



September 26, 2016

Caza Petroleum, Inc.
200 N. Loraine, STE 1550
Midland, TX 79701

CATHEDRAL ENERGY SERVICES
The Trinity Building
Suite 300, 1801 Broadway Street
Denver, Colorado, United States
80202

303.825.1001 Office
877.825.1002 Toll-Free
303.825.1991 Fax
CathedralEnergyServices.com

Drilling + Completions

HOBBS OCD
DEC 05 2016
RECEIVED

Re: Certified Final Directional Survey

Dear Sir/ Madam,

Please find enclosed Cathedral Energy Services Certificate Final Survey for Caza Petroleum, Inc.

Rig: Nabors #893

Well: Igloo 19 State 4H

API # 30-025-42358

County: Lea County, NM

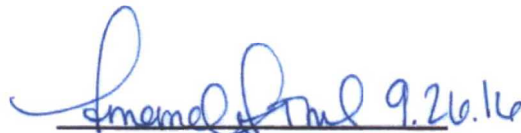
The data and calculations included in this survey have been reviewed and conform to the operational standards as outlined by the State of New Mexico EMNRD. Should you have any questions please do not hesitate to contact Cathedral Energy Services.

Sincerely,

Cathedral Energy Services

Amanda Tomlinson

Well Planner Print Name


Well Planner Signature 9.26.16
Date



Cathedral Energy Services

Survey Report

Company: Caza Operating, LLC
Project: Lea County, NM (NAD27)
Site: Sec. 19-20S-35E
Well: Igloo 19 State 4H
Wellbore: HZ
Design: FINAL

Local Co-ordinate Reference: Well Igloo 19 State 4H
TVD Reference: 27' RKB @ 3719.00usft (Nabos #893)
MD Reference: 27' RKB @ 3719.00usft (Nabos #893)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Project	Lea County, NM (NAD27)		
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	Sec. 19-20S-35E		
Site Position:		Northing:	570,377.88 usft
From:	Map	Easting:	759,908.24 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"
		Latitude:	32.565245
		Longitude:	-103.489702
		Grid Convergence:	0.45 °

Well	Igloo 19 State 4H		
Well Position	+N-S	0.00 usft	Northing:
	+E-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	32.551806
		Longitude:	-103.493554
		Ground Level:	3,692.00 usft

Wellbore	HZ		
Magnetics	Model Name	Sample Date	Declination
	HDGM	9/7/2016	(°)
			6.82
			Dip Angle
			(°)
			60.57
			Field Strength
			(nT)
			48,379

Design	FINAL		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N-S	+E-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(°)
			0.53

Survey Program	Date 9/26/2016		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
252.00	15,281.00	CES MWD (HZ)	MWD+HDGM
			Description
			OWSG MWD + HDGM

Survey									
Measured	Inclination	Azimuth	Vertical	+N-S	+E-W	Vertical	Dogleg	Build	Formations /
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Comments
(usft)			(usft)			(usft)	(°/100usft)	(°/100u	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
252.00	0.10	86.60	252.00	0.01	0.22	0.02	0.04	0.04	
344.00	0.30	140.10	344.00	-0.17	0.45	-0.16	0.28	0.22	
436.00	0.30	183.70	436.00	-0.59	0.59	-0.59	0.24	0.00	
528.00	0.20	184.30	528.00	-0.99	0.57	-0.99	0.11	-0.11	
620.00	0.40	209.30	620.00	-1.43	0.40	-1.43	0.25	0.22	
712.00	0.30	256.30	711.99	-1.77	0.01	-1.77	0.32	-0.11	
804.00	0.30	165.90	803.99	-2.06	-0.17	-2.06	0.46	0.00	
896.00	0.30	179.50	895.99	-2.53	-0.11	-2.54	0.08	0.00	
989.00	0.30	222.00	988.99	-2.96	-0.27	-2.96	0.23	0.00	
1,080.00	0.10	207.60	1,079.99	-3.21	-0.47	-3.21	0.22	-0.22	
1,172.00	0.20	208.40	1,171.99	-3.42	-0.58	-3.43	0.11	0.11	
1,267.00	0.20	218.50	1,266.99	-3.69	-0.76	-3.70	0.04	0.00	



Cathedral Energy Services

Survey Report

Company: Caza Operating, LLC
Project: Lea County, NM (NAD27)
Site: Sec. 19-20S-35E
Well: Igloo 19 State 4H
Wellbore: HZ
Design: FINAL

Local Co-ordinate Reference: Well Igloo 19 State 4H
TVD Reference: 27' RKB @ 3719.00usft (Nabos #893)
MD Reference: 27' RKB @ 3719.00usft (Nabos #893)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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
1,362.00	0.10	269.60	1,361.99	-3.83	-0.95	-3.84	0.17	-0.11	
1,456.00	0.10	259.20	1,455.99	-3.84	-1.11	-3.85	0.02	0.00	
1,551.00	0.10	255.50	1,550.99	-3.88	-1.27	-3.89	0.01	0.00	
1,646.00	0.10	187.00	1,645.99	-3.98	-1.36	-4.00	0.12	0.00	
1,741.00	0.50	245.80	1,740.99	-4.23	-1.75	-4.25	0.48	0.42	
1,835.00	0.60	244.40	1,834.98	-4.61	-2.57	-4.64	0.11	0.11	
1,941.00	0.80	233.20	1,940.98	-5.30	-3.66	-5.34	0.23	0.19	
2,034.00	2.30	271.50	2,033.94	-5.64	-6.05	-5.70	1.88	1.61	
2,129.00	4.90	282.20	2,128.75	-4.73	-11.92	-4.86	2.81	2.74	
2,223.00	6.70	287.60	2,222.26	-2.22	-21.07	-2.45	2.00	1.91	
2,318.00	6.20	286.30	2,316.66	0.89	-31.28	0.55	0.55	-0.53	
2,413.00	6.20	287.40	2,411.10	3.87	-41.10	3.41	0.13	0.00	
2,508.00	5.90	288.00	2,505.58	6.91	-50.64	6.35	0.32	-0.32	
2,604.00	4.50	279.70	2,601.18	9.07	-59.04	8.42	1.65	-1.46	
2,698.00	3.90	274.40	2,694.93	9.94	-65.86	9.21	0.76	-0.64	
2,793.00	3.60	276.10	2,789.72	10.50	-72.05	9.71	0.34	-0.32	
2,888.00	5.00	273.40	2,884.45	11.06	-79.15	10.19	1.49	1.47	
2,983.00	6.40	277.00	2,978.98	11.95	-88.54	10.98	1.52	1.47	
3,078.00	3.20	308.30	3,073.65	14.24	-95.88	13.19	4.24	-3.37	
3,172.00	0.30	323.60	3,167.60	16.07	-98.08	14.99	3.10	-3.09	
3,267.00	1.10	138.10	3,262.59	15.59	-87.62	14.52	1.47	0.84	
3,361.00	0.60	143.80	3,356.58	14.52	-96.73	13.46	0.54	-0.53	
3,456.00	0.60	128.10	3,451.58	13.81	-96.04	12.76	0.17	0.00	
3,550.00	0.70	138.90	3,545.57	13.08	-95.28	12.03	0.17	0.11	
3,644.00	0.80	149.70	3,639.56	12.08	-94.57	11.04	0.18	0.11	
3,739.00	1.00	145.80	3,734.55	10.82	-93.77	9.79	0.22	0.21	
3,833.00	1.00	141.50	3,828.54	9.50	-92.80	8.48	0.08	0.00	
3,928.00	1.00	154.30	3,923.52	8.10	-91.92	7.09	0.23	0.00	
4,023.00	1.10	145.90	4,018.51	6.60	-91.05	5.60	0.19	0.11	
4,117.00	0.60	152.40	4,112.50	5.42	-90.32	4.42	0.54	-0.53	
4,212.00	0.50	122.80	4,207.49	4.75	-89.74	3.76	0.31	-0.11	
4,307.00	0.60	119.80	4,302.49	4.28	-88.96	3.30	0.11	0.11	
4,401.00	0.40	160.40	4,396.48	3.73	-88.42	2.75	0.42	-0.21	
4,496.00	0.30	153.80	4,491.48	3.19	-88.20	2.22	0.11	-0.11	
4,591.00	0.40	85.10	4,586.48	3.00	-87.76	2.03	0.42	0.11	
4,686.00	0.90	87.90	4,681.47	3.05	-86.68	2.10	0.53	0.53	
4,780.00	0.20	102.80	4,775.47	3.04	-85.79	2.10	0.75	-0.74	
4,874.00	0.40	204.50	4,869.47	2.71	-85.76	1.76	0.51	0.21	
4,968.00	1.30	190.10	4,963.46	1.36	-86.08	0.41	0.98	0.96	
5,063.00	0.30	191.30	5,058.45	0.05	-86.32	-0.90	1.05	-1.05	
5,158.00	0.40	115.70	5,153.44	-0.33	-86.07	-1.28	0.46	0.11	
5,252.00	0.40	105.00	5,247.44	-0.56	-85.46	-1.50	0.08	0.00	
5,347.00	0.40	145.90	5,342.44	-0.92	-84.95	-1.86	0.29	0.00	
5,442.00	0.80	117.00	5,437.44	-1.50	-84.18	-2.42	0.52	0.42	
5,536.00	0.90	116.30	5,531.42	-2.12	-82.93	-3.03	0.11	0.11	
5,583.00	1.20	114.40	5,578.42	-2.49	-82.15	-3.39	0.64	0.64	
5,704.00	1.10	123.20	5,699.39	-3.65	-80.02	-4.53	0.17	-0.08	
5,798.00	1.00	126.00	5,793.38	-4.62	-78.61	-5.49	0.12	-0.11	
5,893.00	1.00	130.80	5,888.36	-5.65	-77.31	-6.50	0.09	0.00	
5,988.00	0.90	126.00	5,983.35	-6.63	-76.08	-7.47	0.13	-0.11	
6,083.00	0.90	132.70	6,078.34	-7.58	-74.93	-8.40	0.11	0.00	
6,178.00	0.80	118.90	6,173.33	-8.40	-73.80	-9.22	0.24	-0.11	
6,273.00	0.70	118.40	6,268.32	-9.00	-72.70	-9.80	0.11	-0.11	



Cathedral Energy Services

Survey Report

Company: Caza Operating, LLC
 Project: Lea County, NM (NAD27)
 Site: Sec. 19-20S-35E
 Well: Igloo 19 State 4H
 Wellbore: HZ
 Design: FINAL

Local Co-ordinate Reference: Well Igloo 19 State 4H
 TVD Reference: 27' RKB @ 3719.00usft (Nabos #893)
 MD Reference: 27' RKB @ 3719.00usft (Nabos #893)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 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
6,368.00	0.30	0.70	6,363.32	-9.03	-72.19	-9.82	0.93	-0.42	
6,462.00	0.40	337.40	6,457.32	-8.48	-72.31	-9.27	0.18	0.11	
6,557.00	0.40	351.10	6,552.31	-7.85	-72.49	-8.64	0.10	0.00	
6,652.00	0.60	333.10	6,647.31	-7.07	-72.77	-7.87	0.27	0.21	
6,746.00	0.70	332.70	6,741.30	-6.13	-73.26	-6.93	0.11	0.11	
6,841.00	0.90	320.50	6,836.29	-5.03	-74.00	-5.85	0.28	0.21	
6,936.00	1.00	312.10	6,931.28	-3.90	-75.09	-4.73	0.18	0.11	
7,031.00	1.00	305.20	7,026.27	-2.87	-76.38	-3.71	0.13	0.00	
7,126.00	1.20	304.70	7,121.25	-1.82	-77.87	-2.68	0.21	0.21	
7,220.00	1.00	263.70	7,215.23	-1.35	-79.50	-2.23	0.84	-0.21	
7,314.00	1.40	241.40	7,309.21	-1.99	-81.32	-2.89	0.65	0.43	
7,409.00	1.50	239.70	7,404.18	-3.18	-83.41	-4.09	0.11	0.11	
7,502.00	1.40	236.80	7,497.15	-4.41	-85.42	-5.35	0.13	-0.11	
7,597.00	1.40	238.80	7,592.12	-5.65	-87.38	-6.61	0.05	0.00	
7,692.00	1.50	242.10	7,687.09	-6.83	-89.47	-7.82	0.14	0.11	
7,787.00	1.60	244.90	7,782.06	-7.98	-91.77	-8.99	0.13	0.11	
7,977.00	1.60	280.90	7,971.99	-8.60	-96.78	-9.66	0.52	0.00	
8,167.00	1.60	15.60	8,161.94	-5.54	-98.67	-6.63	1.24	0.00	
8,356.00	2.00	45.00	8,350.85	-0.67	-95.63	-1.72	0.52	0.21	
8,545.00	1.50	23.20	8,539.77	3.94	-92.32	2.92	0.44	-0.26	
8,735.00	1.80	4.80	8,729.69	9.19	-91.09	8.19	0.32	0.16	
8,924.00	1.10	354.50	8,918.63	13.96	-91.02	12.96	0.39	-0.37	
9,110.00	1.20	319.30	9,104.59	17.21	-92.46	16.19	0.38	0.05	
9,300.00	1.40	288.90	9,294.54	19.47	-95.95	18.42	0.37	0.11	
9,490.00	0.80	359.30	9,484.52	21.55	-98.16	20.47	0.72	-0.32	
9,679.00	1.00	63.10	9,673.50	23.62	-96.71	22.55	0.51	0.11	
9,868.00	0.30	157.00	9,862.49	23.91	-95.05	22.86	0.56	-0.37	
10,058.00	0.90	193.20	10,052.48	22.00	-95.19	20.95	0.36	0.32	
10,107.00	1.00	188.00	10,101.47	21.20	-95.34	20.15	0.27	0.20	
10,202.00	7.80	11.80	10,196.21	26.70	-94.13	25.66	9.26	7.16	
10,249.00	14.30	8.70	10,242.31	35.57	-92.60	34.55	13.88	13.83	
10,297.00	17.10	354.90	10,288.53	48.46	-92.33	47.45	9.69	5.83	
10,344.00	23.10	350.40	10,332.65	64.45	-94.49	63.41	13.17	12.77	
10,391.00	28.20	346.50	10,375.01	84.36	-98.62	83.27	11.42	10.85	
10,438.00	31.50	343.90	10,415.77	106.96	-104.62	105.80	7.54	7.02	
10,486.00	30.90	348.00	10,456.83	131.07	-110.66	129.84	4.60	-1.25	
10,533.00	31.30	356.50	10,497.10	155.07	-113.92	153.81	9.37	0.85	
10,581.00	33.40	3.90	10,537.66	180.71	-113.78	179.44	9.33	4.37	
10,629.00	33.10	11.90	10,577.82	206.73	-110.18	205.50	9.15	-0.62	
10,676.00	32.80	15.00	10,617.27	231.58	-104.23	230.42	3.64	-0.64	
10,724.00	36.80	12.20	10,656.68	258.20	-97.83	257.11	8.97	8.33	
10,770.00	43.30	11.10	10,691.87	287.18	-91.87	286.15	14.21	14.13	
10,818.00	49.90	11.70	10,724.83	321.35	-84.97	320.39	13.78	13.75	
10,863.00	54.40	13.80	10,752.44	355.99	-77.12	355.12	10.66	10.00	
10,910.00	60.50	14.50	10,777.71	394.38	-67.43	393.62	13.04	12.98	
10,958.00	63.30	17.60	10,800.32	435.06	-55.71	434.42	8.15	5.83	
11,006.00	69.90	18.80	10,819.38	476.88	-41.95	476.39	13.94	13.75	
11,054.00	76.40	17.80	10,833.28	520.47	-27.54	520.14	13.69	13.54	
11,104.00	81.80	15.20	10,842.74	567.53	-13.61	567.35	11.95	10.80	
11,140.00	82.90	14.80	10,847.53	601.99	-4.37	601.91	3.25	3.06	
11,198.00	84.50	13.50	10,853.89	657.89	9.72	657.96	3.55	2.76	
11,229.00	86.80	13.40	10,856.25	687.95	16.91	688.10	7.43	7.42	
11,261.00	89.10	12.90	10,857.39	719.09	24.18	719.31	7.36	7.19	



Cathedral Energy Services

Survey Report

Company: Caza Operating, LLC
Project: Lea County, NM (NAD27)
Site: Sec. 19-20S-35E
Well: Igloo 19 State 4H
Wellbore: HZ
Design: FINAL

Local Co-ordinate Reference: Well Igloo 19 State 4H
TVD Reference: 27' RKB @ 3719.00usft (Nabos #893)
MD Reference: 27' RKB @ 3719.00usft (Nabos #893)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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
11,292.00	90.80	12.00	10,857.42	749.36	30.86	749.65	6.20	5.48	
11,324.00	91.70	9.50	10,856.72	780.79	36.83	781.15	8.30	2.81	
11,356.00	92.60	7.70	10,855.52	812.40	41.81	812.81	6.29	2.81	
11,387.00	93.20	5.50	10,853.95	843.16	45.17	843.60	7.35	1.94	
11,482.00	92.30	0.90	10,849.39	937.87	50.46	938.37	4.93	-0.95	
11,577.00	92.40	1.20	10,845.49	1,032.78	52.20	1,033.29	0.33	0.11	
11,672.00	90.10	1.90	10,843.42	1,127.71	54.77	1,128.25	2.53	-2.42	
11,767.00	89.50	2.30	10,843.75	1,222.65	58.25	1,223.21	0.76	-0.63	
11,861.00	90.90	1.00	10,843.43	1,318.60	60.96	1,317.19	2.03	1.49	
11,956.00	90.70	0.40	10,842.10	1,411.59	62.12	1,412.18	0.67	-0.21	
12,050.00	92.00	359.80	10,839.88	1,505.56	62.29	1,506.15	1.52	1.38	
12,145.00	92.10	0.00	10,836.49	1,600.50	62.12	1,601.08	0.24	0.11	
12,240.00	91.50	358.50	10,833.50	1,695.44	60.88	1,696.01	1.70	-0.63	
12,334.00	91.50	358.40	10,831.04	1,789.37	58.34	1,789.91	0.11	0.00	
12,428.00	90.50	357.00	10,829.40	1,883.28	54.56	1,883.77	1.83	-1.06	
12,523.00	90.00	356.40	10,828.99	1,978.12	49.09	1,978.54	0.82	-0.53	
12,618.00	89.90	356.40	10,829.07	2,072.93	43.13	2,073.28	0.11	-0.11	
12,713.00	90.60	356.40	10,828.65	2,167.74	37.16	2,168.02	0.74	0.74	
12,807.00	91.30	357.00	10,827.10	2,261.57	31.75	2,261.79	0.98	0.74	
12,902.00	90.40	356.90	10,825.89	2,356.43	26.70	2,356.58	0.95	-0.95	
12,997.00	90.50	356.80	10,824.94	2,451.28	21.48	2,451.37	0.15	0.11	
13,091.00	90.70	358.10	10,823.96	2,545.18	17.30	2,545.22	1.40	0.21	
13,186.00	90.50	357.90	10,822.96	2,640.12	13.98	2,640.11	0.30	-0.21	
13,281.00	90.10	357.80	10,822.46	2,735.05	10.42	2,735.00	0.43	-0.42	
13,375.00	91.10	359.40	10,821.48	2,829.01	8.12	2,828.93	2.01	1.06	
13,470.00	90.80	0.00	10,819.90	2,924.00	7.63	2,923.90	0.71	-0.32	
13,565.00	90.50	0.20	10,818.83	3,018.99	7.79	3,018.89	0.38	-0.32	
13,660.00	90.20	0.00	10,818.25	3,113.99	7.96	3,113.89	0.38	-0.32	
13,754.00	90.40	0.20	10,817.75	3,207.99	8.12	3,207.88	0.30	0.21	
13,849.00	90.20	359.80	10,817.26	3,302.99	8.12	3,302.88	0.47	-0.21	
13,944.00	91.80	359.10	10,815.60	3,397.96	7.21	3,397.84	1.84	1.68	
14,039.00	92.80	359.20	10,811.79	3,492.87	5.80	3,492.73	1.06	1.05	
14,134.00	93.00	358.90	10,806.98	3,587.74	4.23	3,587.57	0.38	0.21	
14,229.00	93.00	358.60	10,802.01	3,682.59	2.16	3,682.39	0.32	0.00	
14,323.00	93.00	358.70	10,797.09	3,776.43	-0.05	3,776.20	0.11	0.00	
14,418.00	92.10	358.40	10,792.86	3,871.31	-2.45	3,871.05	1.00	-0.95	
14,513.00	92.00	358.80	10,789.46	3,966.22	-4.77	3,965.92	0.43	-0.11	
14,607.00	92.00	358.10	10,786.18	4,060.12	-7.32	4,059.80	0.74	0.00	
14,702.00	92.00	358.00	10,782.87	4,155.01	-10.55	4,154.64	0.11	0.00	
14,796.00	92.40	358.00	10,779.26	4,248.89	-13.82	4,248.48	0.43	0.43	
14,891.00	92.80	358.00	10,774.95	4,343.73	-17.14	4,343.28	0.42	0.42	
14,986.00	92.90	357.50	10,770.23	4,438.54	-20.86	4,438.04	0.54	0.11	
15,080.00	93.60	357.80	10,764.90	4,532.31	-24.71	4,531.76	0.81	0.74	
15,175.00	91.40	358.60	10,760.75	4,627.16	-27.69	4,626.58	2.46	-2.32	
15,221.00	91.20	358.40	10,759.71	4,673.14	-28.89	4,672.54	0.61	-0.43	Last CES Survey
15,278.24	91.20	358.40	10,758.51	4,730.35	-30.49	4,729.72	0.00	0.00	4H PBHL PS
15,281.00	91.20	358.40	10,758.45	4,733.10	-30.57	4,732.48	0.00	0.00	Projection to Bit



Cathedral Energy Services

Survey Report

Company: Caza Operating, LLC
Project: Lea County, NM (NAD27)
Site: Sec. 19-20S-35E
Well: Igloo 19 State 4H
Wellbore: HZ
Design: FINAL

Local Co-ordinate Reference: Well Igloo 19 State 4H
TVD Reference: 27' RKB @ 3719.00usft (Nabos #893)
MD Reference: 27' RKB @ 3719.00usft (Nabos #893)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
4H PBHL P3 - actual wellpath misses target center by 356.97usft at 15281.00usft MD (10758.45 TVD, 4733.10 N, -30.57 E) - Rectangle (sides W20.00 H40.00 D4,168.77)	88.07	356.35	10,719.00	4,749.00	-385.00	570,228.40	758,375.00	32.564867	-103.494682
4H PBHL P5 - actual wellpath misses target center by 31.49usft at 15277.83usft MD (10758.52 TVD, 4729.93 N, -30.48 E) - Rectangle (sides W20.00 H40.00 D4,140.90)	89.10	358.56	10,790.00	4,730.60	-30.00	570,210.00	758,730.00	32.564809	-103.493530
4H LP - actual wellpath misses target center by 199.65usft at 11035.10usft MD (10828.43 TVD, 503.10 N, -33.18 E) - Point	0.00	359.93	10,724.00	585.60	-182.00	566,065.00	758,578.00	32.553419	-103.494130
4H PBHL - actual wellpath misses target center by 365.89usft at 15281.00usft MD (10758.45 TVD, 4733.10 N, -30.57 E) - Rectangle (sides W20.00 H40.00 D4,176.21)	89.25	356.35	10,669.00	4,749.00	-385.00	570,228.40	758,375.00	32.564867	-103.494682
4H PBHL P4 - actual wellpath misses target center by 39.51usft at 15278.24usft MD (10758.51 TVD, 4730.35 N, -30.49 E) - Rectangle (sides W20.00 H40.00 D4,140.90)	88.07	356.35	10,719.00	4,730.60	-30.00	570,210.00	758,730.00	32.564809	-103.493530
4H PBHL P8 - actual wellpath misses target center by 11.50usft at 15278.24usft MD (10758.51 TVD, 4730.35 N, -30.49 E) - Rectangle (sides W20.00 H40.00 D1,425.00)	87.81	358.56	10,770.00	4,730.60	-30.00	570,210.00	758,730.00	32.564809	-103.493530

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
15,221.00	10,759.71	4,673.14	-28.89	Last CES Survey
15,281.00	10,758.45	4,733.10	-30.57	Projection to Bit

Checked By: _____ Approved By: _____ Date: _____