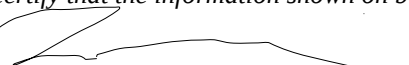


Submit To Appropriate District Office Two Copies <u>District I</u> 1625 N. French Dr., Hobbs, NM 88240 <u>District II</u> 811 S. First St., Artesia, NM 88210 <u>District III</u> 1000 Rio Brazos Rd., Aztec, NM 87410 <u>District IV</u> 1220 S. St. Francis Dr., Santa Fe, NM 87505		State of New Mexico Energy, Minerals and Natural Resources Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505			Form C-105 Revised August 1, 2011					
1. WELL API NO. 30-025-46480								2. Type of Lease ☒ STATE ☐ FEE ☐ FED/INDIAN		
3. State Oil & Gas Lease No.								5. Lease Name or Unit Agreement Name Igloo 19-24 State Fed Com		
WELL COMPLETION OR RECOMPLETION REPORT AND LOG								6. Well Number: 13H		
4. Reason for filing: ☒ COMPLETION REPORT (Fill in boxes #1 through #31 for State and Fee wells only) ☐ C-144 CLOSURE ATTACHMENT (Fill in boxes #1 through #9, #15 Date Rig Released and #32 and/or #33; attach this and the plat to the C-144 closure report in accordance with 19.15.17.13.K NMAC)								7. Type of Completion: ☒ NEW WELL ☐ WORKOVER ☐ DEEPENING ☐ PLUGBACK ☐ DIFFERENT RESERVOIR ☐ OTHER _____		
8. Name of Operator Caza Operating LLC						9. OGRID 249099				
10. Address of Operator 200 N. Lorraine St. #1550, Midland, TX 79701						11. Pool name or Wildcat Lea; Bone Spring				
12. Location	Unit Ltr	Section	Township	Range	Lot	Feet from the	N/S Line	Feet from the	E/W Line	County
Surface:	O	19	20S	35E		1620	South	2364	East	Lea
BH:	L	24	20S	35E		1760	South	42	West	Lea
13. Date Spudded 12/16/2019	14. Date T.D. Reached 2/21/2020		15. Date Rig Released 11/25/2020		16. Date Completed (Ready to Produce) 2/10/2021			17. Elevations (DF and RKB, RT, GR, etc.) 3693' GR		
18. Total Measured Depth of Well 18903			19. Plug Back Measured Depth 18805		20. Was Directional Survey Made? yes			21. Type Electric and Other Logs Run gamma ray		
22. Producing Interval(s), of this completion - Top, Bottom, Name 10,485' - 10,821'TVD, 2nd Bone Spring										
23. CASING RECORD (Report all strings set in well)										
CASING SIZE		WEIGHT LB./FT.		DEPTH SET		HOLE SIZE		CEMENTING RECORD		AMOUNT PULLED
13.375		54.5		2014		17.5		1405sx		
9.625		40		5239		12.25		2300sx		
5.5		20		18897		8.75		2577sx		
24. LINER RECORD										
SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN	25. TUBING RECORD					
					SIZE	DEPTH SET	PACKER SET			
					2.875	10389	10382			
26. Perforation record (interval, size, and number) 11,106 - 18,805', 0.42, 8 shots per foot					27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC.					
					DEPTH INTERVAL		AMOUNT AND KIND MATERIAL USED			
					11,106 - 18,805		21,401,525bs sand			
28. PRODUCTION										
Date First Production 2/10/2021		Production Method (<i>Flowing, gas lift, pumping - Size and type pump</i>) gas lift				Well Status (<i>Prod. or Shut-in</i>) producing				
Date of Test 2/22/2021	Hours Tested 24	Choke Size 64	Prod'n For Test Period	Oil - Bbl 570	Gas - MCF 1205	Water - Bbl. 421	Gas - Oil Ratio 2.11:1			
Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate	Oil - Bbl. 570	Gas - MCF 1205	Water - Bbl. 421	Oil Gravity - API - (<i>Corr.</i>) 37.8				
29. Disposition of Gas (<i>Sold, used for fuel, vented, etc.</i>) sold							30. Test Witnessed By Kevin Garrett			
31. List Attachments gamma ray										
32. If a temporary pit was used at the well, attach a plat with the location of the temporary pit.										
33. If an on-site burial was used at the well, report the exact location of the on-site burial:										
Latitude _____ Longitude _____ NAD 1927 1983										
I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief										
Signature 			Printed Name Steve Morris			Title Contract Engineer			Date 3/25/2021	
E-mail Address steve.morris@morcoreengineering.com										

This form is to be filed with the appropriate District Office of the Division not later than 20 days after the completion of any newly-drilled or deepened well and not later than 60 days after completion of closure. When submitted as a completion report, this shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, items 11, 12 and 26-31 shall be reported for each zone.

Southeastern New Mexico		Northwestern New Mexico	
T. Anhy	T. Canyon	T. Ojo Alamo	T. Penn A "
T. Salt	T. Strawn	T. Kirtland	T. Penn. "B"
B. Salt	T. Atoka	T. Fruitland	T. Penn. "C"
T. Yates	T. Miss	T. Pictured Cliffs	T. Penn. "D"
T. 7 Rivers	T. Devonian	T. Cliff House	T. Leadville
T. Queen	T. Silurian	T. Menefee	T. Madison
T. Grayburg	T. Montoya	T. Point Lookout	T. Elbert
T. San Andres	T. Simpson	T. Mancos	T. McCracken
T. Glorieta	T. McKee	T. Gallup	T. Ignacio Otzte
T. Paddock	T. Ellenburger	Base Greenhorn	T.Granite
T. Blinebry	T. Gr. Wash	T. Dakota	
T.Tubb	T. Delaware Sand	T. Morrison	
T. Drinkard	T. Bone Springs	T.Todilto	
T. Abo	T.	T. Entrada	
T. Wolfcamp	T.	T. Wingate	
T. Penn	T.	T. Chinle	
T. Cisco (Bough C)	T.	T. Permian	

No. 1, from.....to.....

No. 2, from.....to.....

No. 3, from.....to.....

No. 4, from.....to.....

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from.....to.....feet.....
 No. 2, from.....to.....feet.....
 No. 3, from.....to.....feet.....

From	To	Thickness In Feet	Lithology

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

Revised August 1, 2011
 Submit one copy to appropriate
 District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION AS-DRILLED PLAT

¹ API Number 30-025-46480	² Pool Code 37580	³ Pool Name LEA BONE SPRING; SOUTH
⁴ Property Code 313780	Property Name IGLOO 19-24 STATE FED COM	⁶ Well Number 13H
⁷ OGRID No. 249099	⁸ Operator Name CAZA OPERATING LLC	⁹ Elevation 3693'

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
J	19	20S	35E		1620	SOUTH	2364	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
L	24	20S	34E		1760	SOUTH	42	WEST	LEA
¹² Dedicated Acres 240.06	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.

BOTTOM HOLE LOCATION 1760' FSL 42' FWL, SECTION 24 18913' MEASURED DEPTH IN FEET NAD 83, SPCS NM EAST X:791256.80' / Y:567024.50' LAT:32.55618966N / LON:103.52218773W NAD 27, SPCS NM EAST X:750075.55' / Y:566962.05' LAT:32.55606603N / LON:103.52169931W	LAST TAKE POINT 1758' FSL 149' FWL, SECTION 24 18806' MEASURED DEPTH IN FEET NAD 83, SPCS NM EAST X:791363.70' / Y:567023.85' LAT:32.55618563N / LON:103.52184082W NAD 27, SPCS NM EAST X:750182.45' / Y:566961.40' LAT:32.55606200N / LON:103.52135241W		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 _____ Date 5/7/2020 Steve Morris Printed Name steve.morris@morcoreengineering.com E-mail Address
			¹⁸ SURVEYOR CERTIFICATION I hereby certify that the well surface location shown on this plat was plotted from field notes of the as-staked surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. Data used for underground measurements were provided by others for reference only and does not constitute field measurements performed by R-Squared Global. MAY 6, 2020 Date of Survey Signature and Seal of Professional Surveyor
SHEET 1 OF 1 JOB No. R4021_010 REV 0 JCS 4/21/2020	CORNER COORDINATES NAD 83, SPCS NM EAST A - X: 791208.43' / Y: 567899.03' B - X: 799133.31' / Y: 567973.23' C - X: 799143.70' / Y: 566653.49' D - X: 791217.69' / Y: 566581.81'	CORNER COORDINATES NAD 27, SPCS NM EAST A - X: 750027.20' / Y: 567836.55' B - X: 757951.99' / Y: 567910.72' C - X: 757962.33' / Y: 566591.01' D - X: 750036.42' / Y: 566519.37'	Certificate Number DAVID W. MYERS 11403

Distances/areas relative to NAD 83 Combined Scale Factor: 0.99981205 Convergence Angle: 00°26'57.22000"



Caza Operating LLC

Igloo 19-24 State Fed Com 13H

Igloo 19-24 State Fed Com 13H

Igloo 19-24 State Fed Com 13H

Igloo 19-24 State Fed Com 13H

Survey: Igloo 19-24 State Fed Com 13H

Morcor Standard Plan

16 April, 2020

These surveys are true and accurate to the best of my knowledge.

A handwritten signature in black ink, appearing to read 'Steve Morris'.

Steve Morris



Morcor Engineering

Morcor Standard Plan

Company:	Caza Operating LLC	Local Co-ordinate Reference:	Well Igloo 19-24 State Fed Com 13H
Project:	Igloo 19-24 State Fed Com 13H	TVD Reference:	WELL @ 3715.0usft (Original Well Elev)
Site:	Igloo 19-24 State Fed Com 13H	MD Reference:	WELL @ 3715.0usft (Original Well Elev)
Well:	Igloo 19-24 State Fed Com 13H	North Reference:	Grid
Wellbore:	Igloo 19-24 State Fed Com 13H	Survey Calculation Method:	Minimum Curvature
Design:	Igloo 19-24 State Fed Com 13H	Database:	EDM 5000.1 Single User Db

Project	Igloo 19-24 State Fed Com 13H		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Igloo 19-24 State Fed Com 13H		
Site Position:		Northing:	566,956.82 usft
From:	Lat/Long	Easting:	799,416.03 usft
Position Uncertainty:	1.0 usft	Slot Radius:	17-1/2 "
		Latitude:	32° 33' 20.988 N
		Longitude:	103° 29' 44.556 W
		Grid Convergence:	0.45 °

Well	Igloo 19-24 State Fed Com 13H		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	1.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 33' 20.988 N
		Longitude:	103° 29' 44.556 W
		Ground Level:	3,693.0 usft

Wellbore	Igloo 19-24 State Fed Com 13H		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2010	10/21/2018	6.66
			Dip Angle (°)
			60.31
			Field Strength (nT)
			48,085

Design	Igloo 19-24 State Fed Com 13H		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.0	0.0	0.0
			Direction (°)
			270.28

Survey Program	Date	4/16/2020		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	18,913.0	Igloo 19-24 State Fed Com 13H (Igloo 19-	MWD	MWD - Standard



Morcor Engineering Morcor Standard Plan

Company:	Caza Operating LLC	Local Co-ordinate Reference:	Well Igloo 19-24 State Fed Com 13H
Project:	Igloo 19-24 State Fed Com 13H	TVD Reference:	WELL @ 3715.0usft (Original Well Elev)
Site:	Igloo 19-24 State Fed Com 13H	MD Reference:	WELL @ 3715.0usft (Original Well Elev)
Well:	Igloo 19-24 State Fed Com 13H	North Reference:	Grid
Wellbore:	Igloo 19-24 State Fed Com 13H	Survey Calculation Method:	Minimum Curvature
Design:	Igloo 19-24 State Fed Com 13H	Database:	EDM 5000.1 Single User Db

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)
0.0	0.00	0.00	0.0	-3,715.0	0.0	0.0	799,416.03	566,956.82	0.00	0.00
100.0	0.07	119.54	100.0	-3,615.0	0.0	0.1	799,416.09	566,956.79	-0.05	0.07
125.0	0.06	126.05	125.0	-3,590.0	0.0	0.1	799,416.11	566,956.78	-0.08	0.05
150.0	0.05	134.66	150.0	-3,565.0	-0.1	0.1	799,416.13	566,956.76	-0.10	0.05
175.0	0.06	121.54	175.0	-3,540.0	-0.1	0.1	799,416.15	566,956.75	-0.11	0.06
200.0	0.07	179.62	200.0	-3,515.0	-0.1	0.1	799,416.16	566,956.72	-0.13	0.25
225.0	0.09	161.34	225.0	-3,490.0	-0.1	0.1	799,416.17	566,956.69	-0.13	0.13
250.0	0.09	175.13	250.0	-3,465.0	-0.2	0.1	799,416.17	566,956.65	-0.14	0.09
275.0	0.08	193.76	275.0	-3,440.0	-0.2	0.1	799,416.17	566,956.62	-0.14	0.12
300.0	0.10	177.76	300.0	-3,415.0	-0.2	0.1	799,416.17	566,956.58	-0.14	0.13
325.0	0.09	187.76	325.0	-3,390.0	-0.3	0.1	799,416.17	566,956.54	-0.13	0.08
350.0	0.15	196.38	350.0	-3,365.0	-0.3	0.1	799,416.15	566,956.49	-0.12	0.25
375.0	0.17	198.27	375.0	-3,340.0	-0.4	0.1	799,416.13	566,956.42	-0.10	0.08
400.0	0.18	200.14	400.0	-3,315.0	-0.5	0.1	799,416.11	566,956.35	-0.08	0.05
425.0	0.19	203.16	425.0	-3,290.0	-0.6	0.0	799,416.08	566,956.27	-0.05	0.06
450.0	0.16	194.78	450.0	-3,265.0	-0.6	0.0	799,416.05	566,956.20	-0.02	0.16
475.0	0.11	182.80	475.0	-3,240.0	-0.7	0.0	799,416.04	566,956.14	-0.01	0.23
500.0	0.13	197.05	500.0	-3,215.0	-0.7	0.0	799,416.03	566,956.09	0.00	0.14
525.0	0.12	183.35	525.0	-3,190.0	-0.8	0.0	799,416.02	566,956.04	0.01	0.13
550.0	0.18	173.69	550.0	-3,165.0	-0.8	0.0	799,416.03	566,955.97	0.00	0.26
575.0	0.20	180.18	575.0	-3,140.0	-0.9	0.0	799,416.03	566,955.89	0.00	0.12
600.0	0.21	183.26	600.0	-3,115.0	-1.0	0.0	799,416.03	566,955.80	0.00	0.06
625.0	0.23	192.36	625.0	-3,090.0	-1.1	0.0	799,416.01	566,955.71	0.01	0.16
650.0	0.22	193.90	650.0	-3,065.0	-1.2	0.0	799,415.99	566,955.61	0.04	0.05
675.0	0.26	200.05	675.0	-3,040.0	-1.3	-0.1	799,415.96	566,955.51	0.07	0.19
700.0	0.30	203.53	700.0	-3,015.0	-1.4	-0.1	799,415.92	566,955.40	0.11	0.17
725.0	0.30	212.42	725.0	-2,990.0	-1.5	-0.2	799,415.85	566,955.28	0.17	0.19



Morcor Engineering Morcor Standard Plan

Company:	Caza Operating LLC	Local Co-ordinate Reference:	Well Igloo 19-24 State Fed Com 13H
Project:	Igloo 19-24 State Fed Com 13H	TVD Reference:	WELL @ 3715.0usft (Original Well Elev)
Site:	Igloo 19-24 State Fed Com 13H	MD Reference:	WELL @ 3715.0usft (Original Well Elev)
Well:	Igloo 19-24 State Fed Com 13H	North Reference:	Grid
Wellbore:	Igloo 19-24 State Fed Com 13H	Survey Calculation Method:	Minimum Curvature
Design:	Igloo 19-24 State Fed Com 13H	Database:	EDM 5000.1 Single User Db

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)
750.0	0.33	214.36	750.0	-2,965.0	-1.7	-0.3	799,415.78	566,955.17	0.25	0.13
775.0	0.34	224.07	775.0	-2,940.0	-1.8	-0.3	799,415.69	566,955.05	0.34	0.23
800.0	0.31	218.41	800.0	-2,915.0	-1.9	-0.4	799,415.59	566,954.95	0.43	0.18
825.0	0.31	213.67	825.0	-2,890.0	-2.0	-0.5	799,415.51	566,954.84	0.51	0.10
850.0	0.30	210.70	850.0	-2,865.0	-2.1	-0.6	799,415.44	566,954.73	0.58	0.07
875.0	0.29	220.87	875.0	-2,840.0	-2.2	-0.7	799,415.37	566,954.62	0.66	0.21
900.0	0.28	219.06	900.0	-2,815.0	-2.3	-0.7	799,415.29	566,954.53	0.73	0.05
925.0	0.24	215.19	925.0	-2,790.0	-2.4	-0.8	799,415.22	566,954.44	0.80	0.17
950.0	0.27	219.23	950.0	-2,765.0	-2.5	-0.9	799,415.15	566,954.35	0.87	0.14
975.0	0.31	209.17	975.0	-2,740.0	-2.6	-1.0	799,415.08	566,954.24	0.94	0.26
1,000.0	0.34	198.43	1,000.0	-2,715.0	-2.7	-1.0	799,415.03	566,954.11	1.00	0.27
1,025.0	0.31	201.45	1,025.0	-2,690.0	-2.8	-1.1	799,414.98	566,953.98	1.04	0.14
1,050.0	0.36	205.70	1,050.0	-2,665.0	-3.0	-1.1	799,414.92	566,953.85	1.10	0.22
1,075.0	0.38	202.25	1,075.0	-2,640.0	-3.1	-1.2	799,414.85	566,953.70	1.17	0.12
1,100.0	0.36	199.59	1,100.0	-2,615.0	-3.3	-1.2	799,414.80	566,953.55	1.22	0.11
1,125.0	0.39	211.21	1,125.0	-2,590.0	-3.4	-1.3	799,414.72	566,953.40	1.29	0.33
1,150.0	0.37	215.43	1,150.0	-2,565.0	-3.6	-1.4	799,414.63	566,953.26	1.38	0.14
1,175.0	0.37	211.64	1,175.0	-2,540.0	-3.7	-1.5	799,414.54	566,953.13	1.47	0.10
1,200.0	0.41	214.70	1,200.0	-2,515.0	-3.8	-1.6	799,414.45	566,952.99	1.56	0.18
1,225.0	0.42	224.80	1,225.0	-2,490.0	-4.0	-1.7	799,414.34	566,952.85	1.68	0.29
1,250.0	0.44	229.07	1,250.0	-2,465.0	-4.1	-1.8	799,414.20	566,952.72	1.81	0.15
1,275.0	0.39	221.50	1,275.0	-2,440.0	-4.2	-2.0	799,414.07	566,952.59	1.94	0.30
1,300.0	0.39	222.31	1,300.0	-2,415.0	-4.4	-2.1	799,413.96	566,952.47	2.06	0.02
1,325.0	0.42	211.46	1,325.0	-2,390.0	-4.5	-2.2	799,413.85	566,952.33	2.16	0.33
1,350.0	0.45	210.94	1,350.0	-2,365.0	-4.7	-2.3	799,413.75	566,952.16	2.26	0.12
1,375.0	0.46	216.46	1,375.0	-2,340.0	-4.8	-2.4	799,413.64	566,952.00	2.37	0.18
1,400.0	0.47	217.53	1,400.0	-2,315.0	-5.0	-2.5	799,413.52	566,951.84	2.49	0.05



Morcor Engineering Morcor Standard Plan

Company:	Caza Operating LLC	Local Co-ordinate Reference:	Well Igloo 19-24 State Fed Com 13H
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Site:	Igloo 19-24 State Fed Com 13H	MD Reference:	WELL @ 3715.0usft (Original Well Elev)
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Wellbore:	Igloo 19-24 State Fed Com 13H	Survey Calculation Method:	Minimum Curvature
Design:	Igloo 19-24 State Fed Com 13H	Database:	EDM 5000.1 Single User Db

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)	
1,425.0	0.50	227.91	1,425.0	-2,290.0	-5.1	-2.7	799,413.38	566,951.68	2.63	0.37	
1,450.0	0.51	234.10	1,450.0	-2,265.0	-5.3	-2.8	799,413.21	566,951.54	2.80	0.22	
1,475.0	0.47	237.25	1,475.0	-2,240.0	-5.4	-3.0	799,413.03	566,951.42	2.98	0.19	
1,500.0	0.53	240.21	1,500.0	-2,215.0	-5.5	-3.2	799,412.84	566,951.31	3.16	0.26	
1,525.0	0.48	237.11	1,525.0	-2,190.0	-5.6	-3.4	799,412.66	566,951.20	3.35	0.23	
1,550.0	0.54	241.16	1,550.0	-2,165.0	-5.7	-3.6	799,412.46	566,951.08	3.54	0.28	
1,575.0	0.56	239.87	1,575.0	-2,140.0	-5.9	-3.8	799,412.26	566,950.96	3.75	0.09	
1,600.0	0.56	243.01	1,600.0	-2,115.0	-6.0	-4.0	799,412.04	566,950.85	3.96	0.12	
1,625.0	0.56	243.58	1,625.0	-2,090.0	-6.1	-4.2	799,411.82	566,950.74	4.18	0.02	
1,650.0	0.58	234.48	1,650.0	-2,065.0	-6.2	-4.4	799,411.61	566,950.61	4.39	0.37	
1,675.0	0.65	245.69	1,675.0	-2,040.0	-6.3	-4.7	799,411.38	566,950.48	4.63	0.56	
1,700.0	0.67	244.83	1,700.0	-2,015.0	-6.5	-4.9	799,411.12	566,950.36	4.89	0.09	
1,725.0	0.72	245.53	1,725.0	-1,990.0	-6.6	-5.2	799,410.84	566,950.23	5.16	0.20	
1,750.0	0.77	247.78	1,750.0	-1,965.0	-6.7	-5.5	799,410.54	566,950.10	5.46	0.23	
1,775.0	0.79	247.24	1,775.0	-1,940.0	-6.9	-5.8	799,410.23	566,949.97	5.77	0.09	
1,800.0	0.75	246.84	1,800.0	-1,915.0	-7.0	-6.1	799,409.92	566,949.84	6.08	0.16	
1,825.0	0.74	245.01	1,825.0	-1,890.0	-7.1	-6.4	799,409.62	566,949.71	6.38	0.10	
1,850.0	0.76	246.23	1,850.0	-1,865.0	-7.2	-6.7	799,409.32	566,949.57	6.67	0.10	
1,875.0	0.71	247.67	1,875.0	-1,840.0	-7.4	-7.0	799,409.03	566,949.45	6.97	0.21	
1,900.0	0.72	240.78	1,900.0	-1,815.0	-7.5	-7.3	799,408.75	566,949.31	7.25	0.35	
1,925.0	0.72	243.46	1,925.0	-1,790.0	-7.7	-7.6	799,408.47	566,949.16	7.53	0.13	
1,950.0	0.76	241.42	1,949.9	-1,765.1	-7.8	-7.8	799,408.18	566,949.01	7.81	0.19	
1,975.0	0.73	240.95	1,974.9	-1,740.1	-8.0	-8.1	799,407.90	566,948.86	8.10	0.12	
2,000.0	0.60	245.90	1,999.9	-1,715.1	-8.1	-8.4	799,407.64	566,948.73	8.35	0.57	
2,025.0	0.23	252.71	2,024.9	-1,690.1	-8.2	-8.6	799,407.47	566,948.66	8.52	1.49	
2,050.0	0.21	273.89	2,049.9	-1,665.1	-8.2	-8.7	799,407.38	566,948.65	8.61	0.33	
2,075.0	0.18	263.14	2,074.9	-1,640.1	-8.2	-8.7	799,407.30	566,948.65	8.70	0.19	



Morcor Engineering Morcor Standard Plan

Company:	Caza Operating LLC	Local Co-ordinate Reference:	Well Igloo 19-24 State Fed Com 13H
Project:	Igloo 19-24 State Fed Com 13H	TVD Reference:	WELL @ 3715.0usft (Original Well Elev)
Site:	Igloo 19-24 State Fed Com 13H	MD Reference:	WELL @ 3715.0usft (Original Well Elev)
Well:	Igloo 19-24 State Fed Com 13H	North Reference:	Grid
Wellbore:	Igloo 19-24 State Fed Com 13H	Survey Calculation Method:	Minimum Curvature
Design:	Igloo 19-24 State Fed Com 13H	Database:	EDM 5000.1 Single User Db

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)	
2,100.0	0.22	263.24	2,099.9	-1,615.1	-8.2	-8.8	799,407.21	566,948.64	8.79	0.16	
2,125.0	0.26	268.66	2,124.9	-1,590.1	-8.2	-8.9	799,407.10	566,948.63	8.89	0.18	
2,150.0	0.27	271.63	2,149.9	-1,565.1	-8.2	-9.0	799,406.99	566,948.63	9.01	0.07	
2,175.0	0.27	270.37	2,174.9	-1,540.1	-8.2	-9.2	799,406.87	566,948.63	9.12	0.02	
2,200.0	0.33	277.64	2,199.9	-1,515.1	-8.2	-9.3	799,406.74	566,948.64	9.25	0.28	
2,225.0	0.26	279.27	2,224.9	-1,490.1	-8.2	-9.4	799,406.61	566,948.66	9.38	0.28	
2,250.0	0.26	280.55	2,249.9	-1,465.1	-8.1	-9.5	799,406.50	566,948.68	9.49	0.02	
2,275.0	0.24	280.19	2,274.9	-1,440.1	-8.1	-9.6	799,406.39	566,948.70	9.60	0.08	
2,300.0	0.20	287.58	2,299.9	-1,415.1	-8.1	-9.7	799,406.30	566,948.72	9.69	0.20	
2,325.0	0.22	272.82	2,324.9	-1,390.1	-8.1	-9.8	799,406.21	566,948.74	9.78	0.23	
2,350.0	0.24	261.18	2,349.9	-1,365.1	-8.1	-9.9	799,406.11	566,948.73	9.88	0.20	
2,375.0	0.23	268.60	2,374.9	-1,340.1	-8.1	-10.0	799,406.01	566,948.72	9.98	0.13	
2,400.0	0.23	265.37	2,399.9	-1,315.1	-8.1	-10.1	799,405.91	566,948.72	10.08	0.05	
2,425.0	0.16	265.25	2,424.9	-1,290.1	-8.1	-10.2	799,405.83	566,948.71	10.17	0.28	
2,450.0	0.19	278.23	2,449.9	-1,265.1	-8.1	-10.3	799,405.75	566,948.71	10.24	0.20	
2,475.0	0.17	271.90	2,474.9	-1,240.1	-8.1	-10.4	799,405.67	566,948.72	10.32	0.11	
2,500.0	0.18	279.93	2,499.9	-1,215.1	-8.1	-10.4	799,405.60	566,948.73	10.40	0.11	
2,525.0	0.14	313.62	2,524.9	-1,190.1	-8.1	-10.5	799,405.53	566,948.76	10.46	0.40	
2,550.0	0.14	332.34	2,549.9	-1,165.1	-8.0	-10.5	799,405.50	566,948.80	10.50	0.18	
2,575.0	0.17	340.10	2,574.9	-1,140.1	-8.0	-10.6	799,405.47	566,948.87	10.52	0.15	
2,600.0	0.17	354.58	2,599.9	-1,115.1	-7.9	-10.6	799,405.46	566,948.94	10.54	0.17	
2,625.0	0.25	353.25	2,624.9	-1,090.1	-7.8	-10.6	799,405.45	566,949.03	10.55	0.32	
2,650.0	0.25	5.57	2,649.9	-1,065.1	-7.7	-10.6	799,405.44	566,949.14	10.55	0.21	
2,675.0	0.26	16.54	2,674.9	-1,040.1	-7.6	-10.6	799,405.47	566,949.25	10.53	0.20	
2,700.0	0.19	15.83	2,699.9	-1,015.1	-7.5	-10.5	799,405.49	566,949.34	10.50	0.28	
2,725.0	0.20	20.45	2,724.9	-990.1	-7.4	-10.5	799,405.52	566,949.42	10.48	0.07	
2,750.0	0.23	28.00	2,749.9	-965.1	-7.3	-10.5	799,405.56	566,949.51	10.44	0.16	



Morcor Engineering

Morcor Standard Plan

Company:	Caza Operating LLC	Local Co-ordinate Reference:	Well Igloo 19-24 State Fed Com 13H
Project:	Igloo 19-24 State Fed Com 13H	TVD Reference:	WELL @ 3715.0usft (Original Well Elev)
Site:	Igloo 19-24 State Fed Com 13H	MD Reference:	WELL @ 3715.0usft (Original Well Elev)
Well:	Igloo 19-24 State Fed Com 13H	North Reference:	Grid
Wellbore:	Igloo 19-24 State Fed Com 13H	Survey Calculation Method:	Minimum Curvature
Design:	Igloo 19-24 State Fed Com 13H	Database:	EDM 5000.1 Single User Db

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)	
2,775.0	0.17	14.31	2,774.9	-940.1	-7.2	-10.4	799,405.59	566,949.59	10.41	0.31	
2,800.0	0.23	359.27	2,799.9	-915.1	-7.1	-10.4	799,405.60	566,949.67	10.40	0.32	
2,825.0	0.27	0.74	2,824.9	-890.1	-7.0	-10.4	799,405.60	566,949.78	10.40	0.16	
2,850.0	0.28	10.42	2,849.9	-865.1	-6.9	-10.4	799,405.61	566,949.90	10.39	0.19	
2,875.0	0.40	32.21	2,874.9	-840.1	-6.8	-10.4	799,405.67	566,950.03	10.33	0.70	
2,900.0	0.59	44.48	2,899.9	-815.1	-6.6	-10.2	799,405.81	566,950.20	10.20	0.87	
2,925.0	0.86	46.88	2,924.9	-790.1	-6.4	-10.0	799,406.03	566,950.42	9.97	1.09	
2,950.0	0.91	47.24	2,949.9	-765.1	-6.1	-9.7	799,406.32	566,950.68	9.69	0.20	
2,975.0	0.98	46.58	2,974.9	-740.1	-5.9	-9.4	799,406.62	566,950.96	9.39	0.28	
3,000.0	1.33	56.84	2,999.9	-715.1	-5.6	-9.0	799,407.02	566,951.27	8.99	1.62	
3,025.0	1.77	64.11	3,024.9	-690.1	-5.2	-8.4	799,407.61	566,951.60	8.40	1.92	
3,050.0	1.92	62.25	3,049.9	-665.1	-4.9	-7.7	799,408.32	566,951.96	7.69	0.65	
3,075.0	2.19	65.56	3,074.9	-640.1	-4.5	-6.9	799,409.13	566,952.35	6.88	1.18	
3,100.0	2.36	67.54	3,099.9	-615.1	-4.1	-6.0	799,410.04	566,952.75	5.97	0.75	
3,125.0	2.59	68.76	3,124.8	-590.2	-3.7	-5.0	799,411.04	566,953.15	4.97	0.94	
3,150.0	2.97	66.64	3,149.8	-565.2	-3.2	-3.9	799,412.16	566,953.61	3.86	1.57	
3,175.0	3.18	67.75	3,174.8	-540.2	-2.7	-2.6	799,413.40	566,954.13	2.62	0.87	
3,200.0	3.20	68.60	3,199.7	-515.3	-2.2	-1.3	799,414.69	566,954.65	1.33	0.21	
3,225.0	3.20	69.07	3,224.7	-490.3	-1.7	0.0	799,415.99	566,955.15	0.03	0.10	
3,250.0	3.27	66.26	3,249.7	-465.3	-1.1	1.3	799,417.30	566,955.69	-1.27	0.69	
3,275.0	3.57	64.51	3,274.6	-440.4	-0.5	2.6	799,418.65	566,956.31	-2.62	1.27	
3,300.0	3.67	64.19	3,299.6	-415.4	0.2	4.0	799,420.07	566,956.99	-4.04	0.41	
3,325.0	3.72	64.57	3,324.5	-390.5	0.9	5.5	799,421.53	566,957.69	-5.49	0.22	
3,350.0	3.72	65.03	3,349.5	-365.5	1.6	7.0	799,422.99	566,958.38	-6.95	0.12	
3,375.0	3.86	64.77	3,374.4	-340.6	2.3	8.5	799,424.49	566,959.08	-8.45	0.56	
3,400.0	4.20	62.43	3,399.3	-315.7	3.0	10.0	799,426.06	566,959.86	-10.02	1.51	
3,425.0	4.41	61.61	3,424.3	-290.7	3.9	11.7	799,427.72	566,960.74	-11.67	0.88	



Morcor Engineering Morcor Standard Plan

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Site:	Igloo 19-24 State Fed Com 13H	MD Reference:	WELL @ 3715.0usft (Original Well Elev)
Well:	Igloo 19-24 State Fed Com 13H	North Reference:	Grid
Wellbore:	Igloo 19-24 State Fed Com 13H	Survey Calculation Method:	Minimum Curvature
Design:	Igloo 19-24 State Fed Com 13H	Database:	EDM 5000.1 Single User Db

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)	
3,450.0	4.54	60.85	3,449.2	-265.8	4.9	13.4	799,429.43	566,961.68	-13.37	0.57	
3,475.0	4.55	61.72	3,474.1	-240.9	5.8	15.1	799,431.17	566,962.63	-15.11	0.28	
3,500.0	4.65	61.69	3,499.0	-216.0	6.8	16.9	799,432.93	566,963.59	-16.87	0.40	
3,525.0	4.74	60.83	3,524.0	-191.0	7.7	18.7	799,434.73	566,964.57	-18.66	0.46	
3,550.0	4.87	60.84	3,548.9	-166.1	8.8	20.5	799,436.56	566,965.59	-20.48	0.52	
3,575.0	4.95	61.06	3,573.8	-141.2	9.8	22.4	799,438.43	566,966.63	-22.34	0.33	
3,600.0	5.10	59.35	3,598.7	-116.3	10.9	24.3	799,440.33	566,967.72	-24.24	0.85	
3,625.0	5.29	56.38	3,623.6	-91.4	12.1	26.2	799,442.24	566,968.92	-26.15	1.32	
3,650.0	5.53	53.53	3,648.5	-66.5	13.5	28.1	799,444.17	566,970.28	-28.07	1.44	
3,675.0	5.69	51.84	3,673.3	-41.7	14.9	30.1	799,446.11	566,971.76	-30.01	0.92	
3,700.0	5.92	49.89	3,698.2	-16.8	16.5	32.0	799,448.07	566,973.35	-31.96	1.21	
3,725.0	6.16	48.87	3,723.1	8.1	18.2	34.0	799,450.07	566,975.07	-33.95	1.05	
3,750.0	6.39	48.36	3,747.9	32.9	20.1	36.1	799,452.12	566,976.87	-35.99	0.95	
3,775.0	6.56	47.72	3,772.8	57.8	21.9	38.2	799,454.22	566,978.76	-38.08	0.74	
3,800.0	6.67	47.36	3,797.6	82.6	23.9	40.3	799,456.34	566,980.70	-40.19	0.47	
3,825.0	6.80	47.29	3,822.4	107.4	25.9	42.5	799,458.50	566,982.69	-42.34	0.52	
3,850.0	6.82	47.03	3,847.3	132.3	27.9	44.6	799,460.67	566,984.71	-44.50	0.15	
3,875.0	6.90	46.87	3,872.1	157.1	29.9	46.8	799,462.85	566,986.74	-46.67	0.33	
3,900.0	6.97	47.10	3,896.9	181.9	32.0	49.0	799,465.06	566,988.80	-48.87	0.30	
3,925.0	7.05	46.94	3,921.7	206.7	34.1	51.3	799,467.29	566,990.88	-51.09	0.33	
3,950.0	7.09	46.22	3,946.5	231.5	36.2	53.5	799,469.53	566,993.00	-53.32	0.39	
3,975.0	7.05	45.98	3,971.3	256.3	38.3	55.7	799,471.74	566,995.13	-55.52	0.20	
4,000.0	7.05	46.15	3,996.1	281.1	40.4	57.9	799,473.95	566,997.26	-57.72	0.08	
4,025.0	6.91	45.69	4,021.0	306.0	42.6	60.1	799,476.14	566,999.37	-59.89	0.60	
4,050.0	6.91	44.98	4,045.8	330.8	44.7	62.2	799,478.28	567,001.49	-62.02	0.34	
4,075.0	6.89	45.33	4,070.6	355.6	46.8	64.4	799,480.41	567,003.61	-64.14	0.19	
4,100.0	6.78	45.91	4,095.4	380.4	48.9	66.5	799,482.53	567,005.69	-66.26	0.52	



Morcor Engineering Morcor Standard Plan

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Site:	Igloo 19-24 State Fed Com 13H	MD Reference:	WELL @ 3715.0usft (Original Well Elev)
Well:	Igloo 19-24 State Fed Com 13H	North Reference:	Grid
Wellbore:	Igloo 19-24 State Fed Com 13H	Survey Calculation Method:	Minimum Curvature
Design:	Igloo 19-24 State Fed Com 13H	Database:	EDM 5000.1 Single User Db

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)	
4,125.0	6.59	46.36	4,120.2	405.2	50.9	68.6	799,484.63	567,007.70	-68.35	0.79	
4,150.0	6.35	45.33	4,145.1	430.1	52.8	70.6	799,486.65	567,009.67	-70.36	1.07	
4,175.0	6.29	44.32	4,169.9	454.9	54.8	72.6	799,488.59	567,011.62	-72.29	0.51	
4,200.0	6.09	43.23	4,194.8	479.8	56.7	74.4	799,490.46	567,013.56	-74.14	0.93	
4,225.0	6.12	43.57	4,219.6	504.6	58.7	76.2	799,492.28	567,015.50	-75.96	0.19	
4,250.0	6.16	44.60	4,244.5	529.5	60.6	78.1	799,494.14	567,017.42	-77.81	0.47	
4,275.0	6.24	44.56	4,269.4	554.4	62.5	80.0	799,496.04	567,019.34	-79.70	0.32	
4,300.0	6.35	44.03	4,294.2	579.2	64.5	81.9	799,497.95	567,021.30	-81.60	0.50	
4,325.0	6.41	45.21	4,319.0	604.0	66.5	83.9	799,499.90	567,023.28	-83.54	0.58	
4,350.0	6.38	45.36	4,343.9	628.9	68.4	85.8	799,501.88	567,025.24	-85.51	0.14	
4,375.0	6.37	46.02	4,368.7	653.7	70.4	87.8	799,503.87	567,027.18	-87.49	0.30	
4,400.0	6.41	45.97	4,393.6	678.6	72.3	89.8	799,505.87	567,029.11	-89.48	0.16	
4,425.0	6.35	46.44	4,418.4	703.4	74.2	91.8	799,507.88	567,031.03	-91.48	0.32	
4,450.0	6.27	47.85	4,443.3	728.3	76.1	93.9	799,509.89	567,032.90	-93.48	0.70	
4,475.0	6.19	47.93	4,468.1	753.1	77.9	95.9	799,511.90	567,034.72	-95.49	0.32	
4,500.0	6.11	48.18	4,493.0	778.0	79.7	97.9	799,513.89	567,036.51	-97.47	0.34	
4,525.0	5.93	49.89	4,517.8	802.8	81.4	99.8	799,515.87	567,038.23	-99.44	1.02	
4,550.0	5.89	50.86	4,542.7	827.7	83.1	101.8	799,517.86	567,039.87	-101.41	0.43	
4,575.0	5.80	51.54	4,567.6	852.6	84.6	103.8	799,519.84	567,041.47	-103.39	0.45	
4,600.0	5.69	51.62	4,592.5	877.5	86.2	105.8	799,521.80	567,043.02	-105.34	0.44	
4,625.0	5.64	52.58	4,617.3	902.3	87.7	107.7	799,523.75	567,044.54	-107.28	0.43	
4,650.0	5.62	53.22	4,642.2	927.2	89.2	109.7	799,525.70	567,046.02	-109.23	0.26	
4,675.0	5.65	54.35	4,667.1	952.1	90.6	111.7	799,527.68	567,047.47	-111.21	0.46	
4,700.0	5.63	54.21	4,692.0	977.0	92.1	113.6	799,529.68	567,048.90	-113.19	0.10	
4,725.0	5.49	53.53	4,716.9	1,001.9	93.5	115.6	799,531.64	567,050.33	-115.14	0.62	
4,750.0	5.37	53.55	4,741.7	1,026.7	94.9	117.5	799,533.54	567,051.74	-117.04	0.48	
4,775.0	5.36	54.13	4,766.6	1,051.6	96.3	119.4	799,535.43	567,053.12	-118.92	0.22	



Morcor Engineering Morcor Standard Plan

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Site:	Igloo 19-24 State Fed Com 13H	MD Reference:	WELL @ 3715.0usft (Original Well Elev)
Well:	Igloo 19-24 State Fed Com 13H	North Reference:	Grid
Wellbore:	Igloo 19-24 State Fed Com 13H	Survey Calculation Method:	Minimum Curvature
Design:	Igloo 19-24 State Fed Com 13H	Database:	EDM 5000.1 Single User Db

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)	
4,800.0	5.31	54.70	4,791.5	1,076.5	97.6	121.3	799,537.32	567,054.47	-120.80	0.29	
4,825.0	5.39	56.33	4,816.4	1,101.4	99.0	123.2	799,539.24	567,055.79	-122.72	0.69	
4,850.0	5.44	55.75	4,841.3	1,126.3	100.3	125.2	799,541.19	567,057.11	-124.67	0.30	
4,875.0	5.47	56.34	4,866.2	1,151.2	101.6	127.1	799,543.17	567,058.43	-126.63	0.25	
4,900.0	5.39	56.97	4,891.1	1,176.1	102.9	129.1	799,545.14	567,059.73	-128.60	0.40	
4,925.0	5.27	56.41	4,916.0	1,201.0	104.2	131.0	799,547.08	567,061.01	-130.54	0.52	
4,950.0	5.24	56.45	4,940.9	1,225.9	105.5	133.0	799,548.99	567,062.27	-132.44	0.12	
4,975.0	5.21	57.23	4,965.8	1,250.8	106.7	134.9	799,550.90	567,063.52	-134.34	0.31	
5,000.0	5.20	57.66	4,990.7	1,275.7	107.9	136.8	799,552.81	567,064.74	-136.24	0.16	
5,025.0	5.27	58.35	5,015.6	1,300.6	109.1	138.7	799,554.74	567,065.95	-138.17	0.38	
5,050.0	5.26	58.59	5,040.4	1,325.4	110.3	140.7	799,556.70	567,067.15	-140.12	0.10	
5,075.0	5.25	58.51	5,065.3	1,350.3	111.5	142.6	799,558.65	567,068.34	-142.07	0.05	
5,100.0	5.22	59.48	5,090.2	1,375.2	112.7	144.6	799,560.61	567,069.52	-144.02	0.37	
5,125.0	5.16	60.16	5,115.1	1,400.1	113.8	146.5	799,562.56	567,070.66	-145.97	0.34	
5,150.0	5.07	60.08	5,140.0	1,425.0	114.9	148.5	799,564.49	567,071.77	-147.90	0.36	
5,175.0	5.09	61.54	5,164.9	1,449.9	116.0	150.4	799,566.43	567,072.85	-149.82	0.52	
5,178.0	5.10	61.72	5,167.9	1,452.9	116.1	150.6	799,566.66	567,072.97	-150.06	0.63	
5,297.0	5.07	57.83	5,286.5	1,571.5	121.5	159.7	799,575.77	567,078.28	-159.14	0.29	
5,391.0	4.20	53.74	5,380.2	1,665.2	125.7	166.0	799,582.06	567,082.52	-165.41	0.99	
5,486.0	1.74	32.44	5,475.0	1,760.0	129.0	169.6	799,585.64	567,085.80	-168.97	2.79	
5,581.0	0.83	334.65	5,570.0	1,855.0	130.8	170.1	799,586.12	567,087.64	-169.44	1.55	
5,675.0	0.76	335.46	5,664.0	1,949.0	132.0	169.5	799,585.57	567,088.82	-168.89	0.08	
5,769.0	0.87	354.91	5,758.0	2,043.0	133.3	169.2	799,585.25	567,090.10	-168.56	0.31	
5,863.0	0.79	353.20	5,852.0	2,137.0	134.6	169.1	799,585.11	567,091.45	-168.41	0.09	
5,958.0	0.85	326.08	5,947.0	2,232.0	135.9	168.6	799,584.64	567,092.69	-167.94	0.41	
6,052.0	0.96	328.11	6,040.9	2,325.9	137.1	167.8	799,583.83	567,093.94	-167.12	0.12	
6,146.0	0.04	359.92	6,134.9	2,419.9	137.8	167.4	799,583.41	567,094.64	-166.70	0.99	



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Site:	Igloo 19-24 State Fed Com 13H	MD Reference:	WELL @ 3715.0usft (Original Well Elev)
Well:	Igloo 19-24 State Fed Com 13H	North Reference:	Grid
Wellbore:	Igloo 19-24 State Fed Com 13H	Survey Calculation Method:	Minimum Curvature
Design:	Igloo 19-24 State Fed Com 13H	Database:	EDM 5000.1 Single User Db

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)	
6,240.0	0.52	141.10	6,228.9	2,513.9	137.5	167.6	799,583.68	567,094.34	-166.97	0.59	
6,335.0	0.55	153.11	6,323.9	2,608.9	136.8	168.1	799,584.16	567,093.60	-167.45	0.12	
6,429.0	0.52	149.28	6,417.9	2,702.9	136.0	168.5	799,584.58	567,092.83	-167.88	0.05	
6,523.0	0.54	140.53	6,511.9	2,796.9	135.3	169.0	799,585.08	567,092.12	-168.38	0.09	
6,618.0	0.49	133.37	6,606.9	2,891.9	134.7	169.6	799,585.66	567,091.49	-168.97	0.09	
6,711.0	0.19	106.03	6,699.9	2,984.9	134.4	170.1	799,586.10	567,091.18	-169.40	0.36	
6,806.0	0.18	106.09	6,794.9	3,079.9	134.3	170.4	799,586.39	567,091.09	-169.70	0.01	
6,902.0	0.09	165.05	6,890.9	3,175.9	134.2	170.5	799,586.56	567,090.98	-169.87	0.16	
6,996.0	0.06	344.62	6,984.9	3,269.9	134.1	170.5	799,586.56	567,090.96	-169.87	0.16	
7,091.0	0.10	287.06	7,079.9	3,364.9	134.2	170.4	799,586.47	567,091.03	-169.78	0.09	
7,186.0	0.32	181.20	7,174.9	3,459.9	134.0	170.4	799,586.39	567,090.79	-169.69	0.38	
7,280.0	0.36	175.02	7,268.9	3,553.9	133.4	170.4	799,586.41	567,090.23	-169.72	0.06	
7,374.0	0.29	178.75	7,362.9	3,647.9	132.9	170.4	799,586.44	567,089.70	-169.75	0.08	
7,469.0	0.38	182.66	7,457.9	3,742.9	132.3	170.4	799,586.43	567,089.14	-169.74	0.10	
7,562.0	0.64	181.30	7,550.9	3,835.9	131.5	170.4	799,586.40	567,088.32	-169.72	0.28	
7,656.0	0.38	189.97	7,644.9	3,929.9	130.7	170.3	799,586.34	567,087.48	-169.66	0.29	
7,751.0	0.60	164.11	7,739.9	4,024.9	129.9	170.4	799,586.42	567,086.69	-169.75	0.32	
7,844.0	0.48	157.20	7,832.9	4,117.9	129.0	170.7	799,586.70	567,085.87	-170.03	0.15	
7,939.0	0.25	163.66	7,927.9	4,212.9	128.5	170.9	799,586.91	567,085.30	-170.25	0.25	
8,034.0	0.48	202.52	8,022.9	4,307.9	127.9	170.8	799,586.82	567,084.74	-170.16	0.34	
8,128.0	0.44	207.80	8,116.9	4,401.9	127.2	170.5	799,586.50	567,084.05	-169.84	0.06	
8,220.0	0.48	217.22	8,208.9	4,493.9	126.6	170.1	799,586.10	567,083.43	-169.45	0.09	
8,315.0	0.25	198.98	8,303.9	4,588.9	126.1	169.8	799,585.79	567,082.92	-169.14	0.27	
8,410.0	0.39	235.47	8,398.9	4,683.9	125.7	169.4	799,585.46	567,082.54	-168.81	0.25	
8,503.0	0.29	220.18	8,491.9	4,776.9	125.4	169.0	799,585.05	567,082.18	-168.40	0.14	
8,598.0	0.35	209.00	8,586.9	4,871.9	124.9	168.7	799,584.75	567,081.74	-168.11	0.09	
8,692.0	0.45	250.05	8,680.9	4,965.9	124.5	168.2	799,584.27	567,081.37	-167.62	0.31	



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Site:	Igloo 19-24 State Fed Com 13H	MD Reference:	WELL @ 3715.0usft (Original Well Elev)
Well:	Igloo 19-24 State Fed Com 13H	North Reference:	Grid
Wellbore:	Igloo 19-24 State Fed Com 13H	Survey Calculation Method:	Minimum Curvature
Design:	Igloo 19-24 State Fed Com 13H	Database:	EDM 5000.1 Single User Db

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)	
8,786.0	0.27	277.36	8,774.9	5,059.9	124.4	167.7	799,583.70	567,081.27	-167.06	0.26	
8,880.0	0.31	278.03	8,868.9	5,153.9	124.5	167.2	799,583.23	567,081.33	-166.58	0.04	
8,974.0	0.58	279.57	8,962.9	5,247.9	124.6	166.5	799,582.51	567,081.45	-165.86	0.29	
9,069.0	0.61	249.48	9,057.9	5,342.9	124.5	165.5	799,581.56	567,081.35	-164.91	0.33	
9,163.0	0.56	242.31	9,151.9	5,436.9	124.1	164.6	799,580.68	567,080.96	-164.04	0.09	
9,257.0	0.40	220.87	9,245.9	5,530.9	123.7	164.0	799,580.06	567,080.50	-163.42	0.25	
9,351.0	0.15	262.52	9,339.9	5,624.9	123.4	163.7	799,579.73	567,080.24	-163.09	0.32	
9,446.0	0.24	210.75	9,434.9	5,719.9	123.2	163.5	799,579.50	567,080.05	-162.86	0.20	
9,541.0	0.24	139.77	9,529.9	5,814.9	122.9	163.5	799,579.53	567,079.73	-162.89	0.29	
9,635.0	0.50	134.94	9,623.9	5,908.9	122.5	163.9	799,579.94	567,079.29	-163.31	0.28	
9,730.0	0.34	118.95	9,718.9	6,003.9	122.0	164.5	799,580.48	567,078.86	-163.85	0.21	
9,824.0	0.71	146.81	9,812.9	6,097.9	121.4	165.0	799,581.05	567,078.23	-164.42	0.47	
9,918.0	0.75	152.09	9,906.8	6,191.8	120.4	165.6	799,581.65	567,077.20	-165.03	0.08	
10,011.0	1.07	160.71	9,999.8	6,284.8	119.0	166.2	799,582.23	567,075.85	-165.61	0.37	
10,105.0	1.12	170.45	10,093.8	6,378.8	117.3	166.6	799,582.67	567,074.11	-166.06	0.20	
10,199.0	1.08	191.61	10,187.8	6,472.8	115.5	166.6	799,582.64	567,072.34	-166.04	0.43	
10,265.0	1.19	192.17	10,253.8	6,538.8	114.2	166.3	799,582.37	567,071.06	-165.78	0.17	
10,313.0	5.41	252.70	10,301.7	6,586.7	113.1	164.1	799,580.11	567,069.90	-163.52	10.28	
10,360.0	13.46	264.52	10,348.0	6,633.0	111.9	156.5	799,572.53	567,068.71	-155.95	17.53	
10,407.0	21.08	267.58	10,392.9	6,677.9	111.0	142.6	799,558.62	567,067.83	-142.04	16.32	
10,454.0	27.43	264.91	10,435.7	6,720.7	109.7	123.3	799,539.37	567,066.52	-122.80	13.71	
10,500.0	32.40	265.28	10,475.6	6,760.6	107.7	100.5	799,516.52	567,064.56	-99.96	10.81	
10,547.0	34.84	266.61	10,514.7	6,799.7	105.9	74.5	799,490.57	567,062.73	-74.02	5.42	
10,594.0	40.28	270.09	10,552.0	6,837.0	105.1	45.9	799,461.95	567,061.96	-45.40	12.42	
10,641.0	41.77	270.75	10,587.4	6,872.4	105.4	15.1	799,431.10	567,062.19	-14.55	3.30	
10,689.0	42.77	270.26	10,622.9	6,907.9	105.6	-17.2	799,398.82	567,062.47	17.73	2.19	
10,736.0	43.54	270.15	10,657.2	6,942.2	105.8	-49.4	799,366.67	567,062.59	49.88	1.65	



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Design:	Igloo 19-24 State Fed Com 13H	Database:	EDM 5000.1 Single User Db

Survey										
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10,784.0	49.72	270.37	10,690.2	6,975.2	105.9	-84.2	799,331.80	567,062.75	84.76	12.88
10,831.0	56.78	270.44	10,718.3	7,003.3	106.2	-121.9	799,294.16	567,063.01	122.39	15.02
10,878.0	60.44	271.14	10,742.7	7,027.7	106.8	-162.0	799,254.05	567,063.57	162.50	7.89
10,925.0	63.77	270.96	10,764.7	7,049.7	107.5	-203.5	799,212.52	567,064.33	204.03	7.09
10,972.0	65.69	270.67	10,784.8	7,069.8	108.1	-246.0	799,170.03	567,064.94	246.53	4.12
11,019.0	71.58	269.60	10,801.9	7,086.9	108.2	-289.8	799,126.28	567,065.03	290.28	12.71
11,066.0	78.23	268.57	10,814.1	7,099.1	107.5	-335.1	799,080.93	567,064.30	335.62	14.31
11,113.0	85.68	268.23	10,820.7	7,105.7	106.2	-381.6	799,034.45	567,063.00	382.10	15.87
11,160.0	91.68	269.37	10,821.8	7,106.8	105.2	-428.5	798,987.49	567,062.02	429.05	12.99
11,254.0	92.74	269.81	10,818.2	7,103.2	104.5	-522.5	798,893.57	567,061.35	522.97	1.22
11,317.0	93.17	269.90	10,814.9	7,099.9	104.4	-585.4	798,830.65	567,061.19	585.89	0.70
11,338.0	93.33	270.79	10,813.7	7,098.7	104.5	-606.4	798,809.68	567,061.31	606.85	4.30
11,432.0	93.11	271.58	10,808.5	7,093.5	106.4	-700.2	798,715.85	567,063.25	700.69	0.87
11,526.0	93.17	272.04	10,803.3	7,088.3	109.4	-794.0	798,622.04	567,066.22	794.52	0.49
11,620.0	93.16	272.64	10,798.1	7,083.1	113.2	-887.8	798,528.26	567,070.05	888.31	0.64
11,714.0	94.09	270.71	10,792.2	7,077.2	116.0	-981.5	798,434.50	567,072.79	982.09	2.28
11,808.0	94.17	270.61	10,785.4	7,070.4	117.1	-1,075.3	798,340.75	567,073.87	1,075.85	0.14
11,902.0	94.12	271.12	10,778.6	7,063.6	118.5	-1,169.0	798,247.00	567,075.29	1,169.60	0.54
11,997.0	94.17	271.72	10,771.7	7,056.7	120.8	-1,263.8	798,152.28	567,077.64	1,264.33	0.63
12,090.0	93.05	271.83	10,765.9	7,050.9	123.7	-1,356.5	798,059.51	567,080.51	1,357.11	1.21
12,184.0	93.08	269.63	10,760.9	7,045.9	124.9	-1,450.4	797,965.66	567,081.71	1,450.97	2.34
12,279.0	93.08	269.03	10,755.8	7,040.8	123.8	-1,545.2	797,870.80	567,080.60	1,545.82	0.63
12,373.0	93.19	269.20	10,750.6	7,035.6	122.3	-1,639.1	797,776.96	567,079.15	1,639.66	0.22
12,467.0	93.19	270.09	10,745.4	7,030.4	121.7	-1,732.9	797,683.10	567,078.57	1,733.50	0.95
12,561.0	93.16	270.73	10,740.2	7,025.2	122.4	-1,826.8	797,589.25	567,079.24	1,827.36	0.68
12,656.0	93.02	269.98	10,735.1	7,020.1	123.0	-1,921.6	797,494.39	567,079.83	1,922.22	0.80
12,750.0	93.08	269.62	10,730.1	7,015.1	122.7	-2,015.5	797,400.53	567,079.50	2,016.08	0.39



Morcor Engineering Morcor Standard Plan

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Site:	Igloo 19-24 State Fed Com 13H	MD Reference:	WELL @ 3715.0usft (Original Well Elev)
Well:	Igloo 19-24 State Fed Com 13H	North Reference:	Grid
Wellbore:	Igloo 19-24 State Fed Com 13H	Survey Calculation Method:	Minimum Curvature
Design:	Igloo 19-24 State Fed Com 13H	Database:	EDM 5000.1 Single User Db

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)	
12,845.0	93.05	268.82	10,725.0	7,010.0	121.4	-2,110.4	797,305.67	567,078.21	2,110.93	0.84	
12,939.0	93.36	267.94	10,719.7	7,004.7	118.7	-2,204.2	797,211.86	567,075.55	2,204.73	0.99	
13,034.0	94.09	267.94	10,713.5	6,998.5	115.3	-2,298.9	797,117.12	567,072.15	2,299.45	0.77	
13,127.0	94.09	267.69	10,706.9	6,991.9	111.8	-2,391.6	797,024.42	567,068.61	2,392.13	0.27	
13,222.0	94.09	268.35	10,700.1	6,985.1	108.5	-2,486.3	796,929.72	567,065.34	2,486.81	0.69	
13,316.0	94.03	269.31	10,693.5	6,978.5	106.6	-2,580.1	796,835.98	567,063.42	2,580.54	1.02	
13,410.0	94.03	270.15	10,686.9	6,971.9	106.2	-2,673.8	796,742.21	567,062.98	2,674.31	0.89	
13,504.0	93.08	269.97	10,681.0	6,966.0	106.3	-2,767.6	796,648.40	567,063.08	2,768.12	1.03	
13,598.0	92.83	269.17	10,676.2	6,961.2	105.6	-2,861.5	796,554.53	567,062.37	2,861.99	0.89	
13,692.0	89.94	271.26	10,673.9	6,958.9	105.9	-2,955.5	796,460.57	567,062.73	2,955.95	3.79	
13,787.0	89.92	270.51	10,674.0	6,959.0	107.4	-3,050.5	796,365.58	567,064.19	3,050.94	0.79	
13,881.0	90.03	268.42	10,674.1	6,959.1	106.5	-3,144.4	796,271.59	567,063.32	3,144.93	2.23	
13,976.0	90.64	266.08	10,673.5	6,958.5	101.9	-3,239.3	796,176.71	567,058.76	3,239.79	2.55	
14,070.0	93.05	264.82	10,670.5	6,955.5	94.5	-3,333.0	796,083.06	567,051.31	3,333.39	2.89	
14,165.0	95.07	265.28	10,663.8	6,948.8	86.3	-3,427.4	795,988.66	567,043.13	3,427.76	2.18	
14,259.0	98.03	266.30	10,653.1	6,938.1	79.5	-3,520.5	795,895.54	567,036.27	3,520.84	3.33	
14,354.0	98.77	267.01	10,639.2	6,924.2	74.0	-3,614.3	795,801.72	567,030.79	3,614.64	1.07	
14,448.0	99.29	267.35	10,624.4	6,909.4	69.4	-3,707.0	795,708.99	567,026.22	3,707.33	0.66	
14,542.0	99.97	267.55	10,608.7	6,893.7	65.3	-3,799.6	795,616.41	567,022.10	3,799.90	0.75	
14,636.0	100.66	267.72	10,591.9	6,876.9	61.5	-3,892.0	795,524.01	567,018.28	3,892.28	0.76	
14,746.0	102.90	267.90	10,569.4	6,854.4	57.3	-3,999.6	795,416.41	567,014.17	3,999.85	2.04	
14,840.0	103.08	272.13	10,548.3	6,833.3	57.4	-4,091.2	795,324.84	567,014.19	4,091.42	4.39	
14,934.0	96.36	274.53	10,532.4	6,817.4	62.8	-4,183.6	795,232.41	567,019.59	4,183.88	7.58	
15,028.0	92.41	273.91	10,525.2	6,810.2	69.7	-4,277.1	795,138.96	567,026.48	4,277.37	4.25	
15,122.0	88.63	273.07	10,524.4	6,809.4	75.4	-4,370.9	795,045.15	567,032.20	4,371.20	4.12	
15,216.0	89.50	274.13	10,525.9	6,810.9	81.3	-4,464.7	794,951.35	567,038.10	4,465.03	1.46	
15,311.0	89.58	270.76	10,526.7	6,811.7	85.3	-4,559.6	794,856.46	567,042.15	4,559.94	3.55	



Morcor Engineering Morcor Standard Plan

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Wellbore:	Igloo 19-24 State Fed Com 13H	Survey Calculation Method:	Minimum Curvature
Design:	Igloo 19-24 State Fed Com 13H	Database:	EDM 5000.1 Single User Db

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)
15,405.0	90.95	270.59	10,526.2	6,811.2	86.4	-4,653.6	794,762.47	567,043.26	4,653.94	1.47
15,499.0	89.52	272.17	10,525.9	6,810.9	88.7	-4,747.5	794,668.50	567,045.53	4,747.91	2.27
15,594.0	89.78	273.34	10,526.4	6,811.4	93.3	-4,842.4	794,573.61	567,050.09	4,842.82	1.26
15,689.0	90.78	273.73	10,526.0	6,811.0	99.1	-4,937.2	794,478.80	567,055.95	4,937.66	1.13
15,783.0	91.65	271.85	10,524.0	6,809.0	103.7	-5,031.1	794,384.93	567,060.52	5,031.55	2.20
15,877.0	90.03	270.95	10,522.6	6,807.6	106.0	-5,125.1	794,290.98	567,062.82	5,125.52	1.97
15,971.0	90.00	270.79	10,522.6	6,807.6	107.4	-5,219.0	794,196.99	567,064.25	5,219.51	0.17
16,065.0	90.62	271.62	10,522.1	6,807.1	109.4	-5,313.0	794,103.01	567,066.22	5,313.50	1.10
16,159.0	89.86	270.66	10,521.7	6,806.7	111.3	-5,407.0	794,009.03	567,068.09	5,407.48	1.30
16,253.0	89.69	268.56	10,522.0	6,807.0	110.6	-5,501.0	793,915.04	567,067.45	5,501.47	2.24
16,347.0	90.67	268.04	10,521.7	6,806.7	107.8	-5,595.0	793,821.08	567,064.67	5,595.41	1.18
16,442.0	89.55	268.70	10,521.6	6,806.6	105.1	-5,689.9	793,726.12	567,061.96	5,690.36	1.37
16,536.0	89.75	269.00	10,522.1	6,807.1	103.3	-5,783.9	793,632.14	567,060.08	5,784.33	0.38
16,630.0	90.62	269.52	10,521.8	6,806.8	102.0	-5,877.9	793,538.15	567,058.86	5,878.31	1.08
16,724.0	89.44	268.60	10,521.8	6,806.8	100.5	-5,971.9	793,444.17	567,057.32	5,972.29	1.59
16,819.0	89.83	268.43	10,522.4	6,807.4	98.0	-6,066.8	793,349.20	567,054.86	6,067.24	0.45
16,913.0	90.62	268.82	10,522.0	6,807.0	95.8	-6,160.8	793,255.23	567,052.60	6,161.20	0.94
17,007.0	88.82	268.88	10,522.5	6,807.5	93.9	-6,254.8	793,161.26	567,050.72	6,255.16	1.92
17,102.0	89.80	270.29	10,523.6	6,808.6	93.2	-6,349.8	793,066.27	567,050.03	6,350.15	1.81
17,196.0	87.84	269.20	10,525.6	6,810.6	92.8	-6,443.7	792,972.30	567,049.61	6,444.12	2.39
17,290.0	87.79	268.75	10,529.1	6,814.1	91.1	-6,537.7	792,878.38	567,047.93	6,538.02	0.48
17,385.0	87.76	268.28	10,532.8	6,817.8	88.6	-6,632.6	792,783.48	567,045.47	6,632.91	0.50
17,479.0	90.36	268.07	10,534.4	6,819.4	85.7	-6,726.5	792,689.55	567,042.48	6,726.82	2.77
17,573.0	91.23	268.62	10,533.1	6,818.1	82.9	-6,820.4	792,595.60	567,039.76	6,820.76	1.09
17,667.0	92.60	268.79	10,529.9	6,814.9	80.8	-6,914.4	792,501.68	567,037.64	6,914.67	1.47
17,762.0	91.26	268.79	10,526.7	6,811.7	78.8	-7,009.3	792,406.76	567,035.63	7,009.58	1.41
17,856.0	90.25	269.83	10,525.5	6,810.5	77.7	-7,103.3	792,312.77	567,034.50	7,103.56	1.54



Morcor Engineering

Morcor Standard Plan

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Site:	Igloo 19-24 State Fed Com 13H	MD Reference:	WELL @ 3715.0usft (Original Well Elev)
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Wellbore:	Igloo 19-24 State Fed Com 13H	Survey Calculation Method:	Minimum Curvature
Design:	Igloo 19-24 State Fed Com 13H	Database:	EDM 5000.1 Single User Db

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)
17,951.0	90.59	269.79	10,524.8	6,809.8	77.4	-7,198.3	792,217.78	567,034.19	7,198.55	0.36
18,045.0	92.27	269.52	10,522.4	6,807.4	76.8	-7,292.2	792,123.81	567,033.62	7,292.51	1.81
18,140.0	90.36	268.55	10,520.3	6,805.3	75.2	-7,387.2	792,028.86	567,032.02	7,387.46	2.25
18,234.0	92.02	268.67	10,518.3	6,803.3	72.9	-7,481.1	791,934.91	567,029.74	7,481.39	1.77
18,328.0	93.17	269.17	10,514.1	6,799.1	71.2	-7,575.0	791,841.02	567,027.97	7,575.27	1.33
18,422.0	91.57	269.18	10,510.2	6,795.2	69.8	-7,668.9	791,747.11	567,026.62	7,669.17	1.70
18,516.0	92.18	269.41	10,507.1	6,792.1	68.6	-7,762.9	791,653.17	567,025.46	7,763.10	0.69
18,610.0	94.12	269.44	10,501.9	6,786.9	67.7	-7,856.7	791,559.32	567,024.52	7,856.95	2.06
18,704.0	92.52	269.61	10,496.5	6,781.5	66.9	-7,950.5	791,465.49	567,023.74	7,950.78	1.71
18,798.0	92.80	270.36	10,492.1	6,777.1	66.9	-8,044.4	791,371.59	567,023.72	8,044.67	0.85
18,846.0	93.19	270.36	10,489.6	6,774.6	67.2	-8,092.4	791,323.66	567,024.02	8,092.61	0.81
18,913.0	93.19	270.36	10,485.9	6,770.9	67.6	-8,159.3	791,256.76	567,024.44	8,159.51	0.00

Checked By: _____ Approved By: _____ Date: _____

Submit 1 Copy To Appropriate District Office
District I – (575) 393-6161
 1625 N. French Dr., Hobbs, NM 88240
District II – (575) 748-1283
 811 S. First St., Artesia, NM 88210
District III – (505) 334-6178
 1000 Rio Brazos Rd., Aztec, NM 87410
District IV – (505) 476-3460
 1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
 Energy, Minerals and Natural Resources

Form C-103
 Revised July 18, 2013

OIL CONSERVATION DIVISION
 1220 South St. Francis Dr.
 Santa Fe, NM 87505

WELL API NO. 30-025-46411
5. Indicate Type of Lease STATE ☒ FEE ☐
6. State Oil & Gas Lease No.
7. Lease Name or Unit Agreement Name Igloo 19-24 State Fed Com
8. Well Number 13H
9. OGRID Number 249099
10. Pool name or Wildcat

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)	
1. Type of Well: Oil Well ☒ Gas Well ☐ Other ☐	
2. Name of Operator Caza Oil and Gas, Inc	
3. Address of Operator 200 N. Lorraine St #1550., Midland, TX 79701	
4. Well Location Unit Letter O ; 1620 feet from the South line and 2364 feet from the East line Section 19 Township 20S Range 35E NMPM County Lea	
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3693'GR	

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐	CHANGE PLANS ☐	COMMENCE DRILLING OPNS. ☐	P AND A ☐
PULL OR ALTER CASING ☐	MULTIPLE COMPL ☐	CASING/CEMENT JOB ☐	
DOWNHOLE COMMINGLE ☐			
CLOSED-LOOP SYSTEM ☐			
OTHER: ☒		OTHER: ☒	

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

2/10/2021 - Production casing was perf'd from 11,106'MD - 18,805'MD with 0.42" perf size and 8 shots per foot. The well was fracked with 21,401,525lbs of sand.

Spud Date:

12/16/2019

Rig Release Date:

11/25/2020

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

SIGNATURE

TITLE

Engineer

DATE

5/18/2021

Type or print name

Steve Morris

E-mail address:

steve.morris@morcoreengineering.com

PHONE:

985-415-9729

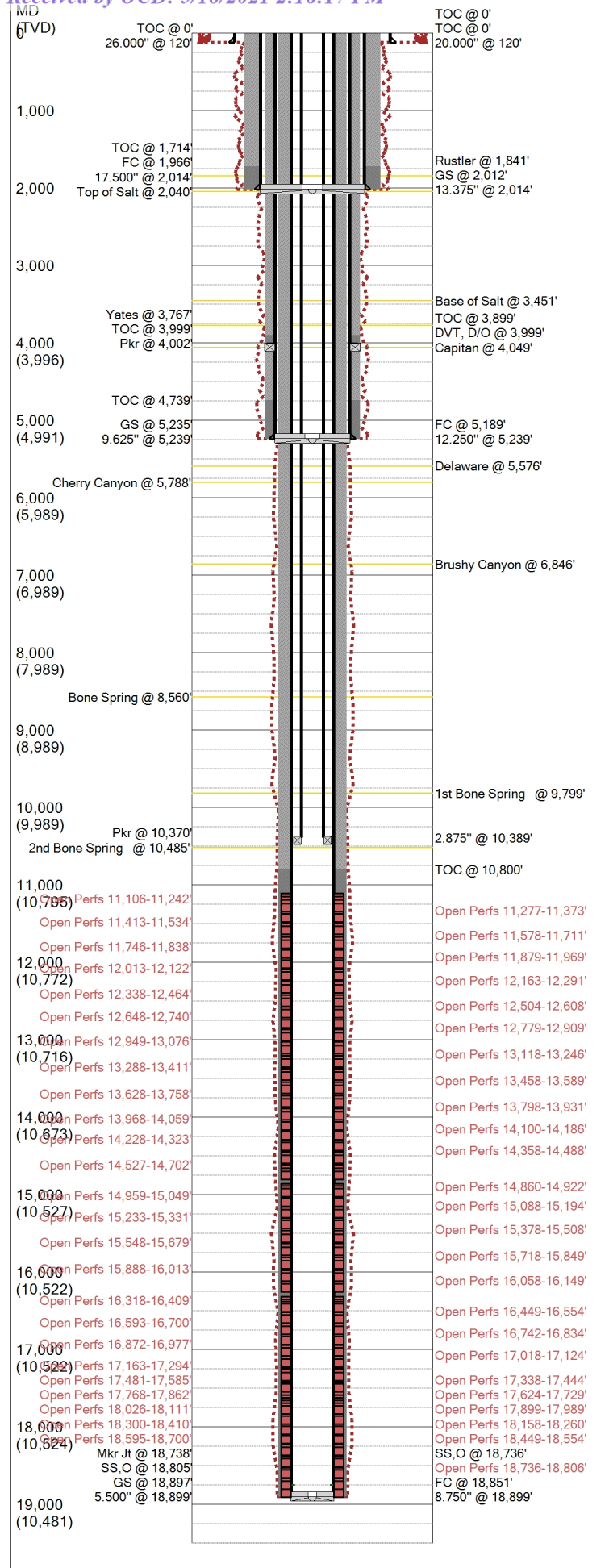
For State Use Only

APPROVED BY:

TITLE

DATE

Conditions of Approval (if any):



Last Updated: 3/17/2021 04:23 AM

Field Name			Lease Name			Well No.		
Antelope Ridge			Igloo 19-24 State Fed Com			13H		
County			State			API No.		
Lea			New Mexico			30-025-46480		
Version		Version Tag						
1		Completed						
GL (ft)	KB (ft)	Section	Township/Block			Range/Survey		
3,693.0	3,715.0	19	20S			35E		
Operator			Well Status		Latitude		Longitude	
Caza Operating			Completed		32.55583021		-103.49570978	
Dist. N/S (ft)	N/S Line	Dist. E/W (ft)	E/W Line		Footage From			
1620	FSL	2364	FEL		SECTION			
Prop Num				Spud Date		Comp. Date		
313780				12/17/2019		2/11/2021		
Additional Information								
OGRID		Pool Name and Code		Well Type		Dedicated Acres		
249099		Lea Bone Spring; South (37580)		Hz, Oil		240.06		
Prepared By			Updated By			Last Updated		
Steve Morris			Steve Morris			3/17/2021 4:23 AM		
Hole Summary								
Date	Diam. (in)	Top (MD ft)	Bottom (MD ft)	Comments				
	26.000	0	120					
	17.500	120	2,014					
	12.250	2,014	5,239					
	8.750	5,239	18,899					
Tubular Summary								
Date	Description		O.D. (in)	Wt (lb/ft)	Grade	Top (MD ft)	Bottom (MD ft)	
	Conductor Casing		20.000	94.00	H40	0	120	
	Surface Casing		13.375	54.50	J55	0	2,014	
	Intermediate Casing		9.625	40.00	HCL80	0	5,239	
	Production Casing		5.500	20.00	P110	0	18,899	
	Tubing		2.875	6.50	L80	0	10,389	
Casing Cement Summary								
C	Date	No. Sx	Csg. O.D. (in)	Top (MD ft)	Bottom (MD ft)	Comments		
		1,090	13.375	0	1,714	Circulate 330sx (116bbls) to surface		
		315	13.375	1,714	2,014			
		1,600	9.625	0	3,899	Circulate 197sx (83bbls) to surface		
		150	9.625	3,899	3,999			
		340	9.625	3,999	4,739			
		210	9.625	4,739	5,239			
		1,000	5.500	0	10,800			
		1,600	5.500	10,800	18,899			
Tools/Problems Summary								
Date	Tool Type		O.D. (in)	I.D. (in)	Top (MD ft)	Bottom (MD ft)		
	FC		13.375	0.000	1,966	0		
	GS		13.375	0.000	2,012	0		
	DVT, D/O		9.625	0.000	3,999	0		
	Pkr		12.250	9.625	4,002	0		
	FC		9.625	0.000	5,189			

Last Updated: 3/17/2021 04:23 AM

Date	Tool Type	O.D. (in)	I.D. (in)	Top (MD ft)	Bottom (MD ft)
	GS	9.625	0.000	5,235	0
	Pkr	4.890	2.875	10,370	0
	SS,O	5.500	0.000	18,736	18,738
	Mkr Jt	5.500	0.000	18,738	18,760
	SS,O	5.500	0.000	18,805	18,806
	FC	5.500	0.000	18,851	0
	GS	5.500	0.000	18,897	0

Perforation Summary

C	Date	Perf. Status	Formation	OA Top (MD ft)	OA Bottom (MD ft)
		Open	2nd Bone Spring	11106	11,242
		Open	2nd Bone Spring	11277	11,373
		Open	2nd Bone Spring	11413	11,534
		Open	2nd Bone Spring	11578	11,711
		Open	2nd Bone Spring	11746	11,838
		Open	2nd Bone Spring	11879	11,969
		Open	2nd Bone Spring	12013	12,122
		Open	2nd Bone Spring	12163	12,291
		Open	2nd Bone Spring	12338	12,464
		Open	2nd Bone Spring	12504	12,608
		Open	2nd Bone Spring	12648	12,740
		Open	2nd Bone Spring	12779	12,909
		Open	2nd Bone Spring	12949	13,076
		Open	2nd Bone Spring	13118	13,246
		Open	2nd Bone Spring	13288	13,411
		Open	2nd Bone Spring	13458	13,589
		Open	2nd Bone Spring	13628	13,758
		Open	2nd Bone Spring	13798	13,931
		Open	2nd Bone Spring	13968	14,059
		Open	2nd Bone Spring	14100	14,186
		Open	2nd Bone Spring	14228	14,323
		Open	2nd Bone Spring	14358	14,488
		Open	2nd Bone Spring	14527	14,702
		Open	2nd Bone Spring	14860	14,922
		Open	2nd Bone Spring	14959	15,049
		Open	2nd Bone Spring	15088	15,194
		Open	2nd Bone Spring	15233	15,331
		Open	2nd Bone Spring	15378	15,508
		Open	2nd Bone Spring	15548	15,679
		Open	2nd Bone Spring	15718	15,849
		Open	2nd Bone Spring	15888	16,013
		Open	2nd Bone Spring	16058	16,149
		Open	2nd Bone Spring	16318	16,409
		Open	2nd Bone Spring	16449	16,554
		Open	2nd Bone Spring	16593	16,700
		Open	2nd Bone Spring	16742	16,834
		Open	2nd Bone Spring	16872	16,977
		Open	2nd Bone Spring	17018	17,124
		Open	2nd Bone Spring	17163	17,294
		Open	2nd Bone Spring	17338	17,444
		Open	2nd Bone Spring	17481	17,585
		Open	2nd Bone Spring	17624	17,729
		Open	2nd Bone Spring	17768	17,862
		Open	2nd Bone Spring	17899	17,989

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C	Date	Perf. Status	Formation	OA Top (MD ft)	OA Bottom (MD ft)
		Open	2nd Bone Spring	18026	18,111
		Open	2nd Bone Spring	18158	18,260
		Open	2nd Bone Spring	18300	18,410
		Open	2nd Bone Spring	18449	18,554
		Open	2nd Bone Spring	18595	18,700
		Open	2nd Bone Spring	18736	18,806

Formation Tops Summary

Formation	Top (TVD ft)	Comments
Rustler	1,841	
Top of Salt	2,040	
Base of Salt	3,451	
Yates	3,767	
Capitan	4,049	
Delaware	5,576	
Cherry Canyon	5,788	
Brushy Canyon	6,846	
Bone Spring	8,560	
1st Bone Spring	9,799	
2nd Bone Spring	10,485	

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Field Name		Lease Name		Well No.	County		State		API No.	
Antelope Ridge		Igloo 19-24 State Fed Com		13H	Lea		New Mexico		30025464800000	
Version	Version Tag				Spud Date		Comp. Date		GL (ft)	KB (ft)
1	Completed				12/17/2019		2/11/2021		3,693.0	3,715.0
Section	Township/Block		Range/Survey		Dist. N/S (ft)	N/S Line	Dist. E/W (ft)	E/W Line	Footage From	
19	20S		35E		1,620	FSL	2,364	FEL	SECTION	
Operator			Well Status			Latitude		Longitude		Prop Num
Caza Operating			Completed			32.55583021		-103.49570978		313780
OGRID		Pool Name and Code			Well Type				Dedicated Acres	
249099		Lea Bone Spring; South (37580)			Hz, Oil				240.06	
Last Updated		Prepared By				Updated By				
03/17/2021 4:23 AM		Steve Morris				Steve Morris				

Additional Information

Hole Summary

Date	Diam. (in)	Top (MD ft)	Bottom (MD ft)	Comments
	26.000	0	120	
	17.500	120	2,014	
	12.250	2,014	5,239	
	8.750	5,239	18,899	

Tubular Summary

Date	Description	No. Jts	O.D. (in)	Wt (lb/ft)	Grade	Coupling	Top (MD ft)	Bottom (MD ft)	Comments
	Conductor Casing		20.000	94.00	H40		0	120	
	Surface Casing	44	13.375	54.50	J55	STC	0	2,014	
	Intermediate Casing	115	9.625	40.00	HCL80	BTC	0	5,239	
	Production Casing	425	5.500	20.00	P110	BHT	0	18,899	
	Tubing		2.875	6.50	L80		0	10,389	

Casing Cement Summary

C	Date	No. Sx	Yield (ft3/sk)	Vol. (ft3)	Csg. O.D. (in)	Top (MD ft)	Bottom (MD ft)	Description	Comments
		1,090	1.97	2,147	13.375	0	1,714	Class C Neat 12.9ppg	Circulate 330sx (116bbls) to surface
		315	1.32	416	13.375	1,714	2,014	Class C 14.8ppg	
		1,600	2.36	3,776	9.625	0	3,899	Class C 11.9ppg 50/50 Lite + 5% Salt + 10% Gel + 0.2% Retarder + 0.1% Anti-Settling + 3# Extender + 0.125# Celloflake + 3# KolSeal + 0.4# Defoamer	Circulate 197sx (83bbls) to surface
		150	1.32	198	9.625	3,899	3,999	Class C 14.8ppg	
		340	2.36	802	9.625	3,999	4,739	Class C 11.9ppg 50/50 Lite + 5% Salt + 10% Gel + 0.2% Retarder + 0.1% Anti-Settling + 3# Extender + 0.125# Celloflake + 3# KolSeal + 0.4# Defoamer	
		210	1.32	277	9.625	4,739	5,239	Class C 14.8ppg	
		1,000	3.34	3,339	5.500	0	10,800	Class H 11ppg Class C 50/50 PLite + 5% Salt + 12% Gel + 0.4% Anti-Settling + 0.6% Retarder + 0.8% PF79	
		1,600	1.33	2,128	5.500	10,800	18,899	14.2ppg Class H 50/50 POZ + 5% Salt + 2% Gel + 0.4% Fluid Loss + 0.2% Retarder + 0.2% Anti-Settling	

Tools/Problems Summary

Date	Tool Type	O.D. (in)	I.D. (in)	Top (MD ft)	Bottom (MD ft)	Description	Comments
	Float Collar	13.375	0.000	1,966	0		
	Guide Shoe	13.375	0.000	2,012	0		
	DV tool (drilled out)	9.625	0.000	3,999	0		

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Date	Tool Type	O.D. (in)	I.D. (in)	Top (MD ft)	Bottom (MD ft)	Description	Comments
	Packer	12.250	9.625	4,002	0		
	Float Collar	9.625	0.000	5,189	0		
	Guide Shoe	9.625	0.000	5,235	0		
	Packer	4.890	2.875	10,370	0		
	Sliding Sleeve (open)	5.500	0.000	18,736	18,738	Toe Sleeve	
	Marker Joint	5.500	0.000	18,738	18,760		
	Sliding Sleeve (open)	5.500	0.000	18,805	18,806	Toe Sleeve	
	Float Collar	5.500	0.000	18,851	0		
	Guide Shoe	5.500	0.000	18,897	0		

Perforation Summary

C	Date	Perf. Status	Formation	Closed Date	Comments
		Open	2nd Bone Spring		Stage 50 - 423,700lbs sand
Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
11106	11,107	8	8	60	
11148	11,149	8	8	60	
11190	11,191	8	8	60	
11241	11,242	8	8	60	
C	Date	Perf. Status	Formation	Closed Date	Comments
		Open	2nd Bone Spring		Stage 49 - 423,500lbs sand
Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
11277	11,278	8	8	60	
11298	11,299	8	8	60	
11323	11,324	8	8	60	
11372	11,373	8	8	60	
C	Date	Perf. Status	Formation	Closed Date	Comments
		Open	2nd Bone Spring		Stage 48 - 424,900lbs sand
Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
11413	11,414	8	8	60	
11450	11,451	8	8	60	
11495	11,496	8	8	60	
11533	11,534	8	8	60	
C	Date	Perf. Status	Formation	Closed Date	Comments
		Open	2nd Bone Spring		Stage 47 - 430-750lbs sand
Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
11578	11,579	8	8	60	
11618	11,619	8	8	60	
11667	11,668	8	8	60	
11710	11,711	8	8	60	
C	Date	Perf. Status	Formation	Closed Date	Comments
		Open	2nd Bone Spring		Stage 46 - 425,650lbs sand
Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
11746	11,747	8	8	60	
11781	11,782	8	8	60	
11812	11,813	8	8	60	
11837	11,838	8	8	60	
C	Date	Perf. Status	Formation	Closed Date	Comments
		Open	2nd Bone Spring		Stage 45 - 425,500lbs sand
Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
11879	11,880	8	8	60	
11908	11,909	8	8	60	

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C	Date	Perf. Status	Formation	Closed Date	Comments
Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
11938	11,939	8	8	60	
11968	11,969	8	8	60	
C	Date	Perf. Status	Formation	Closed Date	Comments
		Open	2nd Bone Spring		Stage 44 - 425,900lbs sand
Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
12013	12,014	8	8	60	
12046	12,047	8	8	60	
12085	12,086	8	8	60	
12121	12,122	8	8	60	
C	Date	Perf. Status	Formation	Closed Date	Comments
		Open	2nd Bone Spring		Stage 43 - 426,100lbs sand
Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
12163	12,164	8	8	60	
12205	12,206	8	8	60	
12247	12,248	8	8	60	
12290	12,291	8	8	60	
C	Date	Perf. Status	Formation	Closed Date	Comments
		Open	2nd Bone Spring		Stage 42 - 425,600lbs sand
Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
12338	12,339	8	8	60	
12377	12,378	8	8	60	
12420	12,421	8	8	60	
12463	12,464	8	8	60	
C	Date	Perf. Status	Formation	Closed Date	Comments
		Open	2nd Bone Spring		Stage 41 - 426,010lbs sand
Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
12504	12,505	8	8	60	
12540	12,541	8	8	60	
12573	12,574	8	8	60	
12607	12,608	8	8	60	
C	Date	Perf. Status	Formation	Closed Date	Comments
		Open	2nd Bone Spring		Stage 40 - 426,200lbs sand
Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
12648	12,649	8	8	60	
12678	12,679	8	8	60	
12712	12,713	8	8	60	
12739	12,740	8	8	60	
C	Date	Perf. Status	Formation	Closed Date	Comments
		Open	2nd Bone Spring		Stage 39 - 425,880lbs sand
Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
12779	12,780	8	8	60	
12822	12,823	8	8	60	
12865	12,866	8	8	60	
12908	12,909	8	8	60	
C	Date	Perf. Status	Formation	Closed Date	Comments
		Open	2nd Bone Spring		Stage 38 - 426,000lbs sand
Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
12949	12,950	8	8	60	
12995	12,996	8	8	60	

C	Date	Perf. Status	Formation		Closed Date	Comments
Top (MD ft)		Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
13025		13,036	8	8	60	
13075		13,076	8	8	60	
C	Date	Perf. Status	Formation		Closed Date	Comments
		Open	2nd Bone Spring			Stage 37 - 425,960lbs sand
Top (MD ft)		Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
13118		13,119	8	8	60	
13161		13,162	8	8	60	
13205		13,206	8	8	60	
13245		13,246	8	8	60	
C	Date	Perf. Status	Formation		Closed Date	Comments
		Open	2nd Bone Spring			Stage 36 - 425,900lbs sand
Top (MD ft)		Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
13288		13,289	8	8	60	
13331		13,332	8	8	60	
13371		13,372	8	8	60	
13410		13,411	8	8	60	
C	Date	Perf. Status	Formation		Closed Date	Comments
		Open	2nd Bone Spring			Stage 35 - 426,880lbs sand
Top (MD ft)		Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
13458		13,459	8	8	60	
13501		13,502	8	8	60	
13548		13,549	8	8	60	
13588		13,589	8	8	60	
C	Date	Perf. Status	Formation		Closed Date	Comments
		Open	2nd Bone Spring			Stage 34 - 425,300lbs sand
Top (MD ft)		Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
13628		13,629	8	8	60	
13671		13,672	8	8	60	
13716		13,717	8	8	60	
13757		13,758	8	8	60	
C	Date	Perf. Status	Formation		Closed Date	Comments
		Open	2nd Bone Spring			Stage 33 - 424,580lbs sand
Top (MD ft)		Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
13798		13,799	8	8	60	
13842		13,843	8	8	60	
13884		13,885	8	8	60	
13930		13,931	8	8	60	
C	Date	Perf. Status	Formation		Closed Date	Comments
		Open	2nd Bone Spring			Stage 32 - 425,320lbs sand
Top (MD ft)		Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
13968		13,969	8	8	60	
13998		13,999	8	8	60	
14023		14,024	8	8	60	
14058		14,059	8	8	60	
C	Date	Perf. Status	Formation		Closed Date	Comments
		Open	2nd Bone Spring			Stage 31 - 425,050lbs sand
Top (MD ft)		Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
14100		14,101	8	8	60	
14128		14,129	8	8	60	

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C	Date	Perf. Status	Formation		Closed Date	Comments
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	14158	14,159	8	8	60	
	14185	14,186	8	8	60	
C	Date	Perf. Status	Formation		Closed Date	Comments
		Open	2nd Bone Spring			Stage 30 - 428,535lbs sand
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	14228	14,229	8	8	60	
	14253	14,254	8	8	60	
	14288	14,289	8	8	60	
	14322	14,323	8	8	60	
C	Date	Perf. Status	Formation		Closed Date	Comments
		Open	2nd Bone Spring			Stage 29 - 425,700lbs sand
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	14358	14,359	8	8	60	
	14403	14,404	8	8	60	
	14445	14,446	8	8	60	
	14487	14,488	8	8	60	
C	Date	Perf. Status	Formation		Closed Date	Comments
		Open	2nd Bone Spring			Stage 28 - 425,700lbs sand
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	14527	14,528	8	8	60	
	14566	14,567	8	8	60	
	14617	14,618	8	8	60	
	14658	14,659	8	8	60	
	14701	14,702	8	8	60	
C	Date	Perf. Status	Formation		Closed Date	Comments
		Open	2nd Bone Spring			Stage 27 - 424,875lbs sand
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	14860	14,861	8	8	60	
	14887	14,888	8	8	60	
	14921	14,922	8	8	60	
C	Date	Perf. Status	Formation		Closed Date	Comments
		Open	2nd Bone Spring			Stage 26 - 424,720lbs sand
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	14959	14,960	8	8	60	
	14988	14,989	8	8	60	
	15022	15,023	8	8	60	
	15048	15,049	8	8	60	
C	Date	Perf. Status	Formation		Closed Date	Comments
		Open	2nd Bone Spring			Stage 25 - 425,200lbs sand
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	15088	15,089	8	8	60	
	15125	15,126	8	8	60	
	15158	15,159	8	8	60	
	15193	15,194	8	8	60	
C	Date	Perf. Status	Formation		Closed Date	Comments
		Open	2nd Bone Spring			Stage 24 - 425,170lbs sand
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	15233	15,234	8	8	60	
	15262	15,263	8	8	60	

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C	Date	Perf. Status	Formation		Closed Date	Comments
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	15303	15,304	8	8	60	
	15330	15,331	8	8	60	
C	Date	Perf. Status	Formation		Closed Date	Comments
		Open	2nd Bone Spring			Stage 23 - 425,170lbs sand
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	15378	15,379	8	8	60	
	15421	15,422	8	8	60	
	15465	15,466	8	8	60	
	15507	15,508	8	8	60	
C	Date	Perf. Status	Formation		Closed Date	Comments
		Open	2nd Bone Spring			Stage 22 - 425,400lbs sand
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	15548	15,549	8	8	60	
	15591	15,592	8	8	60	
	15630	15,631	8	8	60	
	15678	15,679	8	8	60	
C	Date	Perf. Status	Formation		Closed Date	Comments
		Open	2nd Bone Spring			Stage 21 - 425,600lbs sand
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	15718	15,719	8	8	60	
	15767	15,768	8	8	60	
	15807	15,808	8	8	60	
	15848	15,849	8	8	60	
C	Date	Perf. Status	Formation		Closed Date	Comments
		Open	2nd Bone Spring			Stage 20 - 425,600lbs sand
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	15888	15,889	8	8	60	
	15931	15,932	8	8	60	
	15976	15,977	8	8	60	
	16012	16,013	8	8	60	
C	Date	Perf. Status	Formation		Closed Date	Comments
		Open	2nd Bone Spring			Stage 19 - 426,500lbs sand
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	16058	16,059	8	8	60	
	16087	16,088	8	8	60	
	16119	16,120	8	8	60	
	16148	16,149	8	8	60	
C	Date	Perf. Status	Formation		Closed Date	Comments
		Open	2nd Bone Spring			Stage 18 - 426,350lbs sand
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	16318	16,319	8	8	60	
	16348	16,349	8	8	60	
	16378	16,379	8	8	60	
	16408	16,409	8	8	60	
C	Date	Perf. Status	Formation		Closed Date	Comments
		Open	2nd Bone Spring			Stage 17 - 426,250lbs sand
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	16449	16,450	8	8	60	
	16483	16,484	8	8	60	

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C	Date	Perf. Status	Formation		Closed Date	Comments
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	16520	16,521	8	8	60	
	16553	16,554	8	8	60	
C	Date	Perf. Status	Formation		Closed Date	Comments
		Open	2nd Bone Spring			Stage 16 - 427,200lbs sand
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	16593	16,594	8	8	60	
	16628	16,629	8	8	60	
	16663	16,664	8	8	60	
	16699	16,700	8	8	60	
C	Date	Perf. Status	Formation		Closed Date	Comments
		Open	2nd Bone Spring			Stage 15 - 425,565lbs sand
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	16742	16,743	8	8	60	
	16769	16,770	8	8	60	
	16802	16,803	8	8	60	
	16833	16,834	8	8	60	
C	Date	Perf. Status	Formation		Closed Date	Comments
		Open	2nd Bone Spring			Stage 14 - 426,180lbs sand
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	16872	16,873	8	8	60	
	16908	16,909	8	8	60	
	16943	16,944	8	8	60	
	16976	16,977	8	8	60	
C	Date	Perf. Status	Formation		Closed Date	Comments
		Open	2nd Bone Spring			Stage 13 - 425,800lbs sand
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	17018	17,019	8	8	60	
	17055	17,056	8	8	60	
	17088	17,089	8	8	60	
	17123	17,124	8	8	60	
C	Date	Perf. Status	Formation		Closed Date	Comments
		Open	2nd Bone Spring			Stage 12 - 426,060lbs sand
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	17163	17,164	8	8	60	
	17206	17,207	8	8	60	
	17250	17,251	8	8	60	
	17293	17,294	8	8	60	
C	Date	Perf. Status	Formation		Closed Date	Comments
		Open	2nd Bone Spring			Stage 11 - 426,300lbs sand
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	17338	17,339	8	8	60	
	17376	17,377	8	8	60	
	17417	17,418	8	8	60	
	17443	17,444	8	8	60	
C	Date	Perf. Status	Formation		Closed Date	Comments
		Open	2nd Bone Spring			Stage 10 - 425,240lbs sand
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	17481	17,482	8	8	60	
	17514	17,515	8	8	60	

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C	Date	Perf. Status	Formation		Closed Date	Comments
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	17548	17,549	8	8	60	
	17584	17,585	8	8	60	
C	Date	Perf. Status	Formation		Closed Date	Comments
		Open	2nd Bone Spring			Stage 9 - 426,100lbs sand
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	17624	17,625	8	8	60	
	17658	17,659	8	8	60	
	17693	17,694	8	8	60	
	17728	17,729	8	8	60	
C	Date	Perf. Status	Formation		Closed Date	Comments
		Open	2nd Bone Spring			Stage 8 - 425,450lbs sand
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	17768	17,769	8	8	60	
	17799	17,800	8	8	60	
	17827	17,828	8	8	60	
	17861	17,862	8	8	60	
C	Date	Perf. Status	Formation		Closed Date	Comments
		Open	2nd Bone Spring			Stage 7 - 427,490lbs sand
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	17899	17,900	8	8	60	
	17929	17,930	8	8	60	
	17959	17,960	8	8	60	
	17988	17,989	8	8	60	
C	Date	Perf. Status	Formation		Closed Date	Comments
		Open	2nd Bone Spring			Stage 6 - 426,900lbs sand
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	18026	18,027	8	8	60	
	18058	18,059	8	8	60	
	18083	18,084	8	8	60	
	18110	18,111	8	8	60	
C	Date	Perf. Status	Formation		Closed Date	Comments
		Open	2nd Bone Spring			Stage 5 - 427,300lbs sand
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	18158	18,159	8	8	60	
	18196	18,197	8	8	60	
	18228	18,229	8	8	60	
	18259	18,260	8	8	60	
C	Date	Perf. Status	Formation		Closed Date	Comments
		Open	2nd Bone Spring			Stage 4 - 423,430lbs sand
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	18300	18,301	8	8	60	
	18336	18,337	8	8	60	
	18373	18,374	8	8	60	
	18409	18,410	8	8	60	
C	Date	Perf. Status	Formation		Closed Date	Comments
		Open	2nd Bone Spring			Stage 3 - 423,430lbs sand
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	18449	18,450	8	8	60	
	18483	18,484	8	8	60	

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C	Date	Perf. Status	Formation	Closed Date	Comments
Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
18523	18,524	8	8	60	
18553	18,554	8	8	60	
C	Date	Perf. Status	Formation	Closed Date	Comments
		Open	2nd Bone Spring		Stage 2 - 426180lbs sand
Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
18595	18,596	8	8	60	
18629	18,630	8	8	60	
18665	18,666	8	8	60	
18699	18,700	8	8	60	
C	Date	Perf. Status	Formation	Closed Date	Comments
		Open	2nd Bone Spring		Stage 1 - 438,040lbs sand
Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
18736	18,737	8	8	60	
18805	18,806	8	8	60	

Formation Top Summary

Formation Name	Top(TVD ft)	Comments
Rustler	1,841	
Top of Salt	2,040	
Base of Salt	3,451	
Yates	3,767	
Capitan	4,049	
Delaware	5,576	
Cherry Canyon	5,788	
Brushy Canyon	6,846	
Bone Spring	8,560	
1st Bone Spring	9,799	
2nd Bone Spring	10,485	

Field Name		Lease Name		Well No.	API No.		Version	Version Tag	
Antelope Ridge		Igloo 19-24 State Fed Com		13H	30025464800000		1	Completed	
Section	Township/Block		Range/Survey	County		State		GL (ft)	KB (ft)
19	20S		35E	Lea		New Mexico		3,693.0	3,715.0
Target N (-S) (ft)		Target E (-W) (ft)		Latitude		Longitude		Operator	Well Status
0		0		32.55583021		-103.49570978		Caza Operating	Completed
Additional Information									

Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Vertical Section (ft)	Coordinate N (-S) (ft)	Coordinate E (-W) (ft)	DLS (deg/100 ft)
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
100.0	0.1	119.5	100.0	-0.1	0.0	0.1	0.07
125.0	0.1	126.1	125.0	-0.1	0.0	0.1	0.05
150.0	0.1	134.7	150.0	-0.1	-0.1	0.1	0.05
175.0	0.1	121.5	175.0	-0.1	-0.1	0.1	0.06
200.0	0.1	179.6	200.0	-0.1	-0.1	0.1	0.25
225.0	0.1	161.3	225.0	-0.1	-0.1	0.1	0.13
250.0	0.1	175.1	250.0	-0.1	-0.2	0.1	0.09
275.0	0.1	193.8	275.0	-0.1	-0.2	0.1	0.12
300.0	0.1	177.8	300.0	-0.1	-0.2	0.1	0.13
325.0	0.1	187.8	325.0	-0.1	-0.3	0.1	0.08
350.0	0.2	196.4	350.0	-0.1	-0.3	0.1	0.25
375.0	0.2	198.3	375.0	-0.1	-0.4	0.1	0.08
400.0	0.2	200.1	400.0	-0.1	-0.5	0.1	0.05
425.0	0.2	203.2	425.0	0.0	-0.6	0.0	0.06
450.0	0.2	194.8	450.0	0.0	-0.6	0.0	0.16
475.0	0.1	182.8	475.0	0.0	-0.7	0.0	0.23
500.0	0.1	197.1	500.0	0.0	-0.7	0.0	0.14
525.0	0.1	183.4	525.0	0.0	-0.8	0.0	0.13
550.0	0.2	173.7	550.0	0.0	-0.8	0.0	0.26
575.0	0.2	180.2	575.0	0.0	-0.9	0.0	0.12
600.0	0.2	183.3	600.0	0.0	-1.0	0.0	0.06
625.0	0.2	192.4	625.0	0.0	-1.1	0.0	0.16
650.0	0.2	193.9	650.0	0.0	-1.2	0.0	0.05
675.0	0.3	200.1	675.0	0.1	-1.3	-0.1	0.19
700.0	0.3	203.5	700.0	0.1	-1.4	-0.1	0.17
725.0	0.3	212.4	725.0	0.2	-1.5	-0.2	0.19
750.0	0.3	214.4	750.0	0.2	-1.7	-0.3	0.13
775.0	0.3	224.1	775.0	0.3	-1.8	-0.3	0.23
800.0	0.3	218.4	800.0	0.4	-1.9	-0.4	0.18
825.0	0.3	213.7	825.0	0.5	-2.0	-0.5	0.10
850.0	0.3	210.7	850.0	0.6	-2.1	-0.6	0.07
875.0	0.3	220.9	875.0	0.7	-2.2	-0.7	0.21
900.0	0.3	219.1	900.0	0.7	-2.3	-0.7	0.05
925.0	0.2	215.2	925.0	0.8	-2.4	-0.8	0.17
950.0	0.3	219.2	950.0	0.9	-2.5	-0.9	0.14
975.0	0.3	209.2	975.0	0.9	-2.6	-1.0	0.26
1,000.0	0.3	198.4	1,000.0	1.0	-2.7	-1.0	0.27
1,025.0	0.3	201.5	1,025.0	1.0	-2.8	-1.1	0.14
1,050.0	0.4	205.7	1,050.0	1.1	-3.0	-1.1	0.22
1,075.0	0.4	202.3	1,075.0	1.2	-3.1	-1.2	0.12
1,100.0	0.4	199.6	1,100.0	1.2	-3.3	-1.2	0.11
1,125.0	0.4	211.2	1,125.0	1.3	-3.4	-1.3	0.33
1,150.0	0.4	215.4	1,150.0	1.4	-3.6	-1.4	0.14
1,175.0	0.4	211.6	1,175.0	1.5	-3.7	-1.5	0.10
1,200.0	0.4	214.7	1,200.0	1.6	-3.8	-1.6	0.18
1,225.0	0.4	224.8	1,225.0	1.7	-4.0	-1.7	0.29
1,250.0	0.4	229.1	1,250.0	1.8	-4.1	-1.8	0.15
1,275.0	0.4	221.5	1,275.0	1.9	-4.2	-2.0	0.30
1,300.0	0.4	222.3	1,300.0	2.1	-4.4	-2.1	0.02
1,325.0	0.4	211.5	1,325.0	2.2	-4.5	-2.2	0.33
1,350.0	0.5	210.9	1,350.0	2.3	-4.7	-2.3	0.12
1,375.0	0.5	216.5	1,375.0	2.4	-4.8	-2.4	0.18
1,400.0	0.5	217.5	1,400.0	2.5	-5.0	-2.5	0.05

Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Vertical Section (ft)	Coordinate N (-S) (ft)	Coordinate E (-W) (ft)	DLS (deg/100 ft)
1,425.0	0.5	227.9	1,425.0	2.6	-5.1	-2.7	0.37
1,450.0	0.5	234.1	1,450.0	2.8	-5.3	-2.8	0.22
1,475.0	0.5	237.3	1,475.0	3.0	-5.4	-3.0	0.19
1,500.0	0.5	240.2	1,500.0	3.2	-5.5	-3.2	0.26
1,525.0	0.5	237.1	1,525.0	3.4	-5.6	-3.4	0.23
1,550.0	0.5	241.2	1,550.0	3.5	-5.7	-3.6	0.28
1,575.0	0.6	239.9	1,575.0	3.8	-5.9	-3.8	0.09
1,600.0	0.6	243.0	1,600.0	4.0	-6.0	-4.0	0.12
1,625.0	0.6	243.6	1,625.0	4.2	-6.1	-4.2	0.02
1,650.0	0.6	234.5	1,650.0	4.4	-6.2	-4.4	0.37
1,675.0	0.7	245.7	1,675.0	4.6	-6.3	-4.7	0.56
1,700.0	0.7	244.8	1,700.0	4.9	-6.5	-4.9	0.09
1,725.0	0.7	245.5	1,725.0	5.2	-6.6	-5.2	0.20
1,750.0	0.8	247.8	1,750.0	5.5	-6.7	-5.5	0.23
1,775.0	0.8	247.2	1,775.0	5.8	-6.9	-5.8	0.09
1,800.0	0.8	246.8	1,800.0	6.1	-7.0	-6.1	0.16
1,825.0	0.7	245.0	1,825.0	6.4	-7.1	-6.4	0.10
1,850.0	0.8	246.2	1,850.0	6.7	-7.2	-6.7	0.10
1,875.0	0.7	247.7	1,875.0	7.0	-7.4	-7.0	0.21
1,900.0	0.7	240.8	1,900.0	7.2	-7.5	-7.3	0.35
1,925.0	0.7	243.5	1,925.0	7.5	-7.7	-7.6	0.13
1,950.0	0.8	241.4	1,950.0	7.8	-7.8	-7.8	0.19
1,975.0	0.7	241.0	1,974.9	8.1	-8.0	-8.1	0.12
2,000.0	0.6	245.9	1,999.9	8.4	-8.1	-8.4	0.57
2,025.0	0.2	252.7	2,024.9	8.5	-8.2	-8.6	1.49
2,050.0	0.2	273.9	2,049.9	8.6	-8.2	-8.7	0.33
2,075.0	0.2	263.1	2,074.9	8.7	-8.2	-8.7	0.19
2,100.0	0.2	263.2	2,099.9	8.8	-8.2	-8.8	0.16
2,125.0	0.3	268.7	2,124.9	8.9	-8.2	-8.9	0.18
2,150.0	0.3	271.6	2,149.9	9.0	-8.2	-9.0	0.07
2,175.0	0.3	270.4	2,174.9	9.1	-8.2	-9.2	0.02
2,200.0	0.3	277.6	2,199.9	9.3	-8.2	-9.3	0.28
2,225.0	0.3	279.3	2,224.9	9.4	-8.2	-9.4	0.28
2,250.0	0.3	280.6	2,249.9	9.5	-8.1	-9.5	0.02
2,275.0	0.2	280.2	2,274.9	9.6	-8.1	-9.6	0.08
2,300.0	0.2	287.6	2,299.9	9.7	-8.1	-9.7	0.20
2,325.0	0.2	272.8	2,324.9	9.8	-8.1	-9.8	0.23
2,350.0	0.2	261.2	2,349.9	9.9	-8.1	-9.9	0.20
2,375.0	0.2	268.6	2,374.9	10.0	-8.1	-10.0	0.13
2,400.0	0.2	265.4	2,399.9	10.1	-8.1	-10.1	0.05
2,425.0	0.2	265.3	2,424.9	10.2	-8.1	-10.2	0.28
2,450.0	0.2	278.2	2,449.9	10.2	-8.1	-10.3	0.20
2,475.0	0.2	271.9	2,474.9	10.3	-8.1	-10.4	0.11
2,500.0	0.2	279.9	2,499.9	10.4	-8.1	-10.4	0.11
2,525.0	0.1	313.6	2,524.9	10.5	-8.1	-10.5	0.40
2,550.0	0.1	332.3	2,549.9	10.5	-8.0	-10.5	0.18
2,575.0	0.2	340.1	2,574.9	10.5	-8.0	-10.6	0.15
2,600.0	0.2	354.6	2,599.9	10.5	-7.9	-10.6	0.17
2,625.0	0.3	353.3	2,624.9	10.6	-7.8	-10.6	0.32
2,650.0	0.3	5.6	2,649.9	10.6	-7.7	-10.6	0.21
2,675.0	0.3	16.5	2,674.9	10.5	-7.6	-10.6	0.20
2,700.0	0.2	15.8	2,699.9	10.5	-7.5	-10.5	0.28
2,725.0	0.2	20.5	2,724.9	10.5	-7.4	-10.5	0.07
2,750.0	0.2	28.0	2,749.9	10.4	-7.3	-10.5	0.16
2,775.0	0.2	14.3	2,774.9	10.4	-7.2	-10.4	0.31
2,800.0	0.2	359.3	2,799.9	10.4	-7.1	-10.4	0.32
2,825.0	0.3	0.7	2,824.9	10.4	-7.0	-10.4	0.16
2,850.0	0.3	10.4	2,849.9	10.4	-6.9	-10.4	0.19
2,875.0	0.4	32.2	2,874.9	10.3	-6.8	-10.4	0.70
2,900.0	0.6	44.5	2,899.9	10.2	-6.6	-10.2	0.87
2,925.0	0.9	46.9	2,924.9	10.0	-6.4	-10.0	1.09
2,950.0	0.9	47.2	2,949.9	9.7	-6.1	-9.7	0.20
2,975.0	1.0	46.6	2,974.9	9.4	-5.9	-9.4	0.28
3,000.0	1.3	56.8	2,999.9	9.0	-5.6	-9.0	1.62
3,025.0	1.8	64.1	3,024.9	8.4	-5.2	-8.4	1.92
3,050.0	1.9	62.3	3,049.9	7.7	-4.9	-7.7	0.65

Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Vertical Section (ft)	Coordinate N (-S) (ft)	Coordinate E (-W) (ft)	DLS (deg/100 ft)
3,075.0	2.2	65.6	3,074.9	6.9	-4.5	-6.9	1.18
3,100.0	2.4	67.5	3,099.9	6.0	-4.1	-6.0	0.75
3,125.0	2.6	68.8	3,124.8	5.0	-3.7	-5.0	0.94
3,150.0	3.0	66.6	3,149.8	3.9	-3.2	-3.9	1.57
3,175.0	3.2	67.8	3,174.8	2.6	-2.7	-2.6	0.87
3,200.0	3.2	68.6	3,199.7	1.3	-2.2	-1.3	0.21
3,225.0	3.2	69.1	3,224.7	0.0	-1.7	0.0	0.10
3,250.0	3.3	66.3	3,249.7	-1.3	-1.1	1.3	0.69
3,275.0	3.6	64.5	3,274.6	-2.6	-0.5	2.6	1.27
3,300.0	3.7	64.2	3,299.6	-4.0	0.2	4.0	0.41
3,325.0	3.7	64.6	3,324.5	-5.5	0.9	5.5	0.22
3,350.0	3.7	65.0	3,349.5	-7.0	1.6	7.0	0.12
3,375.0	3.9	64.8	3,374.4	-8.4	2.3	8.5	0.56
3,400.0	4.2	62.4	3,399.3	-10.0	3.0	10.0	1.51
3,425.0	4.4	61.6	3,424.3	-11.7	3.9	11.7	0.88
3,450.0	4.5	60.9	3,449.2	-13.4	4.9	13.4	0.57
3,475.0	4.6	61.7	3,474.1	-15.1	5.8	15.1	0.28
3,500.0	4.7	61.7	3,499.0	-16.9	6.8	16.9	0.40
3,525.0	4.7	60.8	3,524.0	-18.7	7.7	18.7	0.46
3,550.0	4.9	60.8	3,548.9	-20.5	8.8	20.5	0.52
3,575.0	5.0	61.1	3,573.8	-22.3	9.8	22.4	0.33
3,600.0	5.1	59.4	3,598.7	-24.2	10.9	24.3	0.85
3,625.0	5.3	56.4	3,623.6	-26.1	12.1	26.2	1.32
3,650.0	5.5	53.5	3,648.5	-28.1	13.5	28.1	1.44
3,675.0	5.7	51.8	3,673.3	-30.0	14.9	30.1	0.92
3,700.0	5.9	49.9	3,698.2	-32.0	16.5	32.0	1.21
3,725.0	6.2	48.9	3,723.1	-33.9	18.2	34.0	1.05
3,750.0	6.4	48.4	3,747.9	-36.0	20.1	36.1	0.95
3,775.0	6.6	47.7	3,772.8	-38.1	21.9	38.2	0.74
3,800.0	6.7	47.4	3,797.6	-40.2	23.9	40.3	0.47
3,825.0	6.8	47.3	3,822.4	-42.3	25.9	42.5	0.52
3,850.0	6.8	47.0	3,847.3	-44.5	27.9	44.6	0.15
3,875.0	6.9	46.9	3,872.1	-46.7	29.9	46.8	0.33
3,900.0	7.0	47.1	3,896.9	-48.9	32.0	49.0	0.30
3,925.0	7.1	46.9	3,921.7	-51.1	34.1	51.3	0.33
3,950.0	7.1	46.2	3,946.5	-53.3	36.2	53.5	0.39
3,975.0	7.1	46.0	3,971.3	-55.5	38.3	55.7	0.20
4,000.0	7.1	46.2	3,996.1	-57.7	40.4	57.9	0.08
4,025.0	6.9	45.7	4,021.0	-59.9	42.6	60.1	0.60
4,050.0	6.9	45.0	4,045.8	-62.0	44.7	62.2	0.34
4,075.0	6.9	45.3	4,070.6	-64.1	46.8	64.4	0.19
4,100.0	6.8	45.9	4,095.4	-66.3	48.9	66.5	0.52
4,125.0	6.6	46.4	4,120.2	-68.3	50.9	68.6	0.79
4,150.0	6.4	45.3	4,145.1	-70.4	52.8	70.6	1.07
4,175.0	6.3	44.3	4,169.9	-72.3	54.8	72.6	0.51
4,200.0	6.1	43.2	4,194.8	-74.1	56.7	74.4	0.93
4,225.0	6.1	43.6	4,219.6	-76.0	58.7	76.2	0.19
4,250.0	6.2	44.6	4,244.5	-77.8	60.6	78.1	0.47
4,275.0	6.2	44.6	4,269.4	-79.7	62.5	80.0	0.32
4,300.0	6.4	44.0	4,294.2	-81.6	64.5	81.9	0.50
4,325.0	6.4	45.2	4,319.0	-83.5	66.5	83.9	0.58
4,350.0	6.4	45.4	4,343.9	-85.5	68.4	85.8	0.14
4,375.0	6.4	46.0	4,368.7	-87.5	70.4	87.8	0.30
4,400.0	6.4	46.0	4,393.6	-89.5	72.3	89.8	0.16
4,425.0	6.4	46.4	4,418.4	-91.5	74.2	91.8	0.32
4,450.0	6.3	47.9	4,443.3	-93.5	76.1	93.9	0.70
4,475.0	6.2	47.9	4,468.1	-95.5	77.9	95.9	0.32
4,500.0	6.1	48.2	4,493.0	-97.5	79.7	97.9	0.34
4,525.0	5.9	49.9	4,517.8	-99.4	81.4	99.8	1.02
4,550.0	5.9	50.9	4,542.7	-101.4	83.1	101.8	0.43
4,575.0	5.8	51.5	4,567.6	-103.4	84.6	103.8	0.45
4,600.0	5.7	51.6	4,592.5	-105.3	86.2	105.8	0.44
4,625.0	5.6	52.6	4,617.3	-107.3	87.7	107.7	0.43
4,650.0	5.6	53.2	4,642.2	-109.2	89.2	109.7	0.26
4,675.0	5.7	54.4	4,667.1	-111.2	90.6	111.7	0.46
4,700.0	5.6	54.2	4,692.0	-113.2	92.1	113.6	0.10

Measured Depth (ft)	Incination (deg)	Azimuth (deg)	TVD (ft)	Vertical Section (ft)	Coordinate N (-S) (ft)	Coordinate E (-W) (ft)	DLS (deg/100 ft)
4,725.0	5.5	53.5	4,716.9	-115.1	93.5	115.6	0.62
4,750.0	5.4	53.6	4,741.7	-117.0	94.9	117.5	0.48
4,775.0	5.4	54.1	4,766.6	-118.9	96.3	119.4	0.22
4,800.0	5.3	54.7	4,791.5	-120.8	97.6	121.3	0.29
4,825.0	5.4	56.3	4,816.4	-122.7	99.0	123.2	0.69
4,850.0	5.4	55.8	4,841.3	-124.7	100.3	125.2	0.30
4,875.0	5.5	56.3	4,866.2	-126.6	101.6	127.1	0.25
4,900.0	5.4	57.0	4,891.1	-128.6	102.9	129.1	0.40
4,925.0	5.3	56.4	4,916.0	-130.5	104.2	131.0	0.52
4,950.0	5.2	56.5	4,940.9	-132.4	105.5	133.0	0.12
4,975.0	5.2	57.2	4,965.8	-134.3	106.7	134.9	0.31
5,000.0	5.2	57.7	4,990.7	-136.2	107.9	136.8	0.16
5,025.0	5.3	58.4	5,015.6	-138.2	109.1	138.7	0.38
5,050.0	5.3	58.6	5,040.4	-140.1	110.3	140.7	0.10
5,075.0	5.3	58.5	5,065.3	-142.1	111.5	142.6	0.05
5,100.0	5.2	59.5	5,090.2	-144.0	112.7	144.6	0.37
5,125.0	5.2	60.2	5,115.1	-146.0	113.8	146.5	0.34
5,150.0	5.1	60.1	5,140.0	-147.9	114.9	148.5	0.36
5,175.0	5.1	61.5	5,164.9	-149.8	116.0	150.4	0.52
5,178.0	5.1	61.7	5,167.9	-150.1	116.1	150.6	0.63
5,297.0	5.1	57.8	5,286.5	-159.1	121.5	159.7	0.29
5,391.0	4.2	53.7	5,380.2	-165.4	125.7	166.0	0.99
5,486.0	1.7	32.4	5,475.0	-169.0	129.0	169.6	2.79
5,581.0	0.8	334.7	5,570.0	-169.4	130.8	170.1	1.55
5,675.0	0.8	335.5	5,664.0	-168.9	132.0	169.5	0.08
5,769.0	0.9	354.9	5,758.0	-168.6	133.3	169.2	0.31
5,863.0	0.8	353.2	5,852.0	-168.4	134.6	169.1	0.09
5,958.0	0.9	326.1	5,947.0	-167.9	135.9	168.6	0.41
6,052.0	1.0	328.1	6,040.9	-167.1	137.1	167.8	0.12
6,146.0	0.0	359.9	6,134.9	-166.7	137.8	167.4	0.99
6,240.0	0.5	141.1	6,228.9	-167.0	137.5	167.6	0.59
6,335.0	0.6	153.1	6,323.9	-167.5	136.8	168.1	0.12
6,429.0	0.5	149.3	6,417.9	-167.9	136.0	168.5	0.05
6,523.0	0.5	140.5	6,511.9	-168.4	135.3	169.0	0.09
6,618.0	0.5	133.4	6,606.9	-169.0	134.7	169.6	0.09
6,711.0	0.2	106.0	6,699.9	-169.4	134.4	170.1	0.36
6,806.0	0.2	106.1	6,794.9	-169.7	134.3	170.4	0.01
6,902.0	0.1	165.1	6,890.9	-169.9	134.2	170.5	0.16
6,996.0	0.1	344.6	6,984.9	-169.9	134.1	170.5	0.16
7,091.0	0.1	287.1	7,079.9	-169.8	134.2	170.4	0.09
7,186.0	0.3	181.2	7,174.9	-169.7	134.0	170.4	0.38
7,280.0	0.4	175.0	7,268.9	-169.7	133.4	170.4	0.06
7,374.0	0.3	178.8	7,362.9	-169.8	132.9	170.4	0.08
7,469.0	0.4	182.7	7,457.9	-169.7	132.3	170.4	0.10
7,562.0	0.6	181.3	7,550.9	-169.7	131.5	170.4	0.28
7,656.0	0.4	190.0	7,644.9	-169.7	130.7	170.3	0.29
7,751.0	0.6	164.1	7,739.9	-169.7	129.9	170.4	0.32
7,844.0	0.5	157.2	7,832.9	-170.0	129.0	170.7	0.15
7,939.0	0.3	163.7	7,927.9	-170.2	128.5	170.9	0.25
8,034.0	0.5	202.5	8,022.9	-170.2	127.9	170.8	0.34
8,128.0	0.4	207.8	8,116.9	-169.8	127.2	170.5	0.06
8,220.0	0.5	217.2	8,208.9	-169.4	126.6	170.1	0.09
8,315.0	0.3	199.0	8,303.9	-169.1	126.1	169.8	0.27
8,410.0	0.4	235.5	8,398.9	-168.8	125.7	169.4	0.25
8,503.0	0.3	220.2	8,491.9	-168.4	125.4	169.0	0.14
8,598.0	0.4	209.0	8,586.9	-168.1	124.9	168.7	0.09
8,692.0	0.5	250.1	8,680.9	-167.6	124.5	168.2	0.31
8,786.0	0.3	277.4	8,774.9	-167.1	124.4	167.7	0.26
8,880.0	0.3	278.0	8,868.9	-166.6	124.5	167.2	0.04
8,974.0	0.6	279.6	8,962.9	-165.9	124.6	166.5	0.29
9,069.0	0.6	249.5	9,057.9	-164.9	124.5	165.5	0.33
9,163.0	0.6	242.3	9,151.9	-164.0	124.1	164.6	0.09
9,257.0	0.4	220.9	9,245.9	-163.4	123.7	164.0	0.25
9,351.0	0.2	262.5	9,339.9	-163.1	123.4	163.7	0.32
9,446.0	0.2	210.8	9,434.9	-162.9	123.2	163.5	0.20
9,541.0	0.2	139.8	9,529.9	-162.9	122.9	163.5	0.29

Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Vertical Section (ft)	Coordinate N (-S) (ft)	Coordinate E (-W) (ft)	DLS (deg/100 ft)
9,635.0	0.5	134.9	9,623.9	-163.3	122.5	163.9	0.28
9,730.0	0.3	119.0	9,718.9	-163.9	122.0	164.5	0.21
9,824.0	0.7	146.8	9,812.9	-164.4	121.4	165.0	0.47
9,918.0	0.8	152.1	9,906.8	-165.0	120.4	165.6	0.08
10,011.0	1.1	160.7	9,999.8	-165.6	119.0	166.2	0.37
10,105.0	1.1	170.5	10,093.8	-166.1	117.3	166.6	0.20
10,199.0	1.1	191.6	10,187.8	-166.0	115.5	166.6	0.43
10,265.0	1.2	192.2	10,253.8	-165.8	114.2	166.3	0.17
10,313.0	5.4	252.7	10,301.7	-163.5	113.1	164.1	10.28
10,360.0	13.5	264.5	10,348.0	-156.0	111.9	156.5	17.53
10,407.0	21.1	267.6	10,392.9	-142.0	111.0	142.6	16.32
10,454.0	27.4	264.9	10,435.7	-122.8	109.7	123.3	13.71
10,500.0	32.4	265.3	10,475.6	-100.0	107.7	100.5	10.81
10,547.0	34.8	266.6	10,514.7	-74.0	105.9	74.5	5.42
10,594.0	40.3	270.1	10,552.0	-45.4	105.1	45.9	12.42
10,641.0	41.8	270.8	10,587.4	-14.6	105.4	15.1	3.30
10,689.0	42.8	270.3	10,622.9	17.7	105.6	-17.2	2.19
10,736.0	43.5	270.2	10,657.2	49.9	105.8	-49.4	1.65
10,784.0	49.7	270.4	10,690.2	84.8	105.9	-84.2	12.88
10,831.0	56.8	270.4	10,718.3	122.4	106.2	-121.9	15.02
10,878.0	60.4	271.1	10,742.8	162.5	106.8	-162.0	7.89
10,925.0	63.8	271.0	10,764.7	204.0	107.5	-203.5	7.09
10,972.0	65.7	270.7	10,784.8	246.5	108.1	-246.0	4.12
11,019.0	71.6	269.6	10,801.9	290.3	108.2	-289.8	12.71
11,066.0	78.2	268.6	10,814.1	335.6	107.5	-335.1	14.31
11,113.0	85.7	268.2	10,820.7	382.1	106.2	-381.6	15.87
11,160.0	91.7	269.4	10,821.8	429.1	105.2	-428.5	12.99
11,254.0	92.7	269.8	10,818.2	523.0	104.5	-522.5	1.22
11,317.0	93.2	269.9	10,814.9	585.9	104.4	-585.4	0.70
11,338.0	93.3	270.8	10,813.7	606.9	104.5	-606.4	4.30
11,432.0	93.1	271.6	10,808.5	700.7	106.4	-700.2	0.87
11,526.0	93.2	272.0	10,803.3	794.5	109.4	-794.0	0.49
11,620.0	93.2	272.6	10,798.1	888.3	113.2	-887.8	0.64
11,714.0	94.1	270.7	10,792.2	982.1	116.0	-981.5	2.28
11,808.0	94.2	270.6	10,785.4	1,075.8	117.1	-1,075.3	0.14
11,902.0	94.1	271.1	10,778.6	1,169.6	118.5	-1,169.0	0.54
11,997.0	94.2	271.7	10,771.7	1,264.3	120.8	-1,263.8	0.63
12,090.0	93.1	271.8	10,765.9	1,357.1	123.7	-1,356.5	1.21
12,184.0	93.1	269.6	10,760.9	1,451.0	124.9	-1,450.4	2.34
12,279.0	93.1	269.0	10,755.8	1,545.8	123.8	-1,545.2	0.63
12,373.0	93.2	269.2	10,750.6	1,639.7	122.3	-1,639.1	0.22
12,467.0	93.2	270.1	10,745.4	1,733.5	121.7	-1,732.9	0.95
12,561.0	93.2	270.7	10,740.2	1,827.4	122.4	-1,826.8	0.68
12,656.0	93.0	270.0	10,735.1	1,922.2	123.0	-1,921.6	0.80
12,750.0	93.1	269.6	10,730.1	2,016.1	122.7	-2,015.5	0.39
12,845.0	93.1	268.8	10,725.0	2,110.9	121.4	-2,110.4	0.84
12,939.0	93.4	267.9	10,719.7	2,204.7	118.7	-2,204.2	0.99
13,034.0	94.1	267.9	10,713.6	2,299.5	115.3	-2,298.9	0.77
13,127.0	94.1	267.7	10,706.9	2,392.1	111.8	-2,391.6	0.27
13,222.0	94.1	268.4	10,700.1	2,486.8	108.5	-2,486.3	0.69
13,316.0	94.0	269.3	10,693.5	2,580.5	106.6	-2,580.1	1.02
13,410.0	94.0	270.2	10,686.9	2,674.3	106.2	-2,673.8	0.89
13,504.0	93.1	270.0	10,681.1	2,768.1	106.3	-2,767.6	1.03
13,598.0	92.8	269.2	10,676.2	2,862.0	105.6	-2,861.5	0.89
13,692.0	89.9	271.3	10,673.9	2,955.9	105.9	-2,955.5	3.79
13,787.0	89.9	270.5	10,674.1	3,050.9	107.4	-3,050.5	0.79
13,881.0	90.0	268.4	10,674.1	3,144.9	106.5	-3,144.4	2.23
13,976.0	90.6	266.1	10,673.5	3,239.8	101.9	-3,239.3	2.55
14,070.0	93.1	264.8	10,670.5	3,333.4	94.5	-3,333.0	2.89
14,165.0	95.1	265.3	10,663.8	3,427.8	86.3	-3,427.4	2.18
14,259.0	98.0	266.3	10,653.1	3,520.8	79.5	-3,520.5	3.33
14,354.0	98.8	267.0	10,639.2	3,614.6	74.0	-3,614.3	1.07
14,448.0	99.3	267.4	10,624.4	3,707.3	69.4	-3,707.0	0.66
14,542.0	100.0	267.6	10,608.7	3,799.9	65.3	-3,799.6	0.75
14,636.0	100.7	267.7	10,591.9	3,892.3	61.5	-3,892.0	0.76
14,746.0	102.9	267.9	10,569.4	3,999.9	57.3	-3,999.6	2.04

Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Vertical Section (ft)	Coordinate N (-S) (ft)	Coordinate E (-W) (ft)	DLS (deg/100 ft)
14,840.0	103.1	272.1	10,548.3	4,091.4	57.4	-4,091.2	4.39
14,934.0	96.4	274.5	10,532.4	4,183.9	62.8	-4,183.6	7.58
15,028.0	92.4	273.9	10,525.2	4,277.4	69.7	-4,277.1	4.25
15,122.0	88.6	273.1	10,524.4	4,371.2	75.4	-4,370.9	4.12
15,216.0	89.5	274.1	10,525.9	4,465.0	81.3	-4,464.7	1.46
15,311.0	89.6	270.8	10,526.7	4,559.9	85.3	-4,559.6	3.55
15,405.0	91.0	270.6	10,526.2	4,653.9	86.4	-4,653.6	1.47
15,499.0	89.5	272.2	10,525.9	4,747.9	88.7	-4,747.5	2.27
15,594.0	89.8	273.3	10,526.4	4,842.8	93.3	-4,842.4	1.26
15,689.0	90.8	273.7	10,526.0	4,937.7	99.1	-4,937.2	1.13
15,783.0	91.7	271.9	10,524.0	5,031.5	103.7	-5,031.1	2.20
15,877.0	90.0	271.0	10,522.6	5,125.5	106.0	-5,125.1	1.97
15,971.0	90.0	270.8	10,522.6	5,219.5	107.4	-5,219.0	0.17
16,065.0	90.6	271.6	10,522.1	5,313.5	109.4	-5,313.0	1.10
16,159.0	89.9	270.7	10,521.7	5,407.5	111.3	-5,407.0	1.30
16,253.0	89.7	268.6	10,522.0	5,501.5	110.6	-5,501.0	2.24
16,347.0	90.7	268.0	10,521.7	5,595.4	107.8	-5,595.0	1.18
16,442.0	89.6	268.7	10,521.6	5,690.4	105.1	-5,689.9	1.37
16,536.0	89.8	269.0	10,522.1	5,784.3	103.3	-5,783.9	0.38
16,630.0	90.6	269.5	10,521.8	5,878.3	102.0	-5,877.9	1.08
16,724.0	89.4	268.6	10,521.8	5,972.3	100.5	-5,971.9	1.59
16,819.0	89.8	268.4	10,522.4	6,067.2	98.0	-6,066.8	0.45
16,913.0	90.6	268.8	10,522.0	6,161.2	95.8	-6,160.8	0.94
17,007.0	88.8	268.9	10,522.5	6,255.2	93.9	-6,254.8	1.92
17,102.0	89.8	270.3	10,523.6	6,350.1	93.2	-6,349.8	1.81
17,196.0	87.8	269.2	10,525.6	6,444.1	92.8	-6,443.7	2.39
17,290.0	87.8	268.8	10,529.1	6,538.0	91.1	-6,537.7	0.48
17,385.0	87.8	268.3	10,532.8	6,632.9	88.6	-6,632.6	0.50
17,479.0	90.4	268.1	10,534.4	6,726.8	85.7	-6,726.5	2.77
17,573.0	91.2	268.6	10,533.1	6,820.8	82.9	-6,820.4	1.09
17,667.0	92.6	268.8	10,529.9	6,914.7	80.8	-6,914.4	1.47
17,762.0	91.3	268.8	10,526.7	7,009.6	78.8	-7,009.3	1.41
17,856.0	90.3	269.8	10,525.5	7,103.6	77.7	-7,103.3	1.54
17,951.0	90.6	269.8	10,524.8	7,198.5	77.4	-7,198.3	0.36
18,045.0	92.3	269.5	10,522.4	7,292.5	76.8	-7,292.2	1.81
18,140.0	90.4	268.6	10,520.3	7,387.5	75.2	-7,387.2	2.25
18,234.0	92.0	268.7	10,518.3	7,481.4	72.9	-7,481.1	1.77
18,328.0	93.2	269.2	10,514.1	7,575.3	71.2	-7,575.0	1.33
18,422.0	91.6	269.2	10,510.2	7,669.2	69.8	-7,668.9	1.70
18,516.0	92.2	269.4	10,507.1	7,763.1	68.6	-7,762.9	0.69
18,610.0	94.1	269.4	10,501.9	7,856.9	67.7	-7,856.7	2.06
18,704.0	92.5	269.6	10,496.5	7,950.8	66.9	-7,950.5	1.71
18,798.0	92.8	270.4	10,492.1	8,044.7	66.9	-8,044.4	0.85
18,846.0	93.2	270.4	10,489.6	8,092.6	67.2	-8,092.4	0.81
18,913.0	93.2	270.4	10,485.9	8,159.5	67.6	-8,159.3	0.00

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ACKNOWLEDGMENTS

Action 28644

ACKNOWLEDGMENTS

Operator: CAZA OPERATING, LLC 200 N Loraine St Midland, TX 79701	OGRID: 249099
	Action Number: 28644
	Action Type: [C-104] Completion Packet (C-104C)

ACKNOWLEDGMENTS

☐	I hereby certify that the required Water Use Report has been, or will be, submitted for this wells completion.
☐	I hereby certify that the required FracFocus disclosure has been, or will be, submitted for this wells completion.

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 28644

CONDITIONS

Operator: CAZA OPERATING, LLC 200 N Loraine St Midland, TX 79701	OGRID: 249099
	Action Number: 28644
	Action Type: [C-104] Completion Packet (C-104C)

CONDITIONS

Created By	Condition	Condition Date
ksimmons	Duplicate: accepted for purposes of C-105 completion report and other documents.	7/21/2021