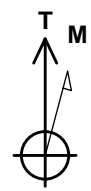


Surface Hole Location
Pehr 35-1
1497' FSL - 240' FWL
Lat : 40.076865
Long : -104.847879

BHL
50' FSL - 1320' FWL
Hardline = 50' South of BHL

CASING DETAILS
No casing data is available

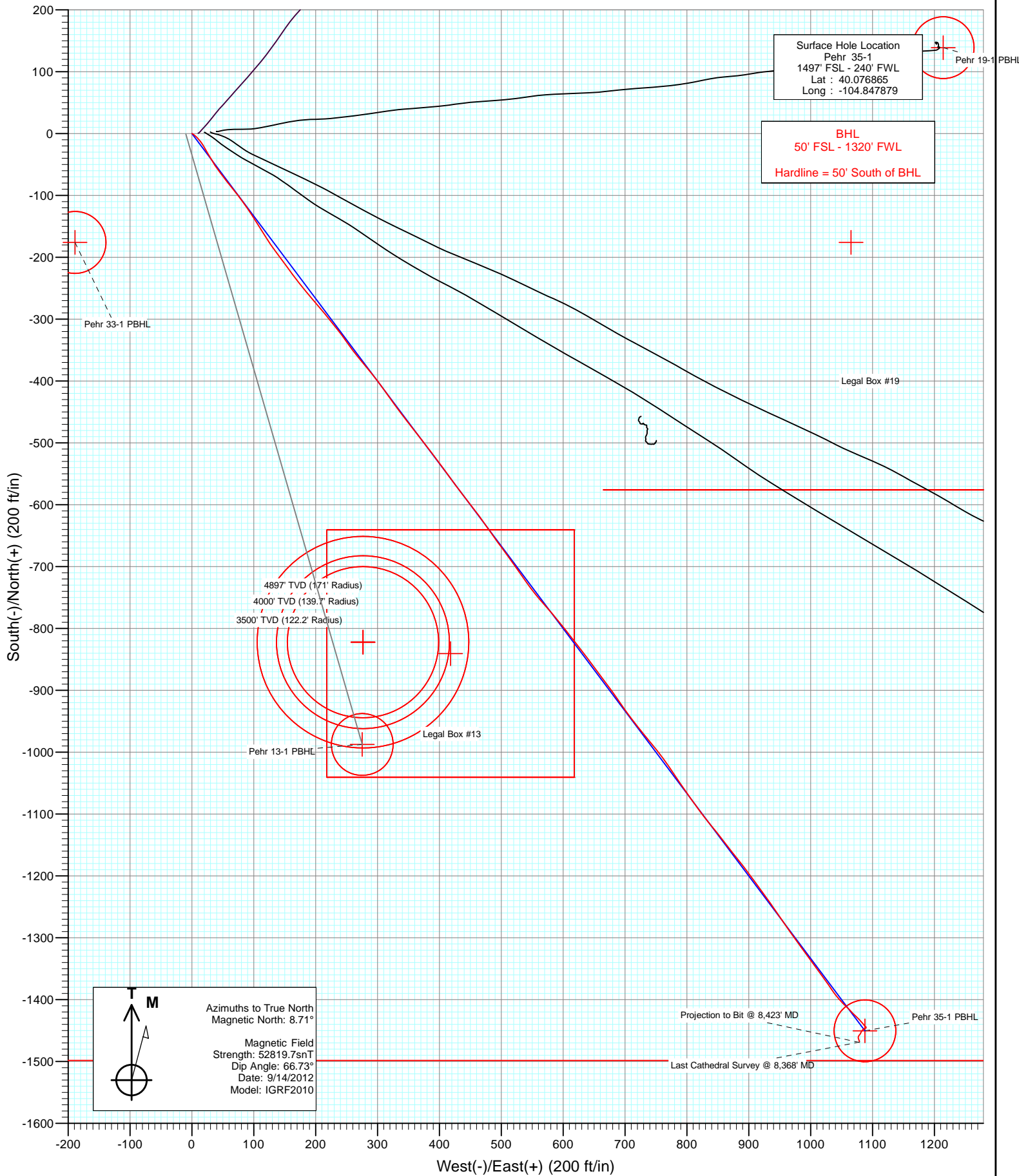
FORMATION TOP DETAILS
No formation data is available

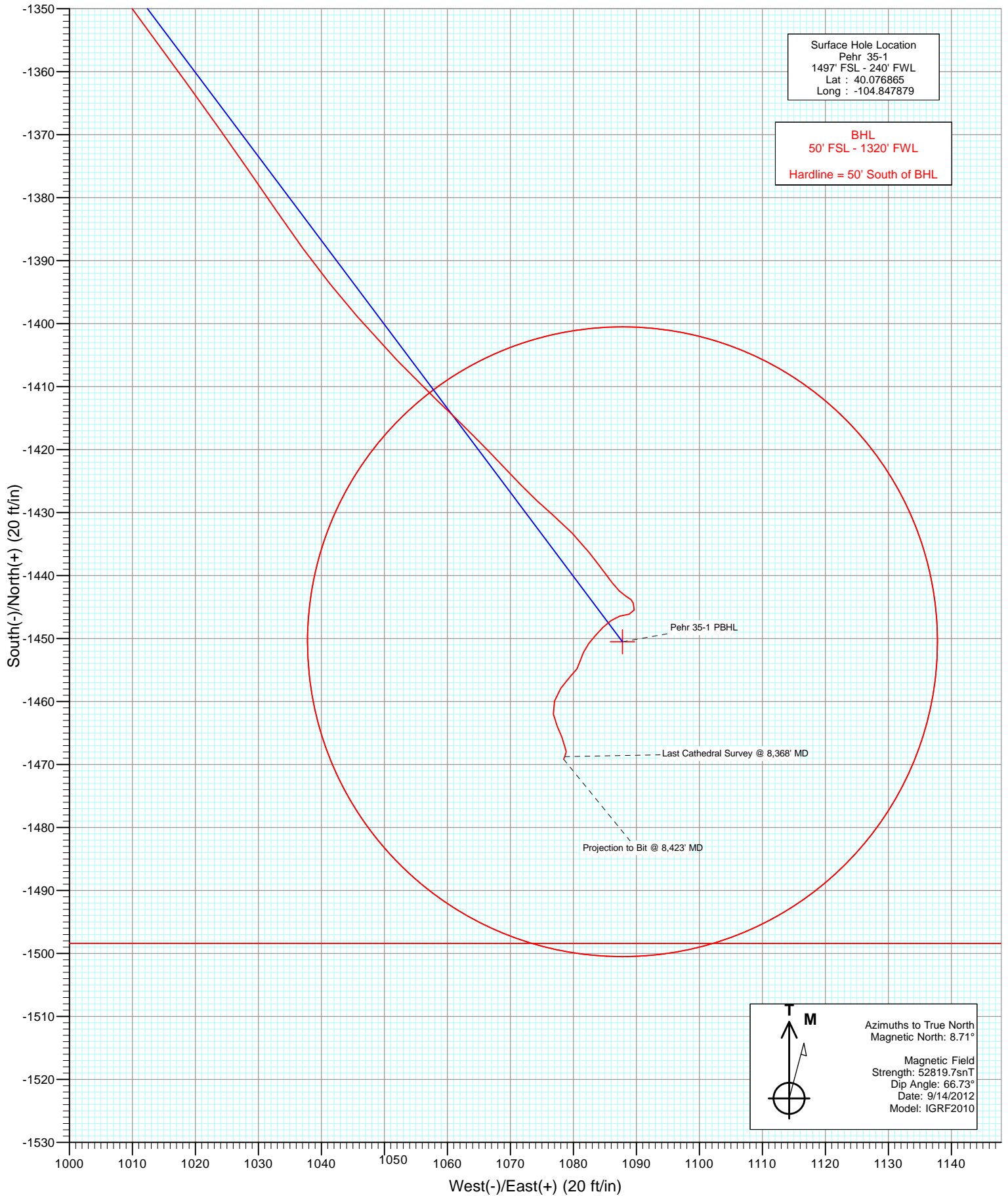


Azimuths to True North
Magnetic North: 8.71°

Magnetic Field
Strength: 52819.7snT
Dip Angle: 66.73°
Date: 9/14/2012
Model: IGRF2010

Type	Target	Target	Target	Target	Target	Target	Target	Target	Target
Type	Target	Target	Target	Target	Target	Target	Target	Target	Target
	Pehr 35-1 PBHL								
		TVD	+N/-S	+E/-W	Latitude	Longitude			
		8102.0	-1450.5	1087.8	40.072883	-104.843992			





Surface Hole Location
Pehr 35-1
1497' FSL - 240' FWL
Lat : 40.076865
Long : -104.847879

BHL
50' FSL - 1320' FWL
Hardline = 50' South of BHL

Pehr 35-1 PBHL

Last Cathedral Survey @ 8,368' MD

Projection to Bit @ 8,423' MD

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Azimuths to True North
Magnetic North: 8.71°

Magnetic Field
Strength: 52819.7snT
Dip Angle: 66.73°
Date: 9/14/2012
Model: IGRF2010

Cathedral Energy Services

Survey Report

Company: Anadarko Petroleum Corporation	Local Co-ordinate Reference: Well Pehr 35-1
Project: DJ Wattenberg	TVD Reference: KB=15' @ 4959.0ft (Xtreme 11)
Site: NWSW Sec1-T1N-R67W (Pehr 33-1)	MD Reference: KB=15' @ 4959.0ft (Xtreme 11)
Well: Pehr 35-1	North Reference: True
Wellbore: DD	Survey Calculation Method: Minimum Curvature
Design: DD	Database: USA EDM 5000 Multi Users DB

Project DJ Wattenberg		
Map System: US State Plane 1983	System Datum: Mean Sea Level	
Geo Datum: North American Datum 1983		
Map Zone: Colorado Northern Zone		

Site NWSW Sec1-T1N-R67W (Pehr 33-1)				
Site Position:	Northing: 1,271,518.81 ft	Latitude: 40.076861		
From: Lat/Long	Easting: 3,182,472.99 ft	Longitude: -104.847950		
Position Uncertainty: 0.0 ft	Slot Radius: 13.200 in	Grid Convergence: 0.42 °		

Well Pehr 35-1				
Well Position	+N/-S 0.0 ft	Northing: 1,271,520.39 ft	Latitude: 40.076865	
	+E/-W 0.0 ft	Easting: 3,182,492.85 ft	Longitude: -104.847879	
Position Uncertainty	0.0 ft	Wellhead Elevation: ft	Ground Level: 4,944.0 ft	

Wellbore DD					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/14/2012	8.71	66.73	52,820

Design DD				
Audit Notes:				
Version: 1.0	Phase: ACTUAL	Tie On Depth: 0.0		
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	143.13

Survey Program		Date 9/19/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
77.0	8,423.0	Survey #1 (DD)	MWD	Geolink MWD

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
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
77.0	1.20	114.80	77.0	-0.3	0.7	0.7	1.56	1.56	
164.0	1.20	117.40	164.0	-1.1	2.4	2.3	0.06	0.00	
253.0	2.80	134.50	252.9	-3.1	4.7	5.3	1.90	1.80	
340.0	4.10	135.30	339.8	-6.8	8.4	10.5	1.50	1.49	
417.0	5.50	140.10	416.5	-11.6	12.8	16.9	1.89	1.82	
507.0	7.30	149.10	505.9	-19.8	18.5	26.9	2.28	2.00	
598.0	9.50	149.20	595.9	-31.2	25.3	40.1	2.42	2.42	
689.0	11.60	149.70	685.4	-45.6	33.7	56.7	2.31	2.31	
779.0	13.70	143.20	773.2	-61.9	44.7	76.3	2.82	2.33	
870.0	14.60	142.10	861.5	-79.6	58.2	98.6	1.03	0.99	
886.0	14.50	141.40	876.9	-82.7	60.7	102.6	1.26	-0.62	
976.0	14.70	141.50	964.0	-100.5	74.8	125.3	0.22	0.22	

Cathedral Energy Services

Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Pehr 35-1
Project:	DJ Wattenberg	TVD Reference:	KB=15' @ 4959.0ft (Xtreme 11)
Site:	NWSW Sec1-T1N-R67W (Pehr 33-1)	MD Reference:	KB=15' @ 4959.0ft (Xtreme 11)
Well:	Pehr 35-1	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	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
1,067.0	16.10	145.70	1,051.8	-119.9	89.1	149.4	1.97	1.54	
1,157.0	17.90	148.10	1,137.8	-142.0	103.5	175.7	2.15	2.00	
1,248.0	19.20	147.80	1,224.1	-166.5	118.8	204.5	1.43	1.43	
1,339.0	19.00	143.20	1,310.1	-191.1	135.7	234.2	1.67	-0.22	
1,430.0	20.30	144.00	1,395.8	-215.7	153.8	264.8	1.46	1.43	
1,520.0	21.50	142.20	1,479.9	-241.4	173.1	297.0	1.51	1.33	
1,611.0	20.70	138.70	1,564.8	-266.6	193.9	329.7	1.64	-0.88	
1,701.0	20.70	141.20	1,649.0	-291.0	214.4	361.4	0.98	0.00	
1,792.0	18.40	140.80	1,734.7	-314.6	233.6	391.8	2.53	-2.53	
1,883.0	19.20	145.40	1,820.9	-338.1	251.1	421.1	1.85	0.88	
1,974.0	20.00	140.50	1,906.6	-362.4	269.5	451.6	2.01	0.88	
2,064.0	20.30	140.40	1,991.1	-386.3	289.3	482.6	0.34	0.33	
2,155.0	20.50	144.50	2,076.4	-411.5	308.6	514.3	1.59	0.22	
2,246.0	21.60	144.70	2,161.3	-438.1	327.5	547.0	1.21	1.21	
2,337.0	22.00	141.30	2,245.8	-465.1	347.9	580.8	1.46	0.44	
2,427.0	20.40	142.40	2,329.7	-490.7	368.0	613.3	1.83	-1.78	
2,518.0	20.90	142.50	2,414.9	-516.1	387.5	645.4	0.55	0.55	
2,609.0	21.70	143.80	2,499.7	-542.6	407.4	678.5	1.02	0.88	
2,699.0	20.30	144.10	2,583.7	-568.6	426.3	710.7	1.56	-1.56	
2,790.0	19.50	141.50	2,669.2	-593.3	445.0	741.7	1.31	-0.88	
2,881.0	19.50	143.30	2,755.0	-617.4	463.6	772.0	0.66	0.00	
2,972.0	19.70	145.50	2,840.7	-642.2	481.3	802.6	0.84	0.22	
3,062.0	21.80	143.60	2,924.9	-668.1	499.9	834.4	2.45	2.33	
3,153.0	22.90	144.70	3,009.1	-696.2	520.1	869.0	1.29	1.21	
3,244.0	22.00	144.90	3,093.2	-724.6	540.1	903.8	0.99	-0.99	
3,335.0	22.60	139.50	3,177.4	-751.8	561.3	938.2	2.35	0.66	
3,425.0	21.70	139.20	3,260.7	-777.6	583.4	972.1	1.01	-1.00	
3,516.0	20.10	141.90	3,345.7	-802.6	604.1	1,004.5	2.05	-1.76	
3,607.0	17.90	141.70	3,431.8	-825.9	622.4	1,034.1	2.42	-2.42	
3,698.0	17.20	143.80	3,518.5	-847.7	639.0	1,061.6	1.04	-0.77	
3,788.0	17.30	143.20	3,604.5	-869.2	654.9	1,088.3	0.23	0.11	
3,879.0	20.10	143.10	3,690.7	-892.5	672.4	1,117.4	3.08	3.08	
3,970.0	22.50	145.70	3,775.5	-919.4	691.6	1,150.5	2.83	2.64	
4,061.0	20.70	143.00	3,860.1	-946.7	711.1	1,184.0	2.26	-1.98	
4,152.0	20.80	139.80	3,945.2	-971.8	731.2	1,216.2	1.25	0.11	
4,242.0	21.00	142.10	4,029.3	-996.8	751.4	1,248.2	0.94	0.22	
4,333.0	20.90	145.30	4,114.2	-1,023.0	770.6	1,280.8	1.26	-0.11	
4,424.0	20.20	146.40	4,199.4	-1,049.4	788.6	1,312.7	0.88	-0.77	
4,515.0	19.80	144.10	4,285.0	-1,075.0	806.3	1,343.8	0.97	-0.44	
4,605.0	17.80	143.80	4,370.2	-1,098.4	823.4	1,372.8	2.22	-2.22	
4,696.0	17.60	140.10	4,456.9	-1,120.2	840.4	1,400.4	1.26	-0.22	
4,787.0	16.80	142.20	4,543.8	-1,141.2	857.3	1,427.3	1.11	-0.88	
4,878.0	17.50	142.60	4,630.7	-1,162.4	873.7	1,454.1	0.78	0.77	
4,968.0	17.60	141.20	4,716.5	-1,183.8	890.4	1,481.3	0.48	0.11	
5,059.0	20.40	144.30	4,802.6	-1,207.4	908.3	1,510.9	3.27	3.08	
5,195.0	18.10	143.90	4,931.0	-1,243.7	934.6	1,555.7	1.69	-1.69	
5,286.0	18.30	146.80	5,017.4	-1,267.1	950.7	1,584.1	1.02	0.22	
5,377.0	18.50	144.20	5,103.8	-1,290.7	967.0	1,612.8	0.93	0.22	
5,467.0	19.50	144.20	5,188.9	-1,314.5	984.1	1,642.1	1.11	1.11	
5,558.0	19.60	143.70	5,274.6	-1,339.1	1,002.1	1,672.5	0.21	0.11	
5,648.0	17.00	144.10	5,360.1	-1,362.0	1,018.7	1,700.8	2.89	-2.89	
5,739.0	14.40	145.80	5,447.7	-1,382.1	1,032.9	1,725.4	2.90	-2.86	
5,830.0	12.40	139.00	5,536.2	-1,398.8	1,045.6	1,746.5	2.79	-2.20	

Cathedral Energy Services

Survey Report

Company: Anadarko Petroleum Corporation	Local Co-ordinate Reference: Well Pehr 35-1
Project: DJ Wattenberg	TVD Reference: KB=15' @ 4959.0ft (Xtreme 11)
Site: NWSW Sec1-T1N-R67W (Pehr 33-1)	MD Reference: KB=15' @ 4959.0ft (Xtreme 11)
Well: Pehr 35-1	North Reference: True
Wellbore: DD	Survey Calculation Method: Minimum Curvature
Design: DD	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
5,921.0	11.10	133.50	5,625.3	-1,412.2	1,058.4	1,764.8	1.88	-1.43	
6,012.0	7.80	137.10	5,715.0	-1,422.8	1,069.0	1,779.6	3.68	-3.63	
6,102.0	5.80	130.70	5,804.4	-1,430.2	1,076.6	1,790.1	2.37	-2.22	
6,193.0	5.00	142.00	5,895.0	-1,436.4	1,082.5	1,798.6	1.46	-0.88	
6,284.0	2.50	143.70	5,985.8	-1,441.1	1,086.1	1,804.5	2.75	-2.75	
6,375.0	1.50	119.20	6,076.7	-1,443.3	1,088.3	1,807.6	1.42	-1.10	
6,465.0	0.70	165.80	6,166.7	-1,444.4	1,089.5	1,809.2	1.27	-0.89	
6,556.0	0.70	179.40	6,257.7	-1,445.5	1,089.6	1,810.2	0.18	0.00	
6,647.0	1.00	262.50	6,348.7	-1,446.1	1,088.9	1,810.2	1.26	0.33	
6,738.0	0.90	253.70	6,439.7	-1,446.4	1,087.4	1,809.6	0.19	-0.11	
6,828.0	1.10	234.50	6,529.7	-1,447.1	1,086.0	1,809.3	0.43	0.22	
6,919.0	1.10	224.70	6,620.7	-1,448.3	1,084.7	1,809.4	0.21	0.00	
7,010.0	1.10	221.80	6,711.6	-1,449.5	1,083.5	1,809.7	0.06	0.00	
7,100.0	1.00	216.50	6,801.6	-1,450.8	1,082.4	1,810.1	0.15	-0.11	
7,191.0	1.10	205.30	6,892.6	-1,452.2	1,081.6	1,810.7	0.25	0.11	
7,282.0	0.90	197.00	6,983.6	-1,453.7	1,081.0	1,811.6	0.27	-0.22	
7,373.0	0.60	209.10	7,074.6	-1,454.8	1,080.6	1,812.2	0.37	-0.33	
7,464.0	1.50	226.10	7,165.6	-1,456.0	1,079.5	1,812.5	1.04	0.99	
7,554.0	1.50	211.20	7,255.5	-1,457.9	1,078.0	1,813.1	0.43	0.00	
7,645.0	1.40	200.50	7,346.5	-1,459.9	1,077.0	1,814.2	0.32	-0.11	
7,736.0	1.30	169.00	7,437.5	-1,462.0	1,076.8	1,815.7	0.81	-0.11	
7,826.0	1.20	155.10	7,527.5	-1,463.8	1,077.4	1,817.5	0.35	-0.11	
7,917.0	1.10	159.60	7,618.5	-1,465.5	1,078.1	1,819.3	0.15	-0.11	
8,008.0	1.00	164.50	7,709.4	-1,467.1	1,078.6	1,820.9	0.15	-0.11	
8,098.0	0.10	171.00	7,799.4	-1,467.9	1,078.9	1,821.7	1.00	-1.00	
8,189.0	0.10	210.50	7,890.4	-1,468.1	1,078.8	1,821.8	0.07	0.00	
8,280.0	0.20	191.10	7,981.4	-1,468.3	1,078.8	1,821.9	0.12	0.11	
8,368.0	0.40	200.10	8,069.4	-1,468.8	1,078.6	1,822.2	0.23	0.23	Last Cathedral Survey @ 8,368' MD
8,400.4	0.48	203.79	8,101.8	-1,469.0	1,078.5	1,822.3	0.25	0.23	Pehr 35-1 PBHL
8,423.0	0.53	205.73	8,124.4	-1,469.2	1,078.4	1,822.4	0.25	0.24	Projection to Bit @ 8,423' MD

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Pehr 35-1 PBHL	0.00	0.00	8,102.0	-1,450.5	1,087.8	1,270,077.92	3,183,591.28	40.072883	-104.843992
- actual wellpath misses target center by 20.7ft at 8400.4ft MD (8101.8 TVD, -1469.0 N, 1078.5 E)									
- Circle (radius 50.0)									

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
8,368.0	8,069.4	-1,468.8	1,078.6	Last Cathedral Survey @ 8,368' MD
8,423.0	8,124.4	-1,469.2	1,078.4	Projection to Bit @ 8,423' MD

Checked By: _____ Approved By: _____ Date: _____