21 D.J.S. (PAD & SHL CHANGE)

NOTES:

- Basis of Bearings is a Transverse Mercator Projection with a Central Meridian of W103°53'00" (NAD 83)

CIMAREX ENERGY CO.

VACA DRAW 20-17 FEDERAL E2E2 PAD 1
300' FSL 833' FEL (APPROX. CENTER OF PAD)
SE 1/4 SE 1/4, SECTION 20, T25S, R33E, N.M.P.M.
LEA COUNTY, NEW MEXICO

SURVEYED BY	M.D., R.C.	02-23-21	SCALE
DRAWN BY	D.J.S.	08-20-18	1" = 100'
ARCHAEOLOGICAL SURVEY BOUNDARY			EXHIBIT L



UELS, LLC
 Corporate Office * 85 South 200 East
 Vernal, UT 84078 * (435) 789-1017

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

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

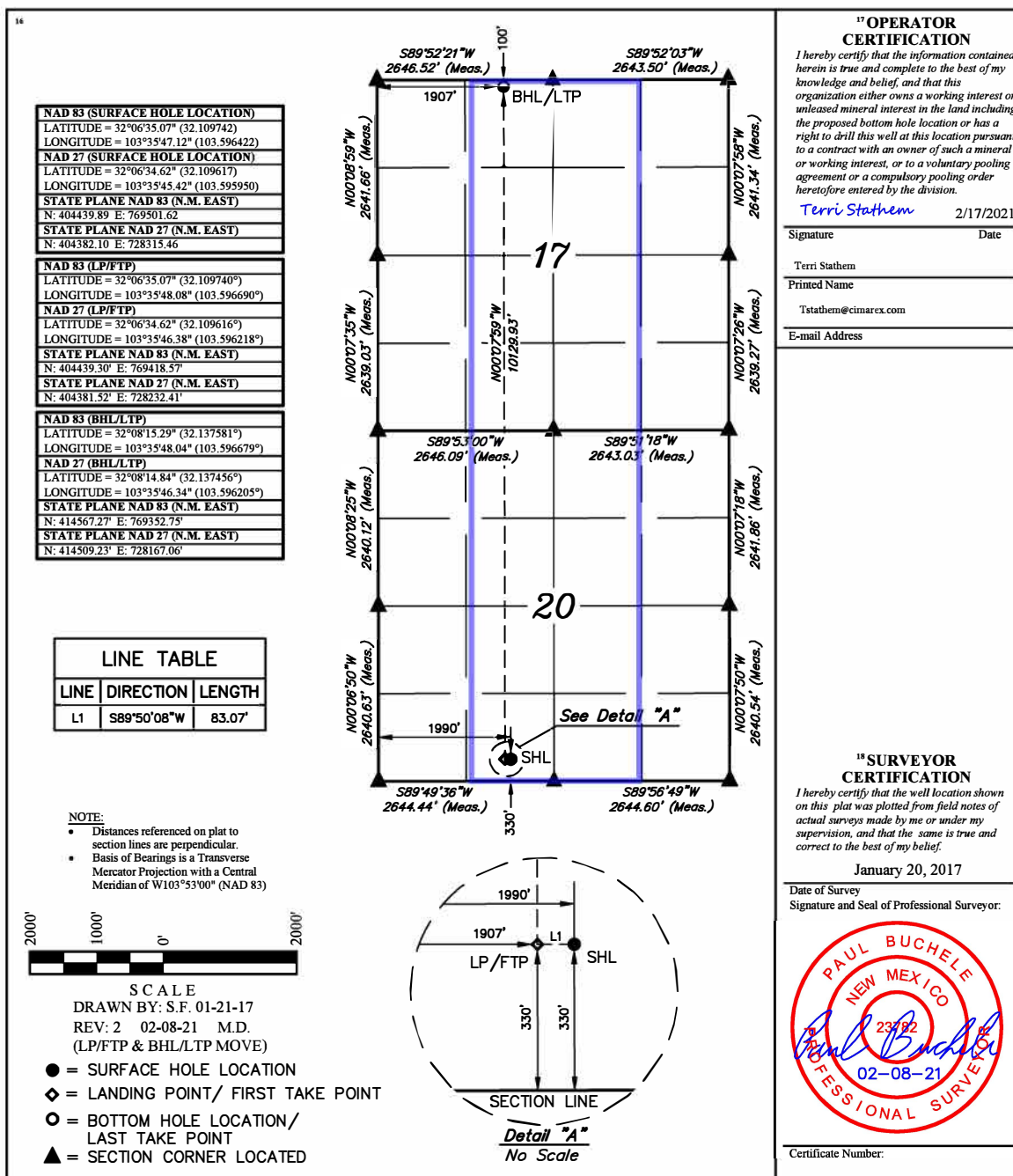
30-025-44360	¹ API Number	97903	² Code	WC-025 G-08 S253235G, LOWER BONE SPRING	³ Section
319775	⁴ Property Code	VACA DRAW 20-17 FEDERAL	⁵ Property Name	9H	⁶ Well Number
215099	⁷ GRID No.	CIMAREX ENERGY CO.	⁸ Operator Name	3417.2'	⁹ Elevation

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	20	25S	33E		330	SOUTH	1990	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
C	17	25S	33E		100	NORTH	1907	WEST	LEA
640	¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.					

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.



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WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-44356	² Pool Code 97903	³ Pool Name WC-025 G-08 S253235G; LOWER BONE SPRING
⁴ Property Code 319775	⁵ Property Name VACA DRAW 20-17 FEDERAL	⁶ Well Number 10H
⁷ OGRID No. 215099	⁸ Operator Name CIMAREX ENERGY CO.	⁹ Elevation 3417.1'

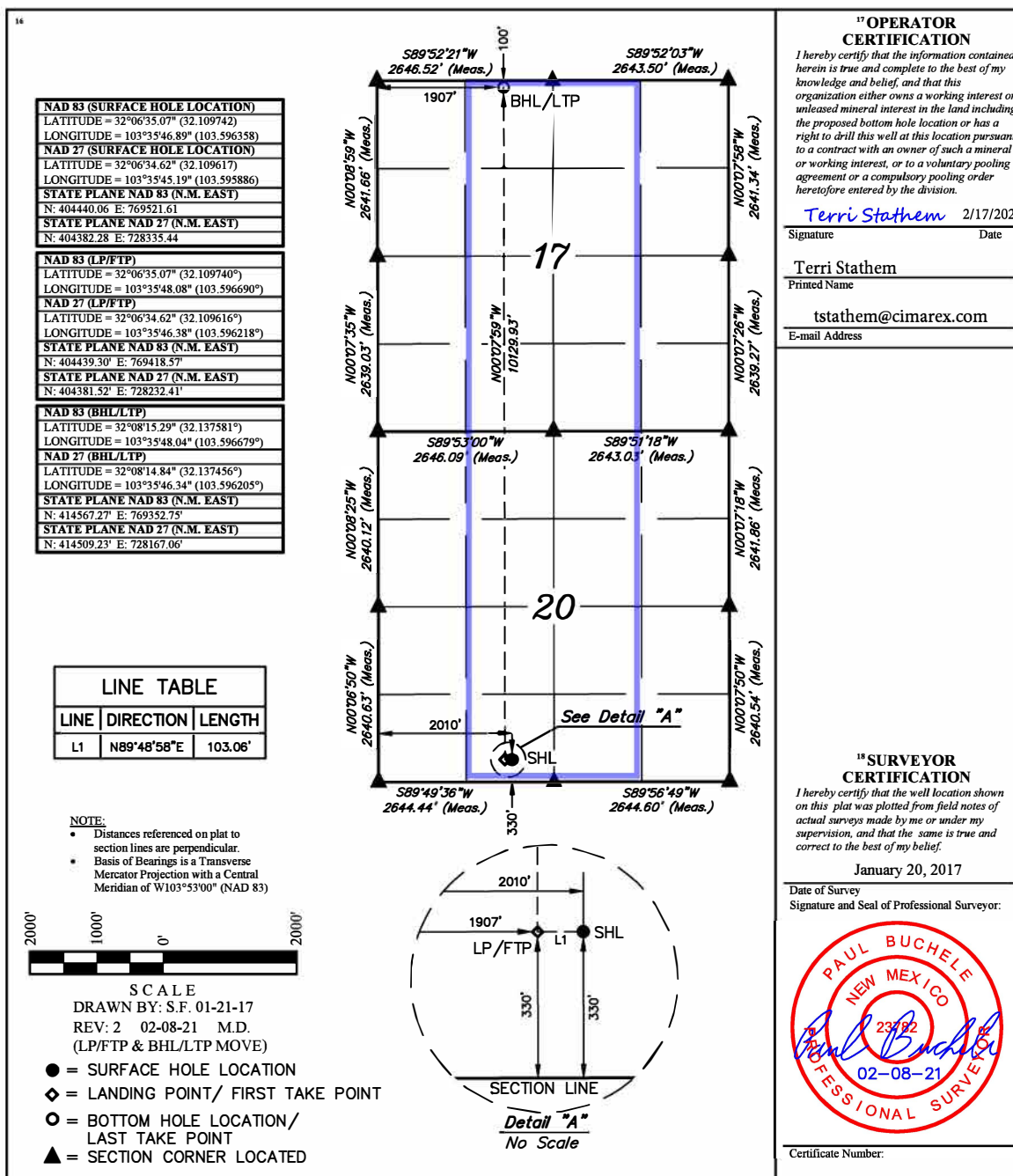
¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	20	25S	33E		330	SOUTH	2010	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
C	17	25S	33E		100	NORTH	1907	WEST	LEA
¹² Dedicated Acres 640	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.						

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.



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☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-44357	² Pool Code 97903	³ Pool Name WC-025 G-08 S253235G; LOWER BONE SPRING
⁴ Property Code 319775	⁵ Property Name VACA DRAW 20-17 FEDERAL	⁶ Well Number 11H
⁷ OGRID No. 215099	⁸ Operator Name CIMAREX ENERGY CO.	⁹ Elevation 3417.0'

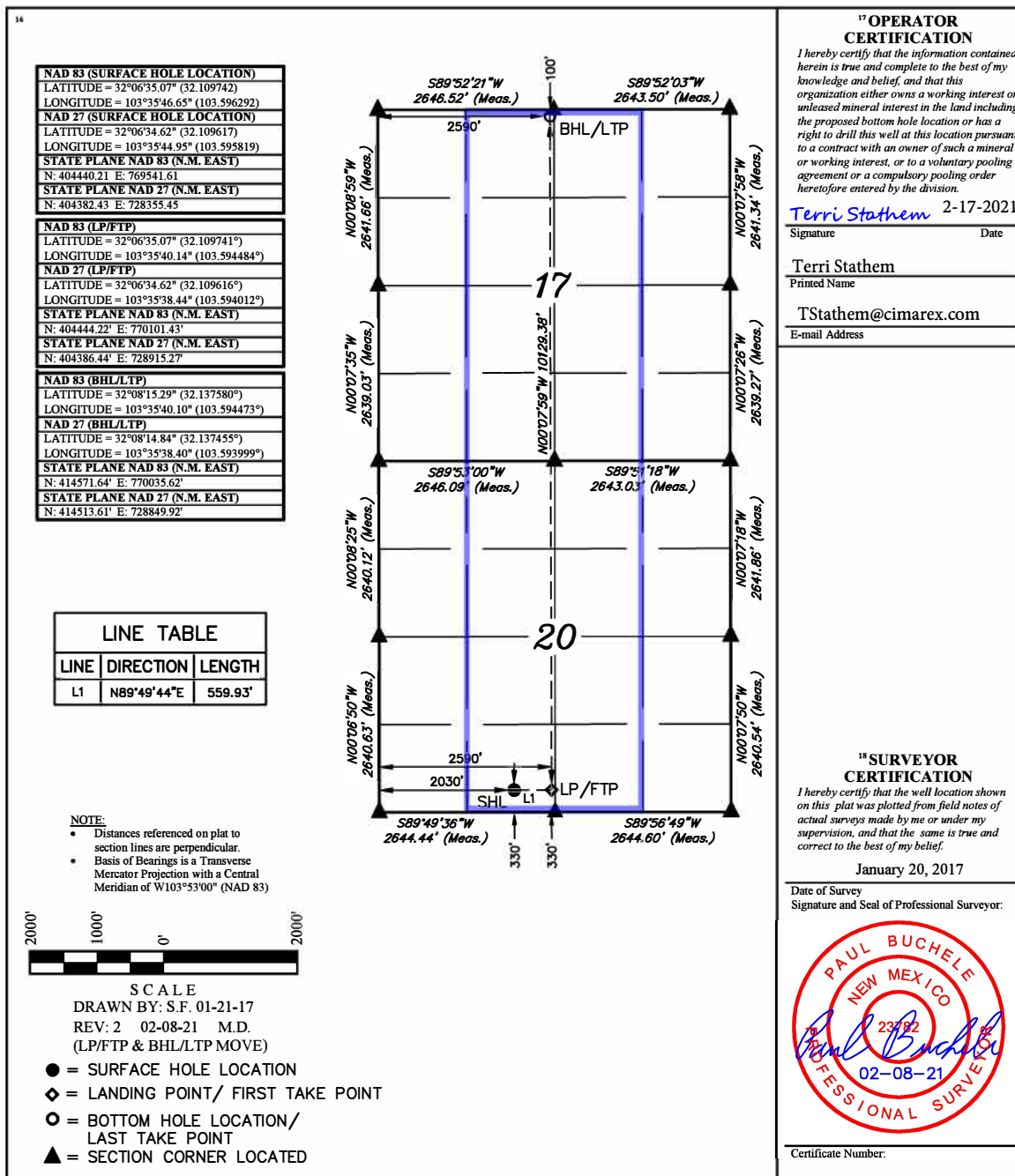
¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	20	25S	33E		330	SOUTH	2030	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
C	17	25S	33E		100	NORTH	2590	WEST	LEA
¹² Dedicated Acres 640	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.						

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.



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WELL LOCATION AND ACREAGE DEDICATION PLAT

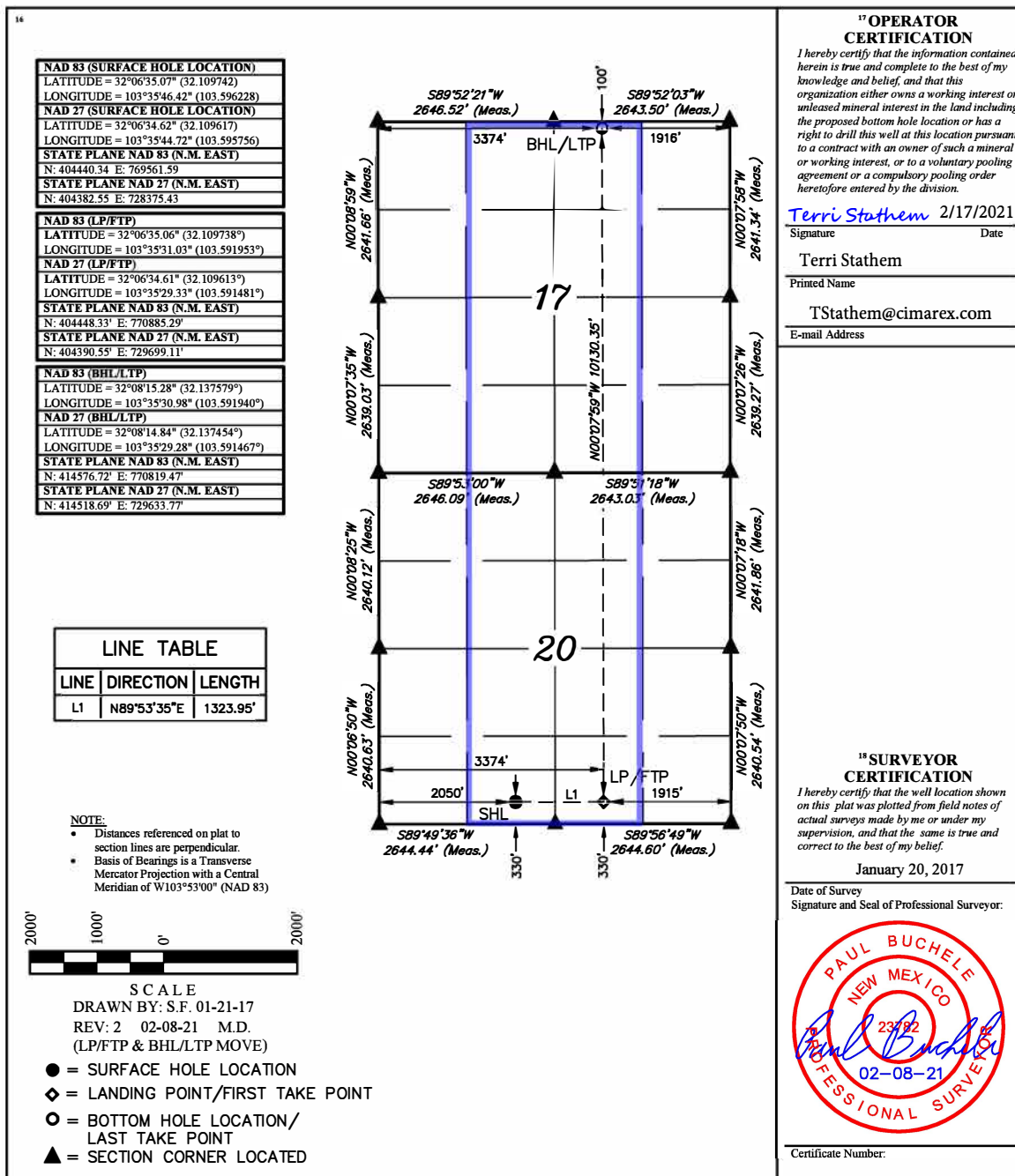
¹ API Number 30-025-44358	² Pool Code 97903	³ Well Name WC-025 G-08 S2532356, LWR BONE SPRING
⁴ Property Code 319775	⁵ Property Name VACA DRAW 20-17 FEDERAL	⁶ Well Number 12H
⁷ OGRID No. 215099	⁸ Operator Name CIMAREX ENERGY CO.	⁹ Elevation 3417.0'

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	20	25S	33E		330	SOUTH	2050	WEST	LEA

¹⁰ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	17	25S	33E		100	NORTH	1916	EAST	LEA
¹² Dedicated Acres 640	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.						

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.



From: [Fatima Vasquez](#)
To: [McClure, Dean, EMNRD](#)
Subject: RE: Vaca Draw Commingle
Date: Wednesday, August 18, 2021 1:14:24 PM

Mr. McClure,

Good afternoon! No worries at all! Thank you for proceeding with the application process. If you need anything else, please let me know.

Also, yes, as soon as we have a formal sundry approval for the 61H, we will submit on the OCD Online portal. The BLM is still trying to work out that kink.

Have an amazing & blessed day! ☺

Fatima Vasquez
Regulatory Analyst



From: McClure, Dean, EMNRD <Dean.McClure@state.nm.us>
Sent: Wednesday, August 18, 2021 12:12 PM
To: Fatima Vasquez <fvasquez@cimarex.com>
Subject: [External] RE: Vaca Draw Commingle

Ms. Vasquez,

I apologize; the email below got buried in my email.

I reviewed one of the wells which was listed as producing from the upper Bone spring in the application while E-permitting had it listed as producing from the lower Bone Spring. It does appear that it was Paul who set the new pool and I agree with his assessment that it should be in the lower Bone Spring.

The econ justification sheet addresses my concerns there.

Regarding the 61H, it is not ideal, but I will proceed processing the application with what you have submitted thus far. Please be sure to submit the change to the OCD as soon as you get formal approval from the BLM.

It has been a while since the initial review of this application, but I think that addresses my original concerns. I'll take a look at it again this afternoon and get back to you if I see anything else; otherwise expect that I will be recommending that a permit be issued for this commingling project later this week.

Dean McClure
Petroleum Engineer, Oil Conservation Division
New Mexico Energy, Minerals and Natural Resources Department
(505) 469-8211

From: Fatima Vasquez <fvasquez@cimarex.com>
Sent: Tuesday, August 17, 2021 3:01 PM
To: McClure, Dean, EMNRD <Dean.McClure@state.nm.us>
Subject: RE: Vaca Draw Commingle

Mr. McClure,

Good afternoon! Will you please provide a status update on the Vaca Draw commingling permit? If you have a minute tomorrow, would you mind if I called or you called me to discuss this and make sure everything is correct.

Thank you for your help! ☺

Fatima Vasquez
Regulatory Analyst



From: Fatima Vasquez
Sent: Friday, July 23, 2021 10:21 AM
To: McClure, Dean, EMNRD <Dean.McClure@state.nm.us>
Subject: RE: Vaca Draw Commingle

Mr. McClure,

Good morning! The correct pool for the Vaca Draw 9H, 10H, 11H & 12H is 97903 since that is what is on the OCD website. I am assuming Paul Kautz or whoever approved the sundry online probably changed the pool code since we submitted them as 97994. Attached are all the C102s with the updated pool code as well as the Land letter, Administrative Checklist, C107B, and our Correspondence Letter that all reflect the change. Also, the Economic Justification is attached per your request.

I am not sure how to handle Vaca Draw 61H. We submitted a SHL, BHL & formation change sundry. The BLM has a glitch and won't let them approve it through AFMSS. They gave us verbal approval which is documented in an email and is attached as well. We will submit on the OCD website once the BLM resolves the issue.

Please advise if we are good to go or if there is any additional information you need from me. Thank you!

Have an amazing & blessed weekend!

Fatima Vasquez
Regulatory Analyst



From: McClure, Dean, EMNRD <Dean.McClure@state.nm.us>
Sent: Monday, June 28, 2021 6:10 PM
To: Fatima Vasquez <fvasquez@cimarex.com>
Subject: [External] RE: Vaca Draw Commingle

Ms. Vasquez,

Yeah, I think Paul was saying they are getting rain down in Hobbs as well. We have gotten some rain up here in Wyoming, but not as much as would be nice.

Regarding the surface commingling application PC-1393 which involves the Vaca Draw West CTB operated by Cimarex Energy Company (215099), I am needing a few things.

Please submit known or estimated values for the BTU of the gas and gravity of the oil for the upper bone spring, lower bone spring, and upper wolfcamp pools in the area of these wells.

Please confirm the pool for the following wells; the application says 97994, but epermitting has them listed as 97903:

30-025-44360	Vaca Draw 20 17 Federal #9H	B C F G J K N O B C F G J K N O	17-25S-33E 20-25S-33E	97903
30-025-44356	Vaca Draw 20 17 Federal #10H	B C F G J K N O B C F G J K N O	17-25S-33E 20-25S-33E	97903
30-025-44357	Vaca Draw 20 17 Federal #11H	B C F G J K N O B C F G J K N O	17-25S-33E 20-25S-33E	97903
30-025-44358	Vaca Draw 20 17 Federal #12H	B C F G J K N O B C F G J K N O	17-25S-33E 20-25S-33E	97903

Please confirm the pool and spacing unit for the following well; the APD has W/2 E/2 in 97994, the application has E/2 98180, and epermitting has it as W/2 E/2 97994:

30-025-47961	Vaca Draw 20 17 Federal #61H	E/2 E/2	17-25S-33E 20-25S-33E	98180
---------------------	-------------------------------------	--------------------------	--	--------------

Dean McClure
Petroleum Engineer, Oil Conservation Division
New Mexico Energy, Minerals and Natural Resources Department
(505) 469-8211

From: Fatima Vasquez <fvasquez@cimarex.com>
Sent: Monday, June 28, 2021 10:38 AM
To: McClure, Dean, EMNRD <Dean.McClure@state.nm.us>
Subject: [EXT] RE: Vaca Draw Commingle

Mr. McClure,

Good morning & Happy Monday! I hope you are staying dry – we are experiencing some crazy flooding here in West Texas.

No worries, I know you are extremely busy. Thank you for taking your time to download the application and review it.

Fatima Vasquez
Regulatory Analyst



From: McClure, Dean, EMNRD <Dean.McClure@state.nm.us>
Sent: Monday, June 28, 2021 11:14 AM
To: Fatima Vasquez <fvasquez@cimarex.com>
Subject: [External] RE: Vaca Draw Commingle

WARNING: This email originated from outside of Cimarex Energy. Do not click links or open attachments unless you recognize the sender, are expecting the content and know it is safe.

Ms. Vasquez,

I apologize for the slow response; I have downloaded the referenced application and am reviewing it now. I'll be in touch if I have any questions.

Dean McClure
Petroleum Engineer, Oil Conservation Division
New Mexico Energy, Minerals and Natural Resources Department
(505) 469-8211

From: Fatima Vasquez <fvasquez@cimarex.com>
Sent: Monday, June 21, 2021 1:30 PM
To: McClure, Dean, EMNRD <Dean.McClure@state.nm.us>
Subject: [EXT] Vaca Draw Commingle

Mr. McClure,

Good afternoon! May I please get a status update on the C-107B Vaca Draw commingle that was submitted 5/18/2021? I hate to bug but our facilities guys are asking.

Thank you for your help! ☺

Fatima Vasquez

Regulatory Analyst
600 N. Marienfeld St. Suite 600
Midland, TX 79701
(432) 620-1933
fvasquez@cimarex.com



From: [Engineer, OCD, EMNRD](#)
To: [Fatima Vasquez](#)
Cc: [McClure, Dean, EMNRD](#); [Simmons, Kurt, EMNRD](#); [Bratcher, Mike, EMNRD](#); [Kautz, Paul, EMNRD](#); [Hawkins, James, EMNRD](#); [Powell, Brandon, EMNRD](#); [lisa@rwbyram.com](#); [Glover, James](#); [Paradis, Kyle O](#); [Walls, Christopher](#)
Subject: Approved Administrative Order PC-1393
Date: Friday, August 27, 2021 10:24:13 AM
Attachments: [PC1393 Order.pdf](#)

NMOCD has issued Administrative Order PC-1393 which authorizes Cimarex Energy Company (215099) to surface commingle or off-lease measure, as applicable, the following wells:

Well API	Well Name	UL or Q/Q	S-T-R	Pool Code
30-025-44150	Vaca Draw 20 17 Federal #5H	W/2 W/2	17-25S-33E	97994
		W/2 W/2	20-25S-33E	
30-025-44151	Vaca Draw 20 17 Federal #6H	W/2 W/2	17-25S-33E	97994
		W/2 W/2	20-25S-33E	
30-025-44360	Vaca Draw 20 17 Federal #9H	B C F G J K N O	17-25S-33E	97903
		B C F G J K N O	20-25S-33E	
30-025-44356	Vaca Draw 20 17 Federal #10H	B C F G J K N O	17-25S-33E	97903
		B C F G J K N O	20-25S-33E	
30-025-44357	Vaca Draw 20 17 Federal #11H	B C F G J K N O	17-25S-33E	97903
		B C F G J K N O	20-25S-33E	
30-025-44358	Vaca Draw 20 17 Federal #12H	B C F G J K N O	17-25S-33E	97903
		B C F G J K N O	20-25S-33E	
30-025-46113	Vaca Draw 20 17 Federal #29H	W/2	17-25S-33E	97994
		W/2	20-25S-33E	
30-025-46114	Vaca Draw 20 17 Federal #30H	W/2	17-25S-33E	97994
		W/2	20-25S-33E	
30-025-46115	Vaca Draw 20 17 Federal #31H	W/2	17-25S-33E	97994
		W/2	20-25S-33E	
30-025-46116	Vaca Draw 20 17 Federal #43H	E/2	17-25S-33E	97994
		E/2	20-25S-33E	
30-025-46117	Vaca Draw 20 17 Federal #44H	E/2	17-25S-33E	97994
		E/2	20-25S-33E	
30-025-46118	Vaca Draw 20 17 Federal #45H	E/2	17-25S-33E	97994
		E/2	20-25S-33E	
30-025-46119	Vaca Draw 20 17 Federal #57H	E/2	17-25S-33E	98180
		E/2	20-25S-33E	
30-025-46120	Vaca Draw 20 17 Federal #58H	E/2	17-25S-33E	98180
		E/2	20-25S-33E	
30-025-46121	Vaca Draw 20 17 Federal #59H	E/2	17-25S-33E	98180
		E/2	20-25S-33E	
30-025-47961	Vaca Draw 20 17 Federal #61H	E/2	17-25S-33E	98180
		E/2	20-25S-33E	
30-025-46160	Vaca Draw 20 17 Federal #71H	E/2	17-25S-33E	97994
		E/2	20-25S-33E	
30-025-46161	Vaca Draw 20 17 Federal #72H	E/2	17-25S-33E	97994
		E/2	20-25S-33E	
30-025-46122	Vaca Draw 20 17 Federal #73H	E/2	17-25S-33E	97994
		E/2	20-25S-33E	

The administrative order is attached to this email and can also be found online at OCD Imaging.

Please review the content of the order to ensure you are familiar with the authorities granted and any

conditions of approval. If you have any questions regarding this matter, please contact me.

Dean McClure
Petroleum Engineer, Oil Conservation Division
New Mexico Energy, Minerals and Natural Resources Department
(505) 469-8211



CIMAREX ENERGY COMPANY
600 N. Marienfeld St., Suite 600
Midland, TX 79701

03/19/2021

Attn: Mr. Dean McClure
1220 S. St. Francis Dr.
Santa Fe, New Mexico 87505

Subject: Application for Pool Lease Commingling at Common Central Tank Battery
Vaca Draw 20-17 Federal
All in Sec. 17 & 20, T-25S, R-33E, Lea County, NM
WC-025 G-06 S253329D; Bone Spring, Oil (97994)
WC-025 G-09 S253309P; Upr Wolfcamp, Oil (98180)

Mr. McClure,

Pursuant to Division Rule 19.15.12.10, Cimarex Energy Co. respectfully requests administrative approval to Pool Lease Commingle at a Common Central Tank Battery.

Each well is metered individually. This action will prevent waste, promote conservation and protect correlative rights. The Vaca Draw 20-17 Federal West battery is located in Unit Letter M, Sec 20, T-25S, R-33E.

These wells are operated by Cimarex Energy Co. with identical ownership. There is one federal lease involved. We are submitting a sundry application to the BLM for federal approval.

Also Attached:

- NMOCD Administrative Application Checklist
- Summary Detail
- Lease plat shows boundaries, Federal Lease #'s, facility, wellhead and path of production
- Facility Diagram
- NMOCD form C-102 well plats for each well

For future addition of wells and pools to this commingling operation, in accordance with the Division Rule 19.15.12.10 C (4)(g) NMAC, Cimarex Energy Co. respectfully requests the option to include them within the defined parameters set forth in the order.

Thank you,

Fatima Vasquez

Fatima Vasquez
Regulatory Analyst
432-620-1933
fvasquez@cimarex.com

**STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION**

**APPLICATION FOR SURFACE COMMINGLING
SUBMITTED BY CIMAREX ENERGY COMPANY**

ORDER NO. PC-1393

ORDER

The Director of the New Mexico Oil Conservation Division (“OCD”), having considered the application and the recommendation of the OCD Engineering Bureau, issues the following Order.

FINDINGS OF FACT

1. Cimarex Energy Company (“Applicant”) submitted a complete application to surface commingle the oil and gas production from the pools, leases, and wells identified in Exhibit A (“Application”).
2. Applicant proposed a method to allocate the oil and gas production to the pools, leases, and wells to be commingled.
3. To the extent that ownership is identical, Applicant submitted a certification by a licensed attorney or qualified petroleum landman that the ownership in the pools, leases, and wells to be commingled is identical as defined in 19.15.12.7(B) NMAC.
4. To the extent that ownership is diverse, Applicant provided notice of the Application to all persons owning an interest in the oil and gas production to be commingled, including the owners of royalty and overriding royalty interests, regardless of whether they have a right or option to take their interests in kind, and those persons either submitted a written waiver or did not file an objection to the Application.
5. Applicant provided notice of the Application to the Bureau of Land Management (“BLM”) or New Mexico State Land Office (“NMSLO”), as applicable.
6. Applicant certified the commingling of oil and gas production from the pools, leases, and wells will not in reasonable probability reduce the value of the oil and gas production to less than if it had remained segregated.
7. Applicant in the notice for the Application stated that it sought authorization to add additional pools, leases, and wells and identified the parameters to make such additions.

CONCLUSIONS OF LAW

8. OCD has jurisdiction to issue this Order pursuant to the Oil and Gas Act, NMSA 1978, §§ 70-2-6, 70-2-11, 70-2-12, 70-2-16, and 70-2-17, 19.15.12 NMAC, and 19.15.23 NMAC.
9. Applicant satisfied the notice requirements for the Application in accordance with 19.15.12.10(A)(2), (C)(4)(c), and (C)(4)(e) NMAC, as applicable.

10. Applicant satisfied the notice requirements for the Application in accordance with 19.15.23.9(A)(5) and (6) NMAC, as applicable.
11. Applicant's proposed method of allocation, as modified herein, complies with 19.15.12.10(B)(1) or (C)(1) NMAC, as applicable.
12. Commingling of oil and gas production from state, federal, or tribal leases shall not commence until approved by the BLM or NMSLO, as applicable, in accordance with 19.15.12.10(B)(3) and (C)(4)(h) NMAC.
13. Applicant did not give adequate notice that it sought authorization to add pools, leases, or wells as required by 19.15.12.10(C)(4)(g) NMAC.
14. By granting the Application with the conditions specified below, this Order prevents waste and protects correlative rights, public health, and the environment.

ORDER

1. Applicant is authorized to surface commingle oil and gas production from the pools, leases, and wells identified in Exhibit A.
2. The oil and gas production for each well identified in Exhibit A shall be separated and metered prior to commingling.
3. Applicant shall measure and market the commingled oil at a central tank battery described in Exhibit A in accordance with this Order and 19.15.18.15 NMAC or 19.15.23.8 NMAC.
4. Applicant shall measure and market the commingled gas at a central delivery point, central tank battery, or gas title transfer meter described in Exhibit A in accordance with this Order and 19.15.19.9 NMAC, provided however that if the gas is vented or flared, and regardless of the reason or authorization pursuant to 19.15.28.8(B) NMAC for such venting or flaring, Applicant shall measure or estimate the gas in accordance with 19.15.28.8(E) NMAC.
5. Applicant shall calibrate the meters used to measure or allocate oil and gas production in accordance with 19.15.12.10(C)(2) NMAC.
6. If the commingling of oil and gas production from any pool, lease, or well reduces the value of the commingled oil and gas production to less than if it had remained segregated, no later than sixty (60) days after the decrease in value has occurred Applicant shall submit a new surface commingling application to OCD to amend this Order to remove the pool, lease, or well whose oil and gas production caused the decrease in value. If Applicant fails to submit a new application, this Order shall terminate on the following day, and if OCD denies the application, this Order shall terminate on the date of such action.
7. Applicant's request for authorization to add pools, leases, and wells prospectively pursuant to 19.15.12.10(C)(4)(g) NMAC is denied.
8. Applicant shall not commence commingling oil or gas production from state, federal, or tribal leases until approved by the BLM or NMSLO, as applicable.

9. If OCD determines that Applicant has failed to comply with any provision of this Order, OCD may take any action authorized by the Oil and Gas Act or the New Mexico Administrative Code (NMAC).
10. OCD retains jurisdiction of this matter and reserves the right to modify or revoke this Order as it deems necessary.

**STATE OF NEW MEXICO
OIL CONSERVATION DIVISION**



**ADRIENNE SANDOVAL
DIRECTOR**

DATE: 8/26/2021

State of New Mexico
Energy, Minerals and Natural Resources Department

Exhibit A

Order: **PC-1393**

Operator: **Cimarex Energy Company (215099)**

Central Tank Battery: **Vaca Draw West Central Tank Battery**

Central Tank Battery Location: **Unit M, Section 20, Township 25 South, Range 33 East**

Gas Title Transfer Meter Location: **Unit M, Section 20, Township 25 South, Range 33 East**

Pools

Pool Name	Pool Code
WC-025 G-08 S253235G; LWR BONE SPRIN	97903
WC-025 G-06 S253329D; UPR BONE SPRIN	97994
WC-025 G-09 S253309P; UPR WOLFCAMP	98180

Leases as defined in 19.15.12.7(C) NMAC

Lease	UL or Q/Q	S-T-R
NMNM 026394	All	17-25S-33E
	All	20-25S-33E

Wells

Well API	Well Name	UL or Q/Q	S-T-R	Pool
30-025-44150	Vaca Draw 20 17 Federal #5H	W/2 W/2	17-25S-33E	97994
		W/2 W/2	20-25S-33E	
30-025-44151	Vaca Draw 20 17 Federal #6H	W/2 W/2	17-25S-33E	97994
		W/2 W/2	20-25S-33E	
30-025-44360	Vaca Draw 20 17 Federal #9H	B C F G J K N O	17-25S-33E	97903
		B C F G J K N O	20-25S-33E	
30-025-44356	Vaca Draw 20 17 Federal #10H	B C F G J K N O	17-25S-33E	97903
		B C F G J K N O	20-25S-33E	
30-025-44357	Vaca Draw 20 17 Federal #11H	B C F G J K N O	17-25S-33E	97903
		B C F G J K N O	20-25S-33E	
30-025-44358	Vaca Draw 20 17 Federal #12H	B C F G J K N O	17-25S-33E	97903
		B C F G J K N O	20-25S-33E	
30-025-46113	Vaca Draw 20 17 Federal #29H	W/2	17-25S-33E	97994
		W/2	20-25S-33E	
30-025-46114	Vaca Draw 20 17 Federal #30H	W/2	17-25S-33E	97994
		W/2	20-25S-33E	
30-025-46115	Vaca Draw 20 17 Federal #31H	W/2	17-25S-33E	97994
		W/2	20-25S-33E	

30-025-46116	Vaca Draw 20 17 Federal #43H	E/2 E/2	17-25S-33E 20-25S-33E	97994
30-025-46117	Vaca Draw 20 17 Federal #44H	E/2 E/2	17-25S-33E 20-25S-33E	97994
30-025-46118	Vaca Draw 20 17 Federal #45H	E/2 E/2	17-25S-33E 20-25S-33E	97994
30-025-46119	Vaca Draw 20 17 Federal #57H	E/2 E/2	17-25S-33E 20-25S-33E	98180
30-025-46120	Vaca Draw 20 17 Federal #58H	E/2 E/2	17-25S-33E 20-25S-33E	98180
30-025-46121	Vaca Draw 20 17 Federal #59H	E/2 E/2	17-25S-33E 20-25S-33E	98180
30-025-47961	Vaca Draw 20 17 Federal #61H	E/2 E/2	17-25S-33E 20-25S-33E	98180
30-025-46160	Vaca Draw 20 17 Federal #71H	E/2 E/2	17-25S-33E 20-25S-33E	97994
30-025-46161	Vaca Draw 20 17 Federal #72H	E/2 E/2	17-25S-33E 20-25S-33E	97994
30-025-46122	Vaca Draw 20 17 Federal #73H	E/2 E/2	17-25S-33E 20-25S-33E	97994

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 21382

CONDITIONS

Operator: CIMAREX ENERGY CO. 600 N. Marienfeld Street Midland, TX 79701	OGRID: 215099
	Action Number: 21382
	Action Type: [C-107] Surface Commingle or Off-Lease (C-107B)

CONDITIONS

Created By	Condition	Condition Date
dmcclure	Please review the content of the order to ensure you are familiar with the authorities granted and any conditions of approval. If you have any questions regarding this matter, please contact me.	8/27/2021