

CONFIDENTIAL

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

District II
811 S. First Street, 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 Drive, Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised August 1, 2011

Submit one copy to
Appropriate District Office

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

☐ AMENDED REPORT
☒ As-Drilled

RCVD NOV 26 '12
OIL CONS. DIV.
DIST. 3

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-039-31134	*Pool Code 22619	*Pool Name ESCRITO GALLUP (ASSOCIATED)
*Property Code 39374	*Property Name ESCRITO A36-2407	*Well Number 01H
*OGRID No. 282327	*Operator Name ENCANA OIL & GAS (USA) INC.	*Elevation 6697'

¹⁰ Surface Location

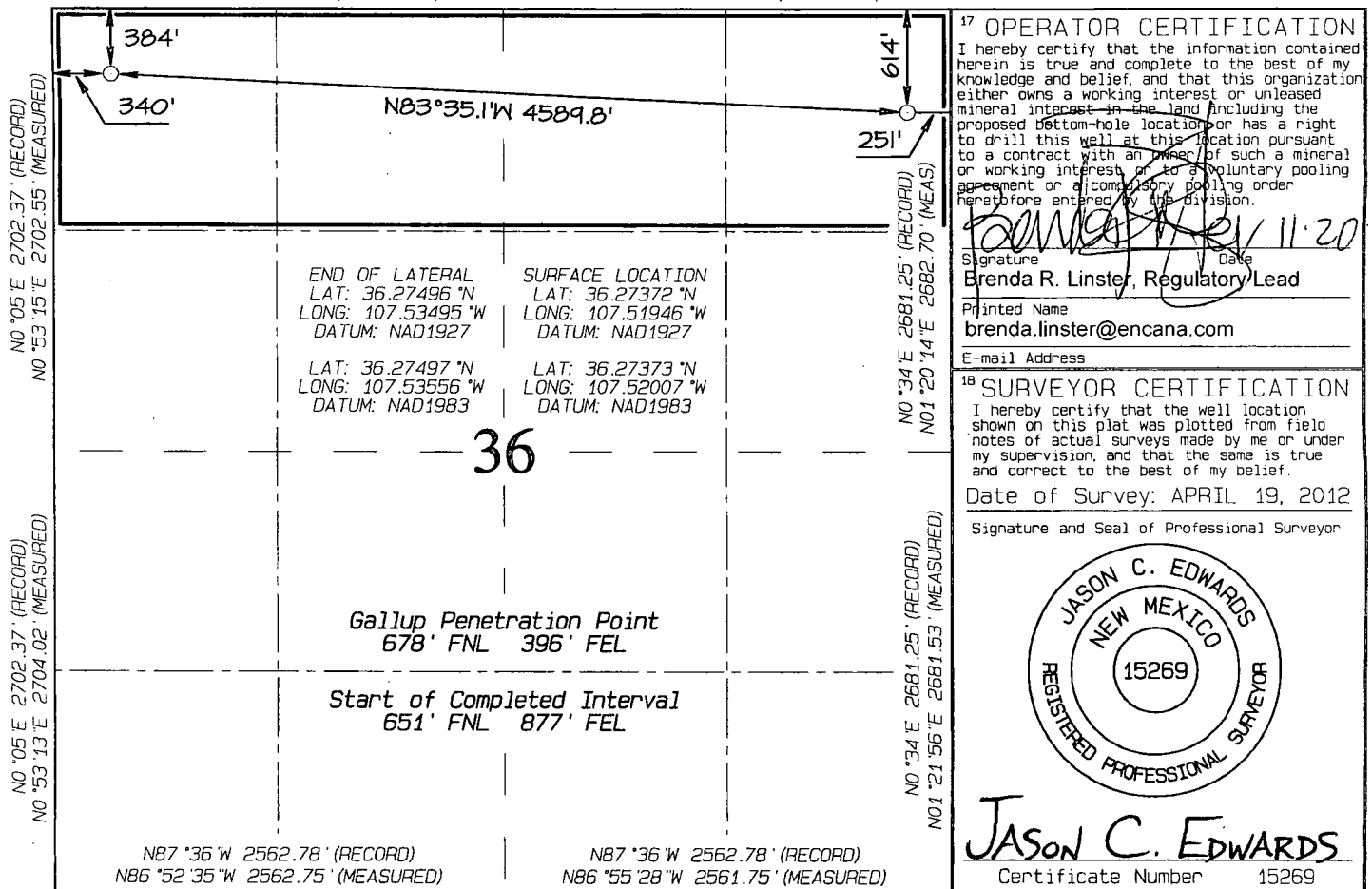
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	36	24N	7W		614	NORTH	251	EAST	RIO ARriba

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	36	24N	7W		384	NORTH	340	WEST	RIO ARriba
¹² Dedicated Acres 160.0 Acres - (N/2 N/2)					¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.		

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

¹⁶ N87°11'W 2586.54' (RECORD) N87°11'W 2586.54' (RECORD)
N86°26'40"W 2584.56' (MEASURED) N86°27'07"W 2585.17' (MEASURED)



DEVIATION SURVEYS

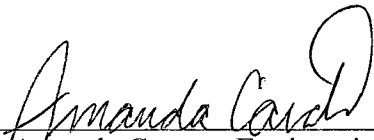
MD (Feet)	Inclination (Degree)
250	0.5
1045	1
1557	0.75
2058	1
2658	1.5
3169	1.25
3677	1
4188	1

RCVD NOV 26 '12
OIL CONS. DIV.
DIST. 3

CONFIDENTIAL

OPERATOR CERTIFICATION

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



Amanda Cavoto, Engineering Technologist

11/20/12

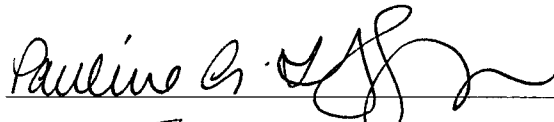
ACKNOWLEDGMENT

State of Colorado
City and County of Denver

This instrument was acknowledged before me on this 20th day of November, 2012 by Amanda Cavoto as Attorney in Fact of Encana Oil & Gas (USA) Inc., on behalf of said corporation.

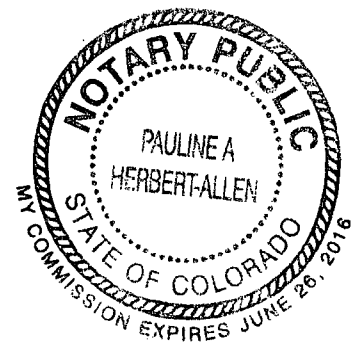
In witness whereof, I hereunto set my hand and official seal.

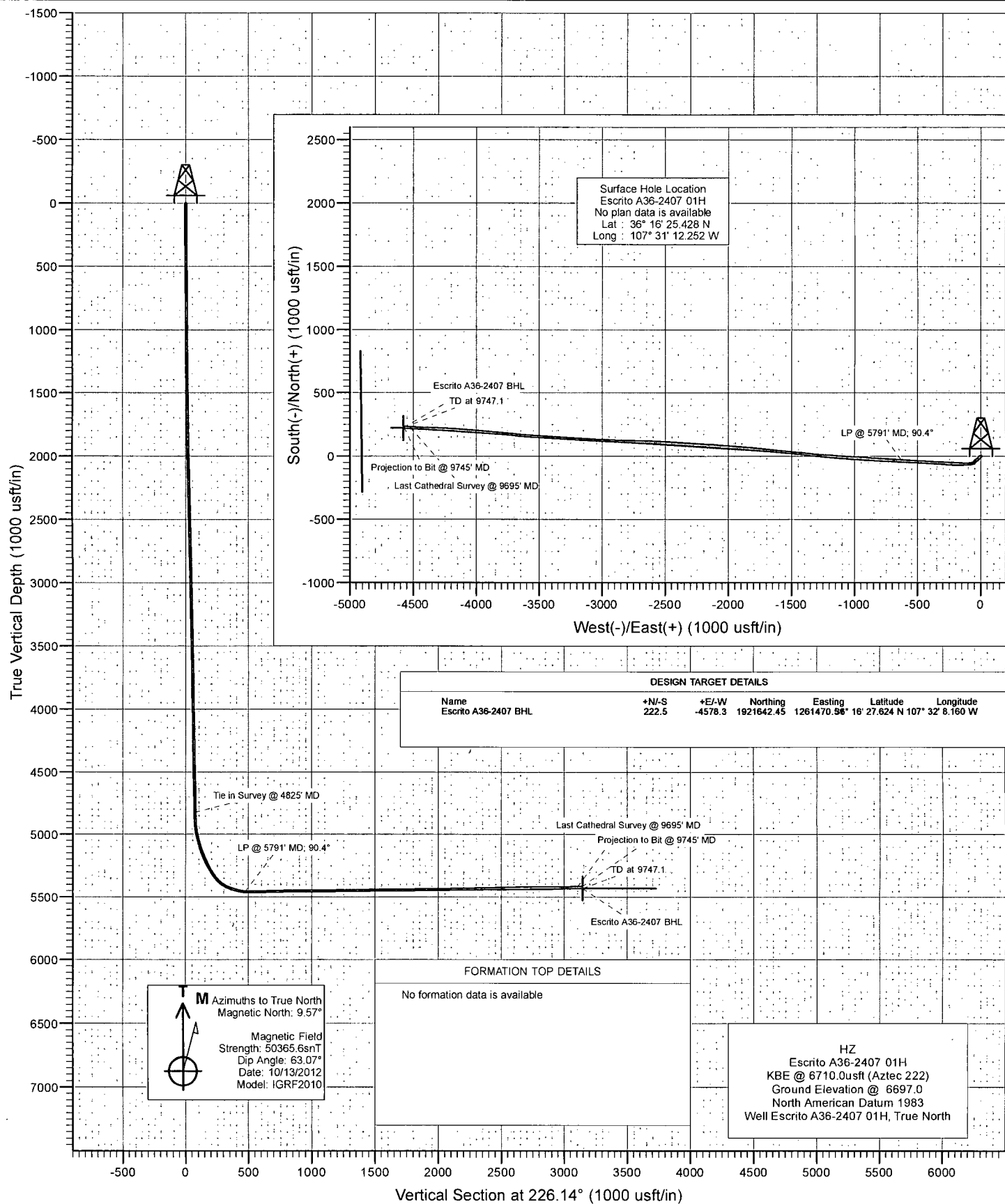
Notary Public:



My Commission Expires:

June 26, 2016





Cathedral Energy Services

Survey Report

Company: EnCana Oil & Gas (USA) Inc
Project: Rio Arriba County, NM
Site: Escrito A36-2407
Well: Escrito A36-2407 01H
Wellbore: HZ
Design: HZ

Local Co-ordinate Reference: Well Escrito A36-2407 01H
TVD Reference: KBE @ 6710.0ft (Aztec 222)
MD Reference: KBE @ 6710.0ft (Aztec 222)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Project	Rio Arriba County, NM		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Central Zone		

Site	Escrito A36-2407		
Site Position:		Northing:	1,921,363.81 ft
From:	Lat/Long	Easting:	1,266,048.02 ft
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in
		Latitude:	36.273730
		Longitude:	-107.520070
		Grid Convergence:	-0.75 °

Well	Escrito A36-2407 01H		
Well Position	+N-S	0.0 ft	Northing: 1,921,363.81 ft
	+E-W	0.0 ft	Easting: 1,266,048.02 ft
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	36.273730
		Longitude:	-107.520070
		Ground Level:	6,697.0 ft

Wellbore	HZ		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010	10/13/2012	9.57
			Dip Angle
			(°)
			63.07
			Field Strength
			(nT)
			50,366

Design	HZ		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N-S	+E-W
	(ft)	(ft)	(ft)
	0.0	0.0	0.0
			Direction
			(°)
			226.14

Survey Program	Date 11/6/2012		
From	To	Survey (Wellbore)	Tool Name
(ft)	(ft)		
100.5	4,825.6	Survey #1 (HZ)	Gyro
4,887.0	9,745.0	Survey #2 (HZ)	MWD
			Description
			Gyro
			Geolink MWD

Survey										
Measured	Inclination	Azimuth	Vertical	+N-S	+E-W	Vertical	Dogleg	Build	Formations /	
Depth	(°)	(°)	Depth	(ft)	(ft)	Section	Rate	Rate	Comments	
(ft)			(ft)			(ft)	(°/100ft)	(°/100ft)		
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00		
100.5	0.44	217.53	100.5	-0.3	-0.2	0.4	0.44	0.44		
126.1	0.48	217.21	126.1	-0.5	-0.4	0.6	0.16	0.16		
150.6	0.48	249.03	150.5	-0.6	-0.5	0.8	1.08	0.00		
175.1	0.54	231.96	175.1	-0.7	-0.7	1.0	0.66	0.24		
200.2	0.54	234.33	200.2	-0.8	-0.9	1.2	0.09	0.00		
225.2	0.56	245.03	225.2	-1.0	-1.1	1.5	0.42	0.08		
250.5	0.59	232.68	250.5	-1.1	-1.3	1.7	0.50	0.12		
275.1	0.59	244.17	275.1	-1.2	-1.5	2.0	0.48	0.00		
301.4	0.60	246.38	301.4	-1.3	-1.8	2.2	0.10	0.04		
326.0	0.53	254.53	326.0	-1.4	-2.0	2.4	0.43	-0.28		
350.9	0.63	241.14	350.9	-1.5	-2.2	2.7	0.67	0.40		

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North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
375.8	0.61	244.02	375.8	-1.6	-2.5	2.9	0.15	-0.08	
400.3	0.62	239.82	400.3	-1.8	-2.7	3.2	0.19	0.04	
425.7	0.58	252.41	425.7	-1.9	-2.9	3.4	0.54	-0.16	
451.8	0.76	223.15	451.8	-2.0	-3.2	3.7	1.46	0.69	
475.9	0.61	252.17	475.9	-2.2	-3.4	4.0	1.55	-0.62	
500.6	0.60	251.34	500.6	-2.3	-3.7	4.2	0.05	-0.04	
525.4	0.69	241.20	525.3	-2.4	-3.9	4.5	0.59	0.36	
550.2	0.56	246.68	550.2	-2.5	-4.2	4.7	0.58	-0.52	
575.5	0.60	250.79	575.5	-2.6	-4.4	5.0	0.23	0.16	
601.7	0.63	238.77	601.6	-2.7	-4.7	5.2	0.51	0.11	
625.9	0.67	246.68	625.8	-2.8	-4.9	5.5	0.41	0.17	
650.7	0.72	242.23	650.7	-3.0	-5.2	5.8	0.30	0.20	
675.5	0.64	251.13	675.5	-3.1	-5.4	6.1	0.53	-0.32	
700.4	0.60	250.20	700.4	-3.2	-5.7	6.3	0.17	-0.16	
726.0	0.57	245.11	725.9	-3.3	-5.9	6.6	0.23	-0.12	
750.3	0.54	248.88	750.2	-3.4	-6.2	6.8	0.19	-0.12	
775.4	0.53	259.87	775.3	-3.4	-6.4	7.0	0.41	-0.04	
800.1	0.49	255.34	800.1	-3.5	-6.6	7.2	0.23	-0.16	
825.1	0.43	258.16	825.1	-3.5	-6.8	7.3	0.26	-0.24	
851.5	0.46	261.22	851.5	-3.6	-7.0	7.5	0.14	0.11	
876.0	0.40	259.06	876.0	-3.6	-7.2	7.7	0.25	-0.24	
900.7	0.43	262.05	900.7	-3.6	-7.4	7.8	0.15	0.12	
926.1	0.53	256.34	926.1	-3.7	-7.6	8.0	0.44	0.39	
950.5	0.41	251.64	950.4	-3.7	-7.8	8.2	0.52	-0.49	
975.5	0.41	257.86	975.4	-3.8	-7.9	8.3	0.18	0.00	
1,001.2	0.31	215.16	1,001.2	-3.8	-8.1	8.5	1.08	-0.39	
1,026.2	0.42	243.05	1,026.2	-3.9	-8.2	8.6	0.82	0.44	
1,050.7	0.43	233.77	1,050.6	-4.0	-8.3	8.8	0.28	0.04	
1,076.3	0.38	216.82	1,076.3	-4.2	-8.5	9.0	0.50	-0.20	
1,101.2	0.40	227.40	1,101.1	-4.3	-8.6	9.1	0.30	0.08	
1,125.2	0.41	210.84	1,125.2	-4.4	-8.7	9.3	0.49	0.04	
1,150.9	0.40	217.13	1,150.8	-4.6	-8.8	9.5	0.18	-0.04	
1,176.1	0.43	219.98	1,176.0	-4.7	-8.9	9.7	0.14	0.12	
1,201.4	0.45	213.55	1,201.3	-4.9	-9.0	9.9	0.21	0.08	
1,225.9	0.46	199.98	1,225.9	-5.0	-9.1	10.0	0.44	0.04	
1,250.8	0.51	197.39	1,250.8	-5.2	-9.2	10.2	0.22	0.20	
1,275.9	0.49	190.15	1,275.8	-5.4	-9.2	10.4	0.26	-0.08	
1,301.0	0.51	189.55	1,300.9	-5.7	-9.3	10.6	0.08	0.08	
1,326.5	0.49	192.45	1,326.5	-5.9	-9.3	10.8	0.13	-0.08	
1,351.1	0.57	191.22	1,351.1	-6.1	-9.3	11.0	0.33	0.32	
1,375.9	0.62	200.54	1,375.8	-6.4	-9.4	11.2	0.44	0.20	
1,401.0	0.61	207.56	1,400.9	-6.6	-9.5	11.4	0.30	-0.04	
1,426.2	0.65	212.74	1,426.2	-6.8	-9.7	11.7	0.28	0.16	
1,451.4	0.65	226.71	1,451.4	-7.1	-9.8	12.0	0.63	0.00	
1,476.1	0.65	221.41	1,476.1	-7.3	-10.0	12.3	0.24	0.00	
1,501.0	0.65	216.78	1,500.9	-7.5	-10.2	12.5	0.21	0.00	
1,525.5	0.78	215.74	1,525.4	-7.7	-10.4	12.8	0.53	0.53	
1,550.1	0.87	220.87	1,550.0	-8.0	-10.6	13.2	0.47	0.37	
1,576.6	0.77	220.79	1,576.5	-8.3	-10.9	13.6	0.38	-0.38	
1,601.5	0.73	222.10	1,601.4	-8.5	-11.1	13.9	0.17	-0.16	
1,626.1	0.65	229.77	1,626.0	-8.7	-11.3	14.2	0.50	-0.33	
1,650.0	0.77	210.63	1,649.9	-9.0	-11.5	14.5	1.10	0.50	
1,675.3	0.90	213.26	1,675.2	-9.3	-11.7	14.8	0.54	0.51	

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Database: USA EDM 5000 Multi Users DB

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
1,700.1	0.79	220.25	1,700.0	-9.6	-11.9	15.2	0.61	-0.44	
1,726.7	0.89	206.76	1,726.6	-9.9	-12.1	15.6	0.83	0.38	
1,750.4	1.05	207.76	1,750.3	-10.2	-12.3	16.0	0.68	0.68	
1,775.5	0.93	205.21	1,775.4	-10.6	-12.5	16.4	0.51	-0.48	
1,800.8	1.04	202.29	1,800.7	-11.0	-12.7	16.8	0.48	0.43	
1,825.6	1.12	211.35	1,825.5	-11.4	-12.9	17.2	0.76	0.32	
1,851.6	1.29	199.90	1,851.5	-11.9	-13.1	17.7	1.13	0.65	
1,876.0	1.38	203.66	1,875.9	-12.5	-13.3	18.2	0.52	0.37	
1,900.7	1.20	209.96	1,900.6	-13.0	-13.6	18.8	0.92	-0.73	
1,925.7	1.16	201.72	1,925.6	-13.4	-13.8	19.2	0.70	-0.16	
1,950.5	1.28	201.27	1,950.3	-13.9	-14.0	19.7	0.49	0.48	
1,976.1	1.33	209.49	1,975.9	-14.4	-14.2	20.3	0.76	0.20	
2,000.4	1.21	207.09	2,000.2	-14.9	-14.5	20.8	0.54	-0.49	
2,025.3	1.20	211.73	2,025.1	-15.4	-14.7	21.3	0.39	-0.04	
2,050.2	1.21	209.43	2,050.0	-15.8	-15.0	21.8	0.20	0.04	
2,075.1	1.20	210.67	2,074.9	-16.3	-15.3	22.3	0.11	-0.04	
2,101.2	1.10	208.96	2,101.1	-16.7	-15.5	22.8	0.40	-0.38	
2,125.6	1.16	216.39	2,125.4	-17.1	-15.8	23.3	0.65	0.25	
2,150.2	1.11	220.99	2,150.0	-17.5	-16.1	23.7	0.42	-0.20	
2,175.0	0.96	218.11	2,174.9	-17.9	-16.4	24.2	0.64	-0.60	
2,201.2	1.11	216.62	2,201.0	-18.2	-16.7	24.7	0.58	0.57	
2,226.2	1.08	220.28	2,226.0	-18.6	-17.0	25.1	0.30	-0.12	
2,250.8	1.12	217.88	2,250.6	-19.0	-17.3	25.6	0.25	0.16	
2,275.1	1.23	218.27	2,274.9	-19.4	-17.6	26.1	0.45	0.45	
2,301.3	1.37	222.74	2,301.1	-19.8	-17.9	26.7	0.66	0.53	
2,326.3	1.17	222.58	2,326.1	-20.2	-18.3	27.2	0.80	-0.80	
2,350.2	1.22	219.08	2,350.0	-20.6	-18.6	27.7	0.37	0.21	
2,376.3	1.20	222.74	2,376.1	-21.0	-19.0	28.3	0.31	-0.08	
2,400.8	1.30	217.26	2,400.6	-21.4	-19.4	28.8	0.64	0.41	
2,425.3	1.25	224.13	2,425.0	-21.8	-19.7	29.3	0.66	-0.20	
2,451.1	1.22	218.41	2,450.8	-22.3	-20.1	29.9	0.49	-0.12	
2,475.4	1.29	214.69	2,475.2	-22.7	-20.4	30.4	0.44	0.29	
2,500.5	1.22	217.09	2,500.2	-23.1	-20.7	31.0	0.35	-0.28	
2,525.0	1.34	221.72	2,524.8	-23.6	-21.1	31.5	0.65	0.49	
2,550.7	1.21	220.17	2,550.5	-24.0	-21.4	32.1	0.52	-0.51	
2,575.5	1.17	224.61	2,575.3	-24.4	-21.8	32.6	0.41	-0.16	
2,601.1	1.32	235.22	2,600.8	-24.7	-22.2	33.1	1.07	0.59	
2,625.7	1.23	238.84	2,625.4	-25.0	-22.7	33.7	0.49	-0.37	
2,650.2	1.11	241.40	2,649.9	-25.3	-23.1	34.2	0.53	-0.49	
2,675.5	1.09	244.11	2,675.2	-25.5	-23.5	34.6	0.22	-0.08	
2,701.3	1.39	243.15	2,701.0	-25.7	-24.0	35.2	1.16	1.16	
2,725.3	1.26	243.82	2,725.0	-26.0	-24.5	35.7	0.55	-0.54	
2,750.1	1.26	238.07	2,749.8	-26.3	-25.0	36.2	0.51	0.00	
2,775.2	1.46	239.28	2,774.8	-26.6	-25.5	36.8	0.81	0.80	
2,800.3	1.42	244.42	2,800.0	-26.9	-26.1	37.4	0.54	-0.16	
2,826.2	1.32	241.77	2,825.9	-27.1	-26.6	38.0	0.46	-0.39	
2,850.2	1.39	246.42	2,849.9	-27.4	-27.1	38.5	0.54	0.29	
2,875.6	1.33	241.98	2,875.3	-27.7	-27.7	39.1	0.48	-0.24	
2,900.2	1.39	248.07	2,899.9	-27.9	-28.2	39.7	0.64	0.24	
2,926.2	1.44	246.73	2,925.9	-28.1	-28.8	40.3	0.23	0.19	
2,950.7	1.41	239.48	2,950.3	-28.4	-29.3	40.8	0.75	-0.12	
2,975.3	1.42	240.89	2,974.9	-28.7	-29.9	41.4	0.15	0.04	
3,000.6	1.33	238.70	3,000.2	-29.0	-30.4	42.0	0.41	-0.36	

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3,026.4	1.30	237.08	3,026.1	-29.3	-30.9	42.6	0.18	-0.12	
3,050.6	1.26	236.08	3,050.2	-29.6	-31.3	43.1	0.19	-0.17	
3,075.2	1.29	235.01	3,074.8	-29.9	-31.8	43.7	0.16	0.12	
3,101.2	1.27	236.20	3,100.8	-30.3	-32.3	44.2	0.13	-0.08	
3,125.7	1.18	233.84	3,125.3	-30.6	-32.7	44.8	0.42	-0.37	
3,151.6	1.13	237.82	3,151.2	-30.9	-33.1	45.3	0.37	-0.19	
3,175.8	1.14	238.44	3,175.3	-31.1	-33.5	45.7	0.07	0.04	
3,201.1	1.08	236.61	3,200.6	-31.4	-34.0	46.2	0.28	-0.24	
3,225.7	1.10	237.25	3,225.2	-31.6	-34.3	46.7	0.10	0.08	
3,250.3	1.10	241.34	3,249.9	-31.9	-34.8	47.1	0.32	0.00	
3,275.9	1.08	232.67	3,275.5	-32.1	-35.2	47.6	0.65	-0.08	
3,301.1	1.18	230.69	3,300.6	-32.5	-35.5	48.1	0.43	0.40	
3,326.4	1.26	238.92	3,325.9	-32.8	-36.0	48.6	0.76	0.32	
3,350.0	1.17	240.01	3,349.6	-33.0	-36.4	49.1	0.39	-0.38	
3,376.5	1.20	242.60	3,376.1	-33.3	-36.9	49.7	0.23	0.11	
3,400.1	1.31	248.19	3,399.6	-33.5	-37.4	50.2	0.70	0.47	
3,426.0	1.33	250.05	3,425.5	-33.7	-37.9	50.7	0.18	0.08	
3,450.8	1.36	251.85	3,450.3	-33.9	-38.5	51.2	0.21	0.12	
3,476.1	1.37	249.71	3,475.6	-34.1	-39.0	51.8	0.21	0.04	
3,500.2	1.51	247.41	3,499.7	-34.3	-39.6	52.3	0.63	0.58	
3,525.6	1.47	246.77	3,525.1	-34.6	-40.2	53.0	0.17	-0.16	
3,550.5	1.45	247.23	3,550.0	-34.8	-40.8	53.5	0.09	-0.08	
3,575.8	1.35	242.89	3,575.3	-35.1	-41.4	54.1	0.57	-0.39	
3,600.2	1.21	236.79	3,599.7	-35.4	-41.8	54.7	0.80	-0.57	
3,625.6	1.16	233.38	3,625.0	-35.7	-42.3	55.2	0.34	-0.20	
3,650.9	1.07	231.37	3,650.4	-36.0	-42.7	55.7	0.39	-0.35	
3,675.8	0.91	223.07	3,675.2	-36.2	-43.0	56.1	0.86	-0.64	
3,701.2	0.92	223.16	3,700.6	-36.5	-43.2	56.5	0.04	0.04	
3,725.4	0.85	220.03	3,724.8	-36.8	-43.5	56.9	0.35	-0.29	
3,750.3	0.81	209.55	3,749.8	-37.1	-43.7	57.2	0.63	-0.16	
3,775.7	0.80	214.32	3,775.2	-37.4	-43.9	57.6	0.27	-0.04	
3,800.7	0.84	213.46	3,800.1	-37.7	-44.1	57.9	0.17	0.16	
3,826.1	0.84	215.23	3,825.6	-38.0	-44.3	58.3	0.10	0.00	
3,850.3	0.84	211.31	3,849.8	-38.3	-44.5	58.6	0.24	0.00	
3,875.8	0.84	211.82	3,875.2	-38.6	-44.7	59.0	0.03	0.00	
3,900.1	0.80	210.96	3,899.6	-38.9	-44.9	59.3	0.17	-0.16	
3,925.5	0.78	208.56	3,925.0	-39.2	-45.0	59.7	0.15	-0.08	
3,950.5	0.77	212.78	3,949.9	-39.5	-45.2	60.0	0.23	-0.04	
3,975.6	0.78	204.78	3,975.0	-39.8	-45.4	60.3	0.43	0.04	
4,001.6	0.69	210.26	4,001.1	-40.1	-45.5	60.6	0.44	-0.35	
4,026.1	0.73	206.05	4,025.5	-40.4	-45.7	60.9	0.27	0.16	
4,051.1	0.79	209.49	4,050.5	-40.7	-45.8	61.2	0.30	0.24	
4,075.4	0.78	211.91	4,074.8	-41.0	-46.0	61.6	0.14	-0.04	
4,100.9	0.88	220.70	4,100.3	-41.3	-46.2	61.9	0.63	0.39	
4,125.8	0.95	221.65	4,125.2	-41.6	-46.5	62.3	0.29	0.28	
4,150.8	0.97	222.46	4,150.2	-41.9	-46.8	62.7	0.10	0.08	
4,175.7	0.92	226.78	4,175.1	-42.2	-47.1	63.1	0.35	-0.20	
4,200.7	1.04	226.36	4,200.1	-42.5	-47.4	63.6	0.48	0.48	
4,225.1	0.94	226.82	4,224.5	-42.7	-47.7	64.0	0.41	-0.41	
4,250.1	0.99	226.82	4,249.5	-43.0	-48.0	64.4	0.20	0.20	
4,276.2	0.97	227.42	4,275.6	-43.3	-48.3	64.9	0.09	-0.08	
4,300.7	1.03	226.20	4,300.1	-43.6	-48.6	65.3	0.26	0.24	
4,325.7	0.93	224.45	4,325.1	-43.9	-48.9	65.7	0.42	-0.40	

Cathedral Energy Services

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Well: Escrito A36-2407 01H
Wellbore: HZ
Design: HZ

Local Co-ordinate Reference: Well Escrito A36-2407 01H
TVD Reference: KBE @ 6710.0ft (Aztec 222)
MD Reference: KBE @ 6710.0ft (Aztec 222)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
4,351.3	0.93	221.30	4,350.7	-44.2	-49.2	66.1	0.20	0.00	
4,375.7	0.96	220.84	4,375.1	-44.5	-49.5	66.5	0.13	0.12	
4,400.7	0.93	219.70	4,400.1	-44.9	-49.7	66.9	0.14	-0.12	
4,425.6	1.00	216.28	4,425.0	-45.2	-50.0	67.4	0.36	0.28	
4,450.7	0.96	215.92	4,450.1	-45.5	-50.2	67.8	0.16	-0.16	
4,475.8	1.06	209.76	4,475.2	-45.9	-50.5	68.2	0.59	0.40	
4,500.6	1.07	211.66	4,499.9	-46.3	-50.7	68.6	0.15	0.04	
4,525.6	1.19	207.72	4,525.0	-46.7	-51.0	69.1	0.57	0.48	
4,550.8	1.23	212.27	4,550.2	-47.2	-51.2	69.6	0.41	0.16	
4,575.9	1.14	213.65	4,575.2	-47.6	-51.5	70.1	0.38	-0.36	
4,600.1	1.11	213.62	4,599.5	-48.0	-51.8	70.6	0.12	-0.12	
4,625.1	1.12	212.76	4,624.5	-48.4	-52.0	71.1	0.08	0.04	
4,650.9	0.96	212.54	4,650.2	-48.8	-52.3	71.5	0.62	-0.62	
4,675.7	0.90	213.48	4,675.0	-49.2	-52.5	71.9	0.25	-0.24	
4,700.1	0.85	215.89	4,699.5	-49.5	-52.7	72.3	0.25	-0.20	
4,725.1	0.86	209.49	4,724.4	-49.8	-52.9	72.7	0.38	0.04	
4,750.5	0.94	204.02	4,749.8	-50.1	-53.1	73.0	0.46	0.32	
4,775.9	1.14	197.63	4,775.2	-50.6	-53.3	73.4	0.91	0.79	
4,800.1	1.08	199.37	4,799.4	-51.0	-53.4	73.9	0.28	-0.25	
4,825.6	1.19	199.27	4,824.9	-51.5	-53.6	74.3	0.43	0.43	
4,887.0	1.60	212.50	4,886.3	-52.8	-54.2	75.7	0.84	0.67	
4,919.0	3.80	247.40	4,918.3	-53.6	-55.5	77.1	8.28	6.87	
4,950.0	7.70	257.90	4,949.1	-54.4	-58.4	79.9	12.98	12.58	
4,982.0	11.40	255.80	4,980.6	-55.7	-63.6	84.4	11.61	11.56	
5,014.0	14.90	256.50	5,011.8	-57.4	-70.7	90.7	10.95	10.94	
5,046.0	17.60	261.30	5,042.5	-59.1	-79.5	98.2	9.42	8.44	
5,078.0	20.40	265.10	5,072.8	-60.3	-89.8	106.5	9.56	8.75	
5,110.0	22.70	266.30	5,102.5	-61.2	-101.5	115.6	7.32	7.19	
5,141.0	25.80	266.00	5,130.8	-62.0	-114.2	125.3	10.01	10.00	
5,173.0	28.60	267.00	5,159.3	-62.9	-128.8	136.5	8.87	8.75	
5,205.0	31.30	268.80	5,187.0	-63.5	-144.8	148.4	8.89	8.44	
5,237.0	33.00	271.10	5,214.1	-63.5	-161.8	160.7	6.55	5.31	
5,268.0	34.90	272.00	5,239.8	-63.0	-179.1	172.8	6.34	6.13	
5,300.0	37.80	272.10	5,265.6	-62.3	-198.1	186.0	9.06	9.06	
5,332.0	40.80	272.80	5,290.3	-61.5	-218.3	200.0	9.48	9.37	
5,364.0	44.30	272.70	5,313.9	-60.4	-239.9	214.9	10.94	10.94	
5,395.0	48.50	274.10	5,335.3	-59.1	-262.3	230.1	13.93	13.54	
5,427.0	52.60	274.70	5,355.6	-57.2	-287.0	246.5	12.89	12.81	
5,459.0	56.90	274.70	5,374.1	-55.1	-313.0	263.8	13.44	13.44	
5,491.0	61.70	273.90	5,390.4	-53.0	-340.4	282.2	15.15	15.00	
5,522.0	67.20	273.10	5,403.8	-51.3	-368.3	301.1	17.89	17.74	
5,554.0	71.10	273.00	5,415.1	-49.7	-398.2	321.6	12.19	12.19	
5,586.0	73.20	273.10	5,424.9	-48.1	-428.6	342.4	6.57	6.56	
5,618.0	76.20	273.20	5,433.4	-46.4	-459.4	363.4	9.38	9.37	
5,649.0	78.50	273.30	5,440.2	-44.7	-489.6	384.0	7.43	7.42	
5,681.0	80.10	273.20	5,446.1	-42.9	-521.0	405.4	5.01	5.00	
5,713.0	81.80	273.10	5,451.2	-41.2	-552.6	426.9	5.32	5.31	
5,721.0	82.20	273.20	5,452.3	-40.7	-560.5	432.3	5.15	5.00	
5,757.0	84.50	273.00	5,456.4	-38.8	-596.2	456.7	6.41	6.39	
5,787.0	87.70	272.50	5,458.5	-37.3	-626.1	477.3	10.80	10.67	
5,818.0	89.20	272.40	5,459.3	-36.0	-657.0	498.7	4.85	4.84	
5,849.0	90.40	271.90	5,459.4	-34.9	-688.0	520.2	4.19	3.87	
5,910.0	91.40	272.90	5,458.5	-32.3	-748.9	562.4	2.32	1.64	

Cathedral Energy Services

Survey Report

Company: EnCana Oil & Gas (USA) Inc
Project: Rio Arriba County, NM
Site: Escrito A36-2407
Well: Escrito A36-2407 01H
Wellbore: HZ
Design: HZ

Local Co-ordinate Reference: Well Escrito A36-2407 01H
TVD Reference: KBE @ 6710.0ft (Aztec 222)
MD Reference: KBE @ 6710.0ft (Aztec 222)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
5,974.0	91.80	273.00	5,456.7	-29.0	-812.8	606.2	0.64	0.62	
6,037.0	90.00	274.00	5,455.7	-25.2	-875.7	648.9	3.27	-2.86	
6,100.0	90.20	273.00	5,455.6	-21.3	-938.6	691.5	1.62	0.32	
6,164.0	91.10	273.20	5,454.9	-17.9	-1,002.5	735.2	1.44	1.41	
6,227.0	91.20	274.10	5,453.6	-13.9	-1,065.3	777.8	1.44	0.16	
6,291.0	90.60	275.10	5,452.6	-8.7	-1,129.1	820.2	1.82	-0.94	
6,354.0	88.60	276.10	5,453.0	-2.6	-1,191.8	861.1	3.55	-3.17	
6,417.0	89.90	276.10	5,453.8	4.1	-1,254.5	901.7	2.06	2.06	
6,481.0	91.40	276.90	5,453.1	11.4	-1,318.0	942.5	2.66	2.34	
6,545.0	90.00	276.90	5,452.3	19.1	-1,381.6	983.0	2.19	-2.19	
6,608.0	89.30	275.70	5,452.7	26.0	-1,444.2	1,023.3	2.21	-1.11	
6,672.0	90.00	275.10	5,453.1	32.0	-1,507.9	1,065.1	1.44	1.09	
6,735.0	90.20	275.40	5,453.0	37.8	-1,570.6	1,106.3	0.57	0.32	
6,799.0	91.30	276.50	5,452.2	44.4	-1,634.3	1,147.6	2.43	1.72	
6,862.0	91.20	276.90	5,450.8	51.7	-1,696.8	1,187.6	0.65	-0.16	
6,926.0	90.50	275.50	5,449.8	58.6	-1,760.5	1,228.7	2.45	-1.09	
6,990.0	90.80	275.50	5,449.1	64.8	-1,824.2	1,270.4	0.47	0.47	
7,053.0	90.30	274.70	5,448.5	70.4	-1,886.9	1,311.8	1.50	-0.79	
7,117.0	90.20	274.30	5,448.2	75.4	-1,950.7	1,354.3	0.64	-0.16	
7,180.0	90.50	273.20	5,447.9	79.5	-2,013.6	1,396.8	1.81	0.48	
7,244.0	91.40	274.40	5,446.8	83.8	-2,077.4	1,439.9	2.34	1.41	
7,307.0	90.30	273.30	5,445.9	88.0	-2,140.3	1,482.2	2.47	-1.75	
7,370.0	90.00	272.50	5,445.7	91.2	-2,203.2	1,525.4	1.36	-0.48	
7,434.0	91.30	273.80	5,445.0	94.7	-2,267.1	1,569.0	2.87	2.03	
7,498.0	90.80	274.50	5,443.8	99.3	-2,330.9	1,611.8	1.34	-0.78	
7,561.0	89.70	273.90	5,443.5	103.9	-2,393.7	1,654.0	1.99	-1.75	
7,624.0	90.20	273.70	5,443.6	108.1	-2,456.6	1,696.4	0.85	0.79	
7,688.0	89.70	271.80	5,443.6	111.2	-2,520.5	1,740.3	3.07	-0.78	
7,752.0	89.80	271.20	5,443.9	112.9	-2,584.5	1,785.3	0.95	0.16	
7,815.0	90.80	271.80	5,443.6	114.5	-2,647.5	1,829.6	1.85	1.59	
7,879.0	91.30	272.40	5,442.4	116.9	-2,711.4	1,874.1	1.22	0.78	
7,942.0	90.50	271.10	5,441.4	118.8	-2,774.4	1,918.1	2.42	-1.27	
8,006.0	90.00	270.90	5,441.1	119.9	-2,838.4	1,963.5	0.84	-0.78	
8,069.0	91.00	272.20	5,440.6	121.6	-2,901.3	2,007.7	2.60	1.59	
8,133.0	90.80	272.90	5,439.6	124.4	-2,965.3	2,051.8	1.14	-0.31	
8,196.0	89.90	272.80	5,439.2	127.6	-3,028.2	2,095.0	1.44	-1.43	
8,260.0	90.40	272.80	5,439.0	130.7	-3,092.1	2,139.0	0.78	0.78	
8,323.0	90.40	273.20	5,438.6	134.0	-3,155.0	2,182.0	0.63	0.00	
8,387.0	91.10	273.50	5,437.7	137.7	-3,218.9	2,225.5	1.19	1.09	
8,449.0	90.80	273.60	5,436.7	141.6	-3,280.8	2,267.5	0.51	-0.48	
8,513.0	91.10	273.70	5,435.7	145.7	-3,344.6	2,310.7	0.49	0.47	
8,577.0	89.90	273.10	5,435.1	149.5	-3,408.5	2,354.1	2.10	-1.87	
8,640.0	90.60	273.00	5,434.8	152.8	-3,471.4	2,397.2	1.12	1.11	
8,704.0	91.60	273.60	5,433.6	156.5	-3,535.3	2,440.7	1.82	1.56	
8,767.0	91.90	274.30	5,431.7	160.8	-3,598.1	2,483.0	1.21	0.48	
8,830.0	91.40	275.30	5,429.9	166.1	-3,660.9	2,524.6	1.77	-0.79	
8,894.0	90.60	275.90	5,428.7	172.3	-3,724.6	2,566.1	1.56	-1.25	
8,957.0	89.80	275.00	5,428.5	178.3	-3,787.3	2,607.2	1.91	-1.27	
9,021.0	90.00	274.60	5,428.6	183.7	-3,851.1	2,649.5	0.70	0.31	
9,084.0	91.60	275.30	5,427.8	189.1	-3,913.8	2,691.0	2.77	2.54	
9,148.0	91.60	274.90	5,426.0	194.8	-3,977.5	2,733.0	0.62	0.00	
9,211.0	90.40	274.60	5,424.9	200.0	-4,040.3	2,774.6	1.96	-1.90	
9,275.0	89.70	274.70	5,424.8	205.2	-4,104.1	2,817.0	1.10	-1.09	

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9,338.0	89.10	273.90	5,425.5	209.9	-4,166.9	2,859.0	1.59	-0.95	
9,402.0	89.10	272.90	5,426.5	213.7	-4,230.8	2,902.5	1.56	0.00	
9,465.0	90.10	271.50	5,426.9	216.1	-4,293.8	2,946.2	2.73	1.59	
9,529.0	91.30	271.90	5,426.1	218.0	-4,357.7	2,991.0	1.98	1.87	
9,592.0	91.40	272.70	5,424.7	220.6	-4,420.6	3,034.6	1.28	0.16	
9,656.0	91.60	273.50	5,423.0	224.0	-4,484.5	3,078.3	1.29	0.31	
9,695.0	92.00	273.60	5,421.8	226.4	-4,523.4	3,104.7	1.06	1.03	
9,745.0	92.00	273.60	5,420.0	229.6	-4,573.3	3,138.4	0.00	0.00	

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
Escrito A36-2407 BHL	0.00	359.24	5,431.9	222.5	-4,578.3	1,921,646.29	1,261,473.04	36.274340	-107.535600
- actual wellpath misses target center by 14.7ft at 9745.0ft MD (5420.0 TVD, 229.6 N, -4573.3 E)									
- Polygon									
Point 1			5,431.9	614.0	-330.0	1,922,260.24	1,261,142.94		
Point 2			5,431.9	-500.0	-330.0	1,921,146.24	1,261,143.12		

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
4,825.0	4,824.3	-51.5	-53.6	Last Gyro Survey @ 4825' MD
9,695.0	5,421.8	226.4	-4,523.4	Last Cathedral Survey @ 9695' MD
9,745.0	5,420.0	229.6	-4,573.3	Projection to Bit @ 9745' MD

Checked By: _____ Approved By: _____ Date: _____