

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB NO. 1004-0137
Expires: October 31, 2014

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. Type of Well ☒ Oil Well ☐ Gas Well ☐ Dry ☐ Other
b. Type of Completion: ☒ New Well ☐ Work Over ☐ Deepen ☐ Plug Back ☐ Diff. Resvr.,
Other:2. Name of Operator
Caza Operating, LLC3. Address
200 N. Lorraine, Suite 1550, Midland, Texas 797013a. Phone No. (include area code)
432 682 7424 HOBBS OCD

4. Location of Well (Report location clearly and in accordance with Federal requirements)*

At surface 150' FNL & 1980 FWL, Sec 29, T23S, R34E

MAY 21 2014

At top prod. interval reported below 772 FNL & 1984 FWL, Sec 29, T23S, R34E

At total depth 314' FSL & 2027' FWL, Sec 29, T23S, R34E

RECEIVED

14. Date Spudded
01/01/201415. Date T.D. Reached
02/08/201416. Date Completed 03/01/2014
☐ D & A ☒ Ready to Prod.17. Elevations (DF, RKB, RT, GL)*
GL 353918. Total Depth: MD 15,804
TVD 11,38519. Plug Back T.D.: MD 15733
TVD 11,38820. Depth Bridge Plug Set: MD
TVD21. Type Electric & Other Mechanical Logs Run (Submit copy of each)
Compensated Neutron/Gamma Ray 11,698 ft - Surface22. Was well cored? ☒ No ☐ Yes (Submit analysis)
Was DST run? ☒ No ☐ Yes (Submit report)
Directional Survey? ☐ No ☒ Yes (Submit copy)

23. Casing and Liner Record (Report all strings set in well)

Hole Size	Size/Grade	Wt. (#/ft.)	Top (MD)	Bottom (MD)	Stage Cementer Depth	No. of Sk. & Type of Cement	Slurry Vol. (BBL)	Cement Top*	Amount Pulled
17-1/2	13-3/8 J-55	54.5	Surface	1172		1158	319	Surface	
12-1/4	9-5/8 J HCK	40.0	Surface	5085		1290	436	Surface	
8-3/4	5-1/2 HCP	20.0	Surface	15,781		2035	767	3594 CBL	

24. Tubing Record

Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)
2.875	10,904	10,906						

25. Producing Intervals

Formation	Top	Bottom	Perforation Interval	Size	No. Holes	Perf. Status
A) Bone Spring (3rd)	11235 TVD	11479 TVD	11600-15719	.4	576	Open
B)						
C)						
D)						

27. Acid, Fracture, Treatment, Cement Squeeze, etc.

Depth Interval	Amount and Type of Material
11600-15719	738 bbls 15% HCL NEFE
11600-15719	82,200 lbs 40/70 white + 2,983,080 lbs 20/40 Carbo prop + 56,277 bbls water + additives.

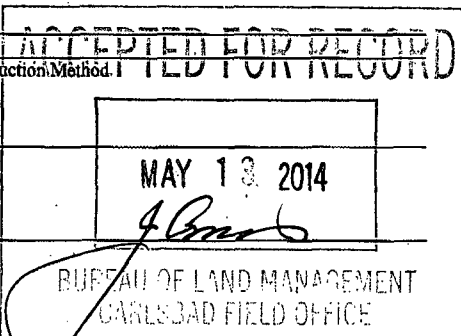
28. Production - Interval A

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
3-1-14	3-10-14	24	→	969	1242	756	43.7	.7164	Flowing
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	
22	1400	0	→	969	1242	756	1282	Producing	

28a. Production - Interval B

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
			→						
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	
			→						

*(See instructions and spaces for additional data on page 2)



28b. Production - Interval C

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
			→						
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	
			→						

28c. Production - Interval D

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
			→						
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	
			→						

29. Disposition of Gas (Solid, used for fuel, vented, etc.)

Sold

30. Summary of Porous Zones (Include Aquifers):

Show all important zones of porosity and contents thereof: Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures and recoveries.

31. Formation (Log) Markers

Formation	Top	Bottom	Descriptions, Contents, etc.	Name	Top
					Meas. Depth
				Rustler Top of Salt	985 1455
				Castile Base of Salt	2775 4780
				Bell Canyon Cherry Canyon	5145 5986
				Brushy Canyon Bone Spring	7260 8650
				1st Bone Spring 2nd Bone Spring	9635 10330
				3rd Bone Spring	11235

32. Additional remarks (include plugging procedure):

33. Indicate which items have been attached by placing a check in the appropriate boxes:

- ☒ Electrical/Mechanical Logs (1 full set req'd.)
 ☐ Geologic Report
 ☐ DST Report
 ☒ Directional Survey
☐ Sundry Notice for plugging and cement verification
 ☐ Core Analysis
 ☒ Other: schematic, C-102, C-104

34. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records (see attached instructions)*

Name (please print) Richard L. WrightTitle Operations ManagerSignature Richard L. WrightDate 03/12/2014

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

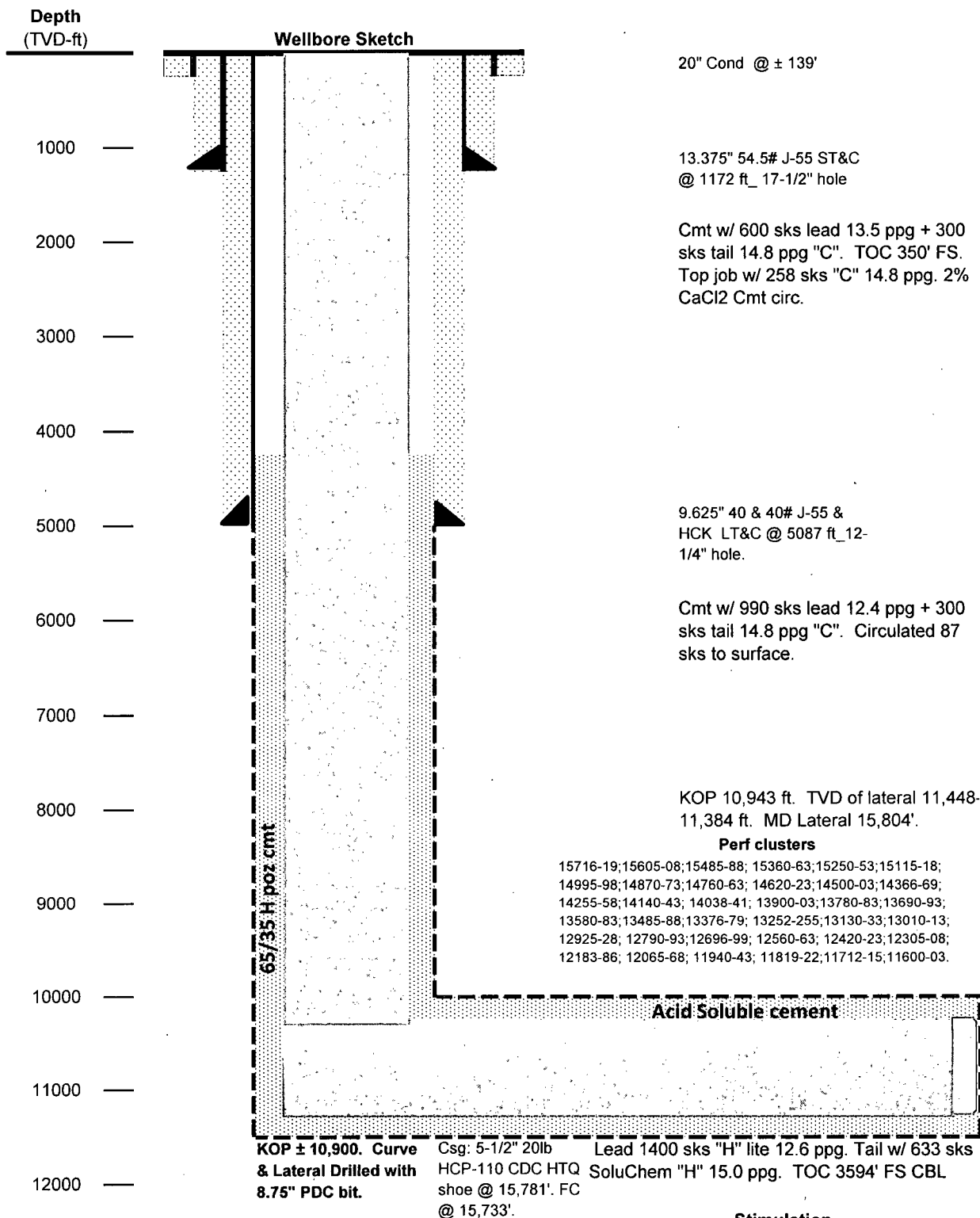
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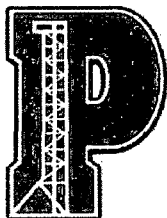
(Form 3160-4, page 2)

West Copperline 29 State Com #3H

Location: **Section 29_T23S_R34E_Lea County, New Mexico**

API #30-025-41536





PATRIOT DRILLING, LLC

OPERATOR: Caza Operating, LLC
WELL/LEASE: West Copperline 29 State Com # 3
COUNTY: Lea Co., New Mexico
Sec.29, T23S, R34E

**STATE OF NEW MEXICO
DEVIATION REPORT**

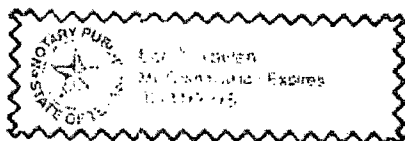
<u>Depth</u>	<u>Deviation</u>	<u>Depth</u>	<u>Deviation</u>
452	3/4	2,731	1/2
806	3/4	2,920	1/2
1,060	1	3,323	1
1,252	1/2	3,681	3/4
1,336	1/2	3,967	3/4
1,527	3/4	4,157	1 3/4
1,684	1	4,918	1
2,064	1/4	5,238	1 1/4
2,445	3/4	5,332	1 1/2

Patriot Drilling, LLC

M. Leroy Peterson, Executive Vice-
President

The foregoing instrument was acknowledged before me on this 12th day of February, 2014 by M. Leroy Peterson, Executive Vice-President of Patriot Drilling,

My Commission Expires: 02/01/2015


Lori T. Rowan
Notary Public for Ector Co., Texas



Company: Caza Operating
Lease/Well: West Copperline 29 Fed State Com/No. 003H

Rig Name: Patriot 1
State/County: New Mexico/Lea
Latitude: 32.28, Longitude: -103.49
GRID North is 0.45 Degrees East of True North
VS-Azi: 0.00 Degrees



Depth Reference : RKB = 18.5ft

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: final.ut

Minimum Curvature Method

Report Date/Time: 1/30/2014 / 10:02

Vaughn Energy Services

Fort Worth, Texas

817-741-3610

Surveyor: Jay Carroll

West Copperline 29 Fed State Com No. 003H / API 30-025-41536

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.32	110.29	100.00	-0.10	0.26	-0.10	0.28	110.29	0.32
200.00	0.15	114.83	200.00	-0.25	0.64	-0.25	0.69	111.15	0.17
300.00	0.47	165.07	300.00	-0.70	0.87	-0.70	1.11	128.90	0.39
400.00	0.43	169.35	399.99	-1.46	1.04	-1.46	1.80	144.57	0.05
500.00	0.11	173.21	499.99	-1.93	1.12	-1.93	2.23	149.76	0.33
600.00	0.48	114.61	599.99	-2.19	1.51	-2.19	2.66	145.35	0.44
700.00	0.59	207.92	699.99	-2.82	1.65	-2.82	3.27	149.64	0.78
800.00	0.39	234.27	799.98	-3.48	1.13	-3.48	3.66	161.94	0.30
900.00	0.79	250.70	899.98	-3.91	0.21	-3.91	3.91	176.90	0.43
1000.00	0.19	249.65	999.98	-4.19	-0.59	-4.19	4.23	188.01	0.60
1100.00	0.57	255.84	1099.97	-4.37	-1.22	-4.37	4.53	195.62	0.38
1200.00	0.52	290.34	1199.97	-4.33	-2.12	-4.33	4.82	206.10	0.32
1300.00	0.60	277.86	1299.96	-4.10	-3.06	-4.10	5.12	216.73	0.15
1400.00	0.09	200.10	1399.96	-4.11	-3.61	-4.11	5.47	221.30	0.59
1500.00	0.14	96.92	1499.96	-4.20	-3.51	-4.20	5.47	219.90	0.19
1600.00	0.33	73.50	1599.96	-4.13	-3.11	-4.13	5.17	216.97	0.21
1700.00	0.57	57.60	1699.96	-3.78	-2.41	-3.78	4.48	212.52	0.27
1800.00	0.72	340.40	1799.95	-2.92	-2.20	-2.92	3.66	216.96	0.81

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1900.00	0.95	273.45	1899.94	-2.28	-3.24	-2.28	3.96	234.83	0.94
2000.00	0.92	254.02	1999.93	-2.45	-4.84	-2.45	5.42	243.12	0.32
2100.00	0.39	251.69	2099.92	-2.78	-5.94	-2.78	6.56	244.90	0.53
2200.00	0.34	248.99	2199.92	-2.99	-6.54	-2.99	7.19	245.39	0.06
2300.00	0.42	313.27	2299.92	-2.85	-7.08	-2.85	7.63	248.06	0.41
2400.00	0.75	323.16	2399.92	-2.08	-7.73	-2.08	8.01	254.96	0.35
2500.00	0.33	306.52	2499.91	-1.38	-8.36	-1.38	8.47	260.60	0.45
2600.00	0.09	60.58	2599.91	-1.17	-8.52	-1.17	8.60	262.15	0.37
2700.00	0.56	14.63	2699.91	-0.66	-8.32	-0.66	8.35	265.48	0.50
2800.00	0.45	357.38	2799.90	0.21	-8.22	0.21	8.22	271.48	0.19
2900.00	0.68	0.08	2899.90	1.20	-8.23	1.20	8.32	278.27	0.23
3000.00	0.61	4.79	2999.89	2.32	-8.19	2.32	8.51	285.82	0.09
3100.00	0.85	9.77	3099.89	3.58	-8.02	3.58	8.78	294.08	0.25
3200.00	0.87	17.55	3199.87	5.04	-7.66	5.04	9.17	303.32	0.12
3300.00	1.07	30.29	3299.86	6.57	-6.96	6.57	9.57	313.31	0.30
3400.00	1.46	37.46	3399.84	8.38	-5.72	8.38	10.15	325.70	0.42
3500.00	1.56	28.89	3499.80	10.58	-4.29	10.58	11.42	337.94	0.24
3600.00	1.36	28.35	3599.77	12.81	-3.07	12.81	13.17	346.52	0.20
3700.00	0.46	28.81	3699.76	14.20	-2.32	14.20	14.39	350.73	0.90
3800.00	0.08	47.12	3799.75	14.60	-2.07	14.60	14.75	351.93	0.38
3900.00	0.19	54.41	3899.75	14.75	-1.88	14.75	14.87	352.73	0.11
4000.00	1.01	58.75	3999.75	15.30	-0.99	15.30	15.34	356.29	0.82
4100.00	1.75	42.37	4099.72	16.89	0.79	16.89	16.90	2.67	0.83
4200.00	1.93	68.96	4199.67	18.62	3.39	18.62	18.92	10.31	0.86
4300.00	3.28	64.60	4299.56	20.45	7.54	20.45	21.79	20.24	1.36
4400.00	4.09	58.31	4399.36	23.55	13.16	23.55	26.97	29.20	0.90
4500.00	4.21	52.44	4499.09	27.66	19.10	27.66	33.61	34.63	0.44
4600.00	3.39	47.79	4598.87	31.88	24.20	31.88	40.02	37.20	0.88
4700.00	3.20	36.37	4698.71	36.11	28.04	36.11	45.72	37.83	0.68
4800.00	2.65	21.39	4798.58	40.51	30.64	40.51	50.74	37.01	0.94
4900.00	1.39	358.64	4898.52	43.87	31.35	43.87	53.92	35.55	1.47
5000.00	0.52	327.77	4998.50	45.46	31.08	45.46	55.07	34.36	0.98
5100.00	0.64	281.22	5098.50	45.96	30.30	45.96	55.04	33.39	0.47
5200.00	1.15	271.54	5198.49	46.09	28.75	46.09	54.32	31.95	0.53
5227.00	1.32	270.94	5225.48	46.10	28.17	46.10	54.03	31.42	0.63



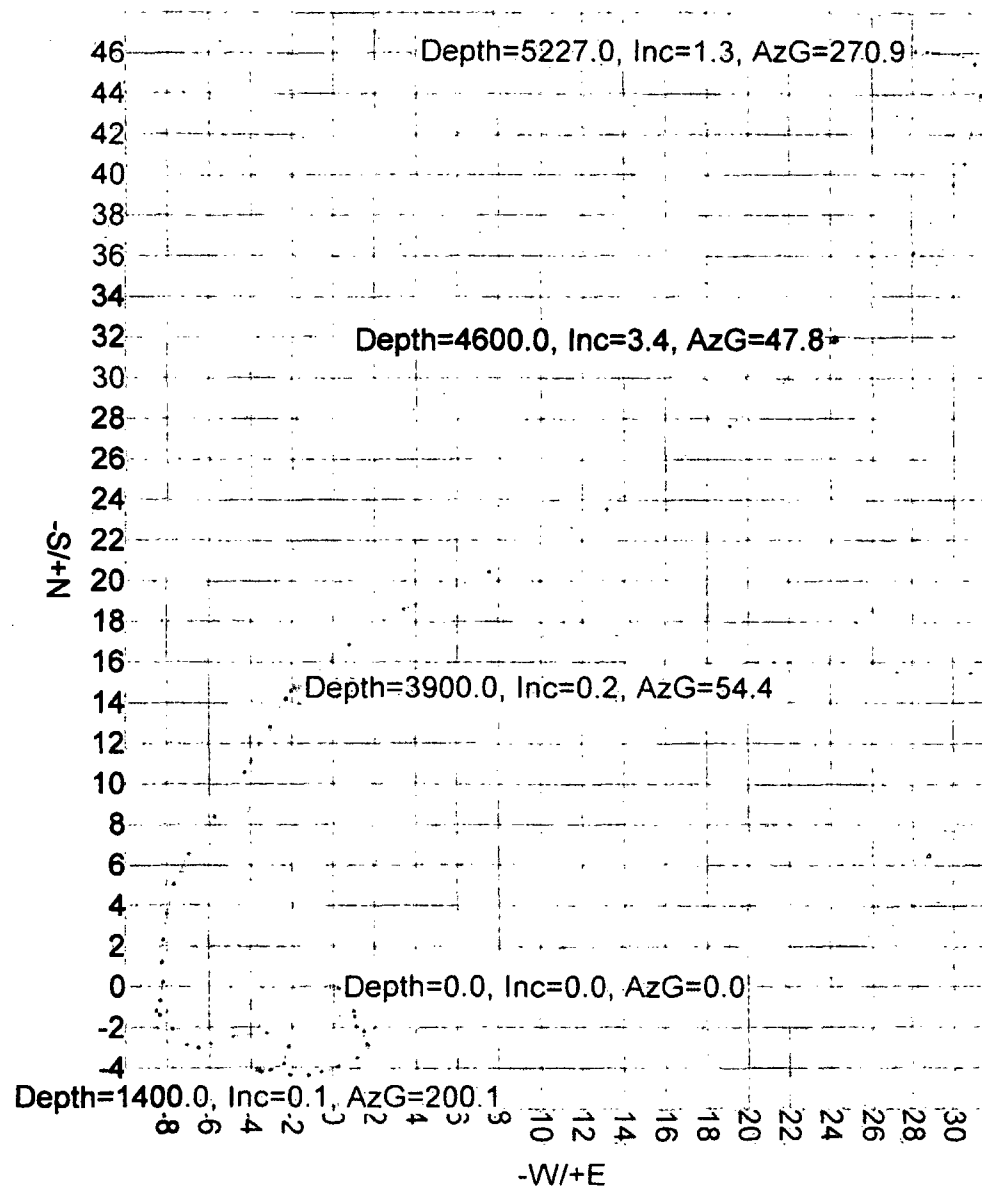
Vaughn Energy Services

Fort Worth, Texas

817-741-3610

Surveyor: Jay Carroll

West Copperline 29 Fed State Com No. 003H / API 30-025-41536



VES Survey Date: 01/15/2014

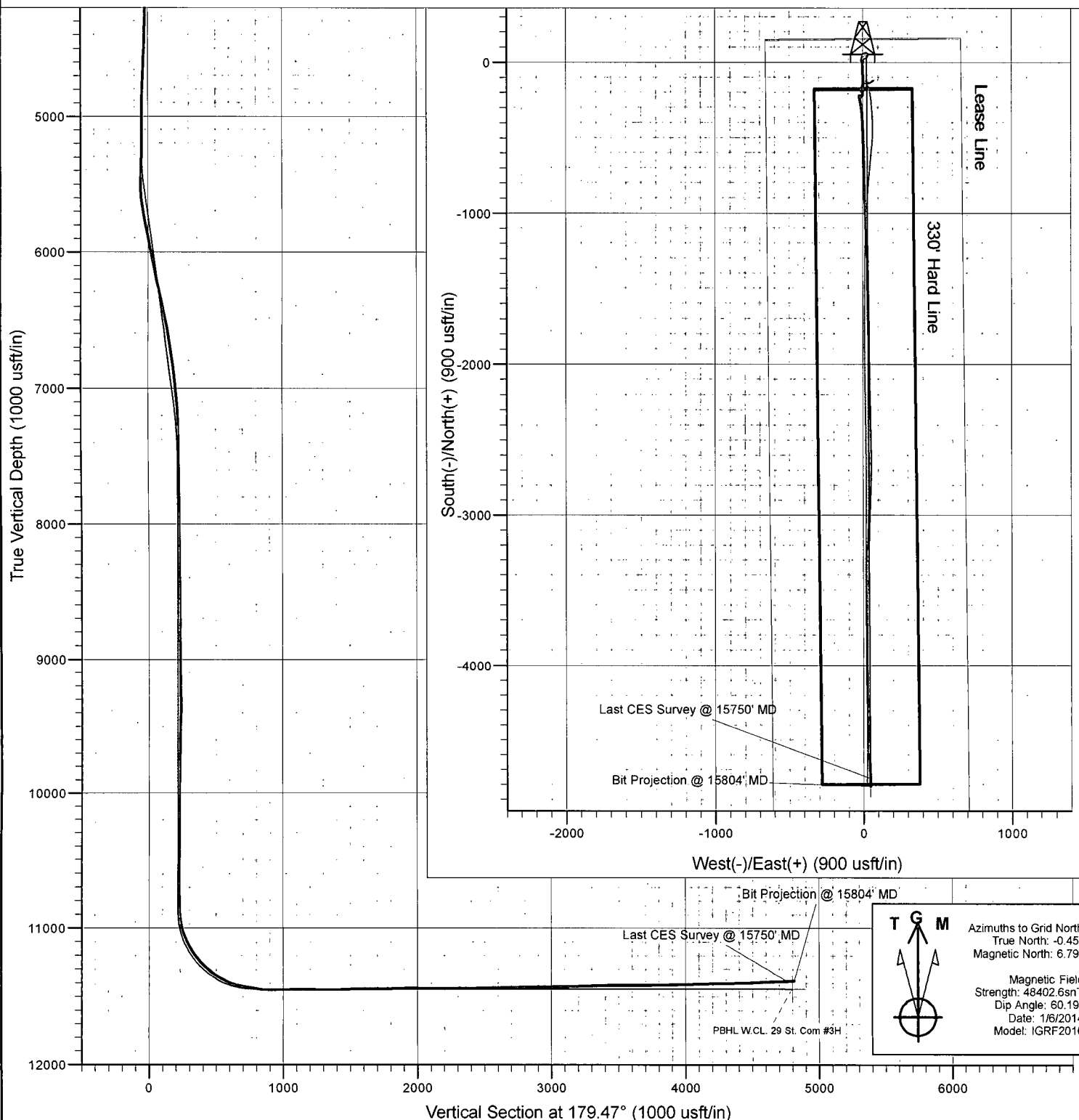


Project: Lea Co. NM
 Site: West Copperline 29 State Com
 Well: West Copperline 29 State Com #3H
 Wellbore: Wellbore
 Design: Plan #3
 Rig: Patriot #1



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	Annotation
1	5227.0	1.32	270.94	5225.5	46.1	28.1	0.00	0.00	-45.9		Tie In @ 5227' MD
2	5262.0	1.32	270.94	5260.5	46.1	27.3	0.00	0.00	-45.9		Build 3°/100'
3	5527.4	7.82	179.47	5525.1	28.1	24.4	3.00	-100.95	-27.9		EOB @ 5527.4' MD
4	7116.1	7.82	179.47	7098.9	-188.0	26.4	0.00	0.00	188.3		Drop 1.95°/100'
5	7516.1	0.00	0.00	7497.7	-215.3	26.7	1.95	180.00	215.5		EOD @ 7516.1' MD
6	10900.0	0.00	0.00	10881.6	-215.3	26.7	0.00	0.00	215.5		Build 10.17°/100'
7	11785.0	90.00	179.78	11445.0	-778.7	28.8	10.17	179.78	778.9		EOB @ 11785' MD
8	15804.1	90.00	179.78	11445.0	-4797.8	44.2	0.00	0.00	4798.0	PBHL W.CL. 29 St. Com #3H	PBHL @ 15804.1' MD



Cathedral Energy Services

Survey Report

Company:	Caza Operating, LLC	Local Co-ordinate Reference:	Well West Copperline 29 State Com #3H
Project:	Lea County, NM	TVD Reference:	WELL @ 3560.0usft (Patriot #1)
Site:	West Copperline 29 State Com	MD Reference:	WELL @ 3560.0usft (Patriot #1)
Well:	West Copperline 29 State Com #3H	North Reference:	Grid
Wellbore:	Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore	Database:	USA EDM 5000 Multi Users DB

Project	Lea County, NM		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	West Copperline 29 State Com		
Site Position:		Northing:	467,259.70 usft
From:	Map	Easting:	759,475.60 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"
		Latitude:	32° 16' 54.560 N
		Longitude:	103° 29' 37.449 W
		Grid Convergence:	0.45 °

Well	West Copperline 29 State Com #3H		
Well Position	+N/-S	0.0 usft	Northing: 467,439.60 usft
	+E/-W	0.0 usft	Easting: 759,473.90 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 16' 56.340 N
		Longitude:	103° 29' 37.452 W
		Ground Level:	3,539.0 usft

Wellbore	Wellbore		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	1/6/2014	(°)
			7.24
			Dip Angle (°)
			60.19
			Field Strength (nT)
			48,403

Design	Wellbore		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			179.47

Survey Program	Date -2/8/2014		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
100.0	5,227.0	Gyro (Wellbore)	Gyro
5,238.0	15,804.0	Survey #3 (Wellbore)	ISCWSA MWD
			Description
			Gyro
			MWD - ISCWSA

Survey									
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Formations /
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Comments
(usft)			(usft)			(usft)	(°/100usf	(°/100u	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.32	110.29	100.0	-0.1	0.3	0.1	0.32	0.32	
200.0	0.15	114.83	200.0	-0.2	0.6	0.3	0.17	-0.17	
300.0	0.47	165.07	300.0	-0.7	0.9	0.7	0.39	0.32	
400.0	0.43	169.35	400.0	-1.5	1.0	1.5	0.05	-0.04	
500.0	0.11	173.21	500.0	-1.9	1.1	1.9	0.32	-0.32	
600.0	0.48	114.61	600.0	-2.2	1.5	2.2	0.43	0.37	
700.0	0.59	207.92	700.0	-2.8	1.7	2.8	0.78	0.11	
800.0	0.39	234.27	800.0	-3.5	1.1	3.5	0.30	-0.20	
900.0	0.79	250.70	900.0	-3.9	0.2	3.9	0.43	0.40	
1,000.0	0.19	249.65	1,000.0	-4.2	-0.6	4.2	0.60	-0.60	
1,100.0	0.57	255.84	1,100.0	-4.4	-1.2	4.4	0.38	0.38	

Cathedral Energy Services

Survey Report

Company:	Caza Operating, LLC	Local Co-ordinate Reference:	Well West Copperline 29 State Com #3H
Project:	Lea County, NM	TVD Reference:	WELL @ 3560.0usft (Patriot #1)
Site:	West Copperline 29 State Com	MD Reference:	WELL @ 3560.0usft (Patriot #1)
Well:	West Copperline 29 State Com #3H	North Reference:	Grid
Wellbore:	Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore	Database:	USA EDM 5000 Multi Users DB

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100u)	Formations / Comments
1,200.0	0.52	290.34	1,200.0	-4.3	-2.1	4.3	0.33	-0.05	
1,300.0	0.60	277.86	1,300.0	-4.1	-3.1	4.1	0.15	0.08	
1,400.0	0.09	200.10	1,400.0	-4.1	-3.6	4.1	0.59	-0.51	
1,500.0	0.14	96.92	1,500.0	-4.2	-3.5	4.2	0.18	0.05	
1,600.0	0.33	73.50	1,600.0	-4.1	-3.1	4.1	0.21	0.19	
1,700.0	0.57	57.60	1,700.0	-3.8	-2.4	3.8	0.27	0.24	
1,800.0	0.72	340.40	1,800.0	-2.9	-2.2	2.9	0.81	0.15	
1,900.0	0.95	273.45	1,899.9	-2.3	-3.3	2.3	0.94	0.23	
2,000.0	0.92	254.02	1,999.9	-2.5	-4.9	2.4	0.32	-0.03	
2,100.0	0.39	251.69	2,099.9	-2.8	-6.0	2.7	0.53	-0.53	
2,200.0	0.34	248.99	2,199.9	-3.0	-6.6	2.9	0.05	-0.05	
2,300.0	0.42	313.27	2,299.9	-2.9	-7.1	2.8	0.41	0.08	
2,400.0	0.75	323.16	2,399.9	-2.1	-7.8	2.0	0.34	0.33	
2,500.0	0.33	306.52	2,499.9	-1.4	-8.4	1.3	0.44	-0.42	
2,600.0	0.09	60.58	2,599.9	-1.2	-8.6	1.1	0.38	-0.24	
2,700.0	0.56	14.63	2,699.9	-0.7	-8.4	0.6	0.50	0.47	
2,800.0	0.45	357.38	2,799.9	0.2	-8.3	-0.3	0.19	-0.11	
2,900.0	0.68	0.08	2,899.9	1.2	-8.3	-1.3	0.23	0.23	
3,000.0	0.61	4.79	2,999.9	2.3	-8.2	-2.4	0.09	-0.07	
3,100.0	0.85	9.77	3,099.9	3.6	-8.1	-3.7	0.25	0.24	
3,200.0	0.87	17.55	3,199.9	5.0	-7.7	-5.1	0.12	0.02	
3,300.0	1.07	30.29	3,299.9	6.6	-7.0	-6.6	0.29	0.20	
3,400.0	1.46	37.46	3,399.8	8.4	-5.8	-8.4	0.42	0.39	
3,500.0	1.56	28.89	3,499.8	10.6	-4.3	-10.6	0.25	0.10	
3,600.0	1.36	28.35	3,599.8	12.8	-3.1	-12.8	0.20	-0.20	
3,700.0	0.46	28.81	3,699.8	14.2	-2.3	-14.2	0.90	-0.90	
3,800.0	0.08	47.12	3,799.8	14.6	-2.1	-14.6	0.38	-0.38	
3,900.0	0.19	54.41	3,899.8	14.8	-1.9	-14.8	0.11	0.11	
4,000.0	1.01	58.75	3,999.7	15.3	-1.0	-15.3	0.82	0.82	
4,100.0	1.75	42.37	4,099.7	16.9	0.8	-16.9	0.83	0.74	
4,200.0	1.93	68.96	4,199.7	18.6	3.4	-18.6	0.86	0.18	
4,300.0	3.28	64.60	4,299.6	20.5	7.5	-20.4	1.36	1.35	
4,400.0	4.09	58.31	4,399.4	23.6	13.1	-23.4	0.90	0.81	
4,500.0	4.21	52.44	4,499.1	27.7	19.1	-27.5	0.44	0.12	
4,600.0	3.39	47.79	4,598.9	31.9	24.2	-31.7	0.88	-0.82	
4,700.0	3.20	36.37	4,698.7	36.1	28.0	-35.9	0.68	-0.19	
4,800.0	2.65	21.39	4,798.6	40.5	30.5	-40.2	0.94	-0.55	
4,900.0	1.39	358.64	4,898.5	43.9	31.3	-43.6	1.47	-1.26	
5,000.0	0.52	327.77	4,998.5	45.5	31.1	-45.2	0.98	-0.87	
5,100.0	0.64	281.22	5,098.5	46.0	30.3	-45.7	0.47	0.12	
5,200.0	1.15	271.54	5,198.5	46.1	28.7	-45.9	0.53	0.51	
5,227.0	1.32	270.94	5,225.5	46.1	28.1	-45.9	0.63	0.63	
5,238.0	1.10	263.90	5,236.5	46.1	27.9	-45.9	2.41	-2.00	
5,333.0	1.40	305.00	5,331.5	46.7	26.0	-46.4	0.97	0.32	
5,426.0	4.10	345.00	5,424.3	50.6	24.3	-50.3	3.40	2.90	
5,521.0	4.40	270.80	5,519.1	53.9	19.7	-53.7	5.40	0.32	
5,618.0	10.50	229.30	5,615.3	48.2	9.3	-48.1	8.01	6.29	
5,713.0	10.90	212.80	5,708.7	35.0	-2.1	-35.0	3.24	0.42	
5,808.0	12.10	179.00	5,801.9	17.4	-6.8	-17.5	7.10	1.26	
5,902.0	11.30	168.70	5,894.0	-1.4	-4.9	1.4	2.38	-0.85	
5,996.0	10.40	178.90	5,986.3	-19.0	-2.9	18.9	2.25	-0.96	
6,091.0	11.40	178.90	6,079.6	-36.9	-2.5	36.9	1.05	1.05	
6,186.0	11.60	179.50	6,172.7	-55.9	-2.3	55.8	0.25	0.21	

Cathedral Energy Services

Survey Report

Company:	Caza Operating, LLC	Local Co-ordinate Reference:	Well West Copperline 29 State Com #3H
Project:	Lea County, NM	TVD Reference:	WELL @ 3560.0usft (Patriot #1)
Site:	West Copperline 29 State Com	MD Reference:	WELL @ 3560.0usft (Patriot #1)
Well:	West Copperline 29 State Com #3H	North Reference:	Grid
Wellbore:	Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore	Database:	USA EDM 5000 Multi Users DB

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100u)	Formations / Comments
6,281.0	13.00	178.40	6,265.5	-76.1	-1.9	76.1	1.49	1.47	
6,376.0	12.70	179.30	6,358.1	-97.2	-1.5	97.2	0.38	-0.32	
6,470.0	12.30	179.40	6,449.9	-117.6	-1.2	117.5	0.43	-0.43	
6,565.0	11.40	178.40	6,542.9	-137.1	-0.9	137.0	0.97	-0.95	
6,659.0	11.00	181.30	6,635.1	-155.3	-0.8	155.3	0.73	-0.43	
6,753.0	9.30	180.00	6,727.6	-171.9	-1.0	171.9	1.82	-1.81	
6,848.0	7.20	180.50	6,821.6	-185.5	-1.1	185.5	2.21	-2.21	
6,943.0	7.00	183.50	6,915.9	-197.2	-1.5	197.2	0.44	-0.21	
7,039.0	5.70	181.00	7,011.3	-207.8	-1.9	207.8	1.38	-1.35	
7,133.0	3.60	175.30	7,105.0	-215.4	-1.8	215.4	2.28	-2.23	
7,227.0	2.50	182.70	7,198.8	-220.4	-1.6	220.4	1.24	-1.17	
7,322.0	1.10	203.10	7,293.8	-223.3	-2.1	223.3	1.60	-1.47	
7,418.0	0.80	256.50	7,389.8	-224.3	-3.1	224.3	0.93	-0.31	
7,513.0	0.40	267.30	7,484.8	-224.5	-4.1	224.5	0.44	-0.42	
7,608.0	0.20	198.20	7,579.8	-224.7	-4.4	224.6	0.40	-0.21	
7,704.0	0.40	213.30	7,675.8	-225.1	-4.7	225.1	0.22	0.21	
7,799.0	0.60	225.70	7,770.8	-225.8	-5.2	225.7	0.24	0.21	
7,894.0	0.50	214.30	7,865.8	-226.4	-5.8	226.4	0.16	-0.11	
7,989.0	0.50	217.80	7,960.8	-227.1	-6.3	227.0	0.03	0.00	
8,085.0	0.40	178.70	8,056.7	-227.8	-6.5	227.7	0.33	-0.10	
8,180.0	0.50	189.00	8,151.7	-228.5	-6.6	228.5	0.13	0.11	
8,275.0	0.60	214.90	8,246.7	-229.3	-7.0	229.3	0.28	0.11	
8,370.0	0.70	207.70	8,341.7	-230.3	-7.5	230.2	0.14	0.11	
8,464.0	0.50	236.00	8,435.7	-231.0	-8.1	230.9	0.37	-0.21	
8,559.0	0.60	243.30	8,530.7	-231.5	-8.9	231.4	0.13	0.11	
8,653.0	0.60	228.30	8,624.7	-232.0	-9.7	231.9	0.17	0.00	
8,748.0	0.90	240.80	8,719.7	-232.7	-10.7	232.6	0.36	0.32	
8,860.0	1.10	224.10	8,831.7	-233.9	-12.2	233.8	0.31	0.18	
8,955.0	1.50	237.00	8,926.7	-235.2	-13.9	235.1	0.52	0.42	
9,049.0	0.50	272.60	9,020.7	-235.9	-15.4	235.7	1.20	-1.06	
9,144.0	0.90	237.50	9,115.6	-236.3	-16.4	236.1	0.60	0.42	
9,239.0	0.90	201.60	9,210.6	-237.4	-17.3	237.2	0.58	0.00	
9,333.0	1.80	216.90	9,304.6	-239.2	-18.5	239.0	1.02	0.96	
9,428.0	0.80	345.80	9,399.6	-239.8	-19.5	239.6	2.51	-1.05	
9,523.0	1.50	352.60	9,494.6	-237.9	-19.9	237.7	0.75	0.74	
9,618.0	0.70	347.20	9,589.6	-236.1	-20.1	235.9	0.85	-0.84	
9,713.0	0.90	354.00	9,684.6	-234.8	-20.3	234.6	0.23	0.21	
9,808.0	1.30	345.30	9,779.5	-233.0	-20.7	232.8	0.46	0.42	
9,902.0	1.10	344.20	9,873.5	-231.1	-21.2	230.9	0.21	-0.21	
9,997.0	1.00	321.10	9,968.5	-229.6	-22.0	229.4	0.45	-0.11	
10,091.0	0.70	324.10	10,062.5	-228.5	-22.8	228.3	0.32	-0.32	
10,186.0	0.60	343.70	10,157.5	-227.5	-23.3	227.3	0.25	-0.11	
10,281.0	0.40	359.10	10,252.5	-226.7	-23.5	226.5	0.25	-0.21	
10,390.0	0.10	237.80	10,361.5	-226.4	-23.5	226.2	0.42	-0.28	
10,484.0	0.30	200.90	10,455.5	-226.7	-23.7	226.4	0.24	0.21	
10,579.0	0.20	144.80	10,550.5	-227.0	-23.7	226.8	0.26	-0.11	
10,673.0	0.70	211.80	10,644.5	-227.7	-23.9	227.4	0.69	0.53	
10,768.0	0.70	209.60	10,739.5	-228.7	-24.5	228.4	0.03	0.00	
10,853.0	0.90	233.80	10,824.5	-229.5	-25.3	229.3	0.46	0.24	
10,943.0	4.70	172.30	10,914.3	-233.6	-25.4	233.3	4.83	4.22	
10,974.0	8.40	167.90	10,945.1	-237.1	-24.7	236.8	12.04	11.94	
11,006.0	11.90	166.10	10,976.6	-242.5	-23.4	242.3	10.98	10.94	
11,037.0	15.20	165.30	11,006.8	-249.6	-21.6	249.4	10.66	10.65	

Cathedral Energy Services

Survey Report

Company:	Caza Operating, LLC	Local Co-ordinate Reference:	Well West Copperline 29 State Com #3H
Project:	Lea County, NM	TVD Reference:	WELL @ 3560.0usft (Patriot #1)
Site:	West Copperline 29 State Com	MD Reference:	WELL @ 3560.0usft (Patriot #1)
Well:	West Copperline 29 State Com #3H	North Reference:	Grid
Wellbore:	Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore	Database:	USA EDM 5000 Multi Users DB

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Formations / Comments
11,069.0	19.90	167.80	11,037.3	-259.0	-19.4	258.8	14.87	14.69	
11,100.0	22.90	169.10	11,066.1	-270.0	-17.2	269.9	9.80	9.68	
11,132.0	24.90	170.40	11,095.4	-282.8	-14.9	282.7	6.46	6.25	
11,164.0	27.80	172.60	11,124.1	-296.8	-12.8	296.7	9.56	9.06	
11,195.0	30.90	171.90	11,151.1	-311.9	-10.7	311.8	10.06	10.00	
11,227.0	34.30	173.00	11,178.0	-329.0	-8.5	328.9	10.78	10.62	
11,259.0	37.50	174.90	11,203.9	-347.6	-6.5	347.6	10.59	10.00	
11,290.0	40.00	176.60	11,228.1	-367.0	-5.1	366.9	8.76	8.06	
11,322.0	42.60	177.70	11,252.2	-388.1	-4.0	388.0	8.44	8.12	
11,385.0	48.00	177.40	11,296.5	-432.8	-2.1	432.8	8.58	8.57	
11,417.0	50.90	177.50	11,317.3	-457.1	-1.0	457.1	9.07	9.06	
11,449.0	54.40	177.70	11,336.7	-482.5	0.0	482.5	10.95	10.94	
11,480.0	57.80	177.70	11,354.0	-508.2	1.1	508.2	10.97	10.97	
11,512.0	61.30	178.70	11,370.2	-535.8	1.9	535.8	11.26	10.94	
11,543.0	64.60	179.40	11,384.3	-563.4	2.4	563.4	10.83	10.65	
11,575.0	67.90	178.40	11,397.2	-592.7	2.9	592.7	10.70	10.31	
11,606.0	70.90	178.10	11,408.1	-621.7	3.8	621.7	9.72	9.68	
11,638.0	74.50	177.90	11,417.6	-652.2	4.9	652.2	11.27	11.25	
11,647.0	75.10	177.90	11,419.9	-660.9	5.2	660.9	6.68	6.68	
11,678.0	78.80	178.40	11,426.9	-691.0	6.2	691.1	12.04	11.94	
11,710.0	80.50	179.00	11,432.7	-722.5	6.9	722.5	5.62	5.31	
11,741.0	81.50	178.80	11,437.5	-753.1	7.5	753.1	3.29	3.23	
11,772.0	82.50	178.80	11,441.8	-783.8	8.1	783.8	3.23	3.23	
11,803.0	83.80	178.80	11,445.5	-814.6	8.8	814.6	4.19	4.19	
11,835.0	86.20	178.10	11,448.3	-846.5	9.6	846.5	7.80	7.49	
11,898.0	90.40	177.10	11,450.2	-909.4	12.3	909.4	6.85	6.67	
11,993.0	91.20	177.10	11,448.9	-1,004.2	17.1	1,004.3	0.84	0.84	
12,086.0	90.20	178.10	11,447.7	-1,097.1	21.0	1,097.3	1.52	-1.08	
12,182.0	89.50	177.60	11,448.0	-1,193.1	24.6	1,193.2	0.90	-0.73	
12,276.0	89.30	178.10	11,449.0	-1,287.0	28.1	1,287.2	0.57	-0.21	
12,371.0	91.10	179.30	11,448.6	-1,382.0	30.3	1,382.2	2.28	1.89	
12,466.0	91.70	179.20	11,446.3	-1,476.9	31.5	1,477.2	0.64	0.63	
12,560.0	91.40	179.40	11,443.8	-1,570.9	32.7	1,571.1	0.38	-0.32	
12,654.0	89.40	179.00	11,443.1	-1,664.9	34.0	1,665.1	2.17	-2.13	
12,748.0	90.20	179.10	11,443.4	-1,758.9	35.5	1,759.1	0.86	0.85	
12,843.0	91.60	179.10	11,442.0	-1,853.8	37.0	1,854.1	1.47	1.47	
12,931.0	89.70	179.80	11,441.0	-1,941.8	37.9	1,942.1	2.30	-2.16	
13,026.0	90.10	179.70	11,441.1	-2,036.8	38.3	2,037.1	0.43	0.42	
13,121.0	89.40	178.90	11,441.5	-2,131.8	39.4	2,132.1	1.12	-0.74	
13,215.0	89.50	177.90	11,442.4	-2,225.8	42.1	2,226.1	1.07	0.11	
13,311.0	90.30	179.10	11,442.6	-2,321.7	44.6	2,322.0	1.50	0.83	
13,406.0	91.00	178.90	11,441.5	-2,416.7	46.2	2,417.0	0.77	0.74	
13,501.0	91.40	179.10	11,439.5	-2,511.7	47.9	2,512.0	0.47	0.42	
13,596.0	91.30	179.70	11,437.3	-2,606.6	48.9	2,607.0	0.64	-0.11	
13,691.0	91.30	181.20	11,435.1	-2,701.6	48.1	2,701.9	1.58	0.00	
13,787.0	91.90	181.50	11,432.5	-2,797.5	45.9	2,797.9	0.70	0.62	
13,882.0	90.50	182.00	11,430.5	-2,892.5	43.0	2,892.8	1.56	-1.47	
13,977.0	90.90	182.00	11,429.3	-2,987.4	39.7	2,987.7	0.42	0.42	
14,072.0	91.30	181.80	11,427.5	-3,082.3	36.5	3,082.6	0.47	0.42	
14,167.0	91.60	182.00	11,425.1	-3,177.3	33.4	3,177.4	0.38	0.32	
14,262.0	91.70	181.80	11,422.3	-3,272.2	30.2	3,272.3	0.24	0.11	
14,357.0	91.80	181.40	11,419.4	-3,367.1	27.6	3,367.2	0.43	0.11	
14,452.0	90.20	181.40	11,417.8	-3,462.0	25.2	3,462.1	1.68	-1.68	

Cathedral Energy Services

Survey Report

Company:	Caza Operating, LLC	Local Co-ordinate Reference:	Well West Copperline 29 State Com #3H
Project:	Lea County, NM	TVD Reference:	WELL @ 3560.0usft (Patriot #1)
Site:	West Copperline 29 State Com	MD Reference:	WELL @ 3560.0usft (Patriot #1)
Well:	West Copperline 29 State Com #3H	North Reference:	Grid
Wellbore:	Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore	Database:	USA EDM 5000 Multi Users DB

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100u)	Formations / Comments
14,548.0	90.20	180.70	11,417.5	-3,558.0	23.5	3,558.1	0.73	0.00	
14,643.0	90.20	180.40	11,417.1	-3,653.0	22.6	3,653.1	0.32	0.00	
14,738.0	90.60	180.00	11,416.5	-3,748.0	22.2	3,748.1	0.60	0.42	
14,833.0	90.90	179.70	11,415.2	-3,843.0	22.5	3,843.1	0.45	0.32	
14,929.0	91.30	179.00	11,413.4	-3,939.0	23.6	3,939.0	0.84	0.42	
15,024.0	91.60	179.00	11,411.0	-4,033.9	25.2	4,034.0	0.32	0.32	
15,119.0	92.10	178.90	11,407.9	-4,128.9	27.0	4,128.9	0.54	0.53	
15,211.0	90.60	178.90	11,405.7	-4,220.8	28.7	4,220.9	1.63	-1.63	
15,306.0	91.30	179.00	11,404.2	-4,315.8	30.5	4,315.9	0.74	0.74	
15,401.0	91.50	178.90	11,401.8	-4,410.8	32.2	4,410.9	0.24	0.21	
15,496.0	92.40	178.60	11,398.6	-4,505.7	34.3	4,505.8	1.00	0.95	
15,591.0	92.30	177.90	11,394.7	-4,600.6	37.2	4,600.7	0.74	-0.11	
15,686.0	92.50	177.50	11,390.7	-4,695.4	41.0	4,695.6	0.47	0.21	
15,750.0	93.00	177.30	11,387.7	-4,759.3	43.9	4,759.5	0.84	0.78	Last CES Survey @ 15750' MD
15,804.0	93.00	177.30	11,384.8	-4,813.1	46.4	4,813.3	0.00	0.00	Bit Projection @ 15804' MD

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL W.CL. 29 St. Cor	0.00	0.00	11,445.0	-4,797.8	44.2	462,641.80	759,518.10	32° 16' 8.862 N	103° 29' 37.375 W
- actual wellpath misses target center by 59.3usft at 15785.5usft MD (11385.8 TVD, -4794.6 N, 45.6 E)									
- Point									

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
15,750.0	11,387.7	-4,759.3	43.9	Last CES Survey @ 15750' MD	
15,804.0	11,384.8	-4,813.1	46.4	Bit Projection @ 15804' MD	

Checked By: _____	Approved By: _____	Date: _____
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