



As Drilled 077-09481

PXP

Plains Exploration & Production Company

Project: Brush Creek
Site: NWNE Sec 11-T9S-R94W
Well: Griffith 11-1B
Wellbore: DD
Design: DD



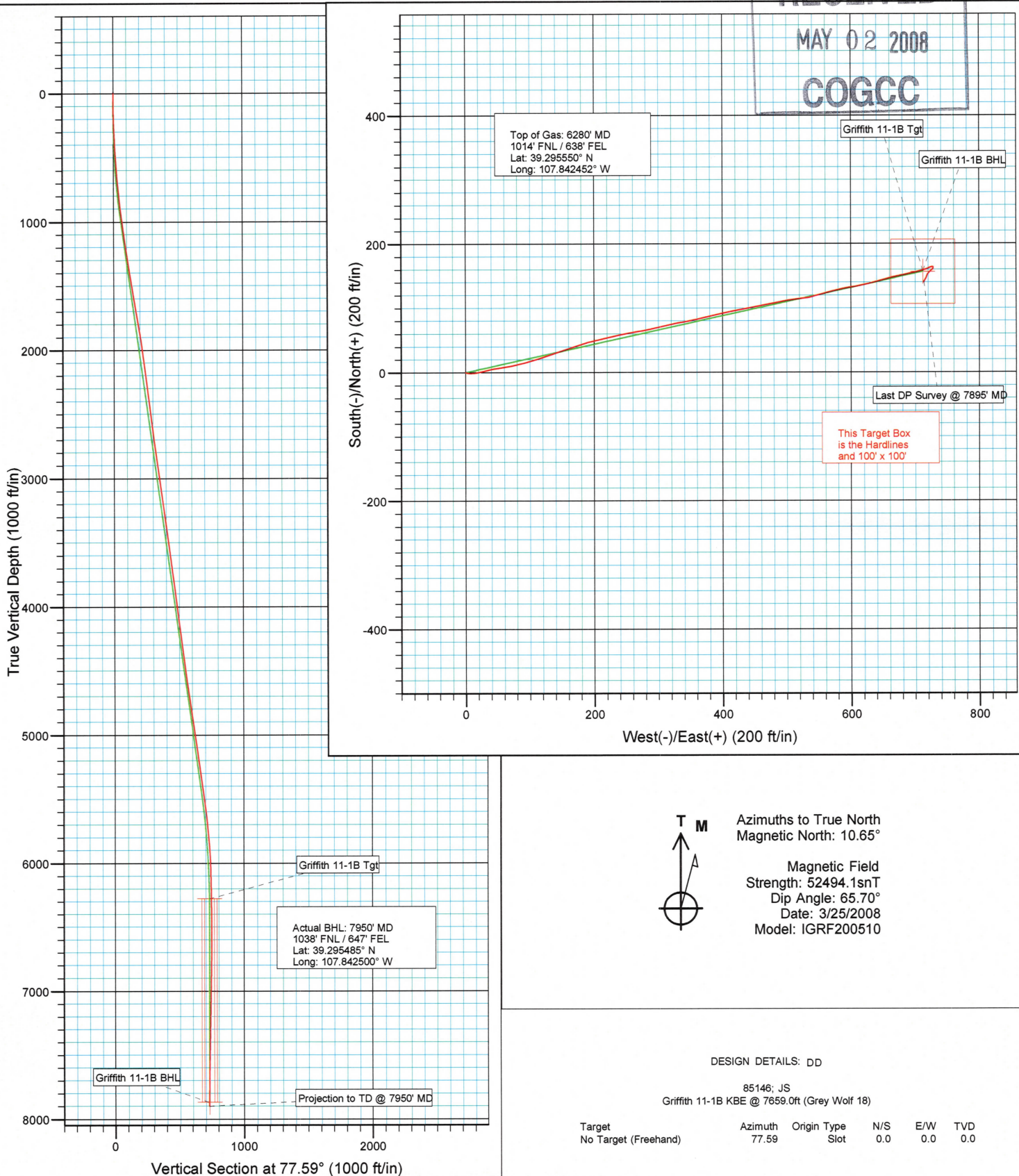
Directional Plus

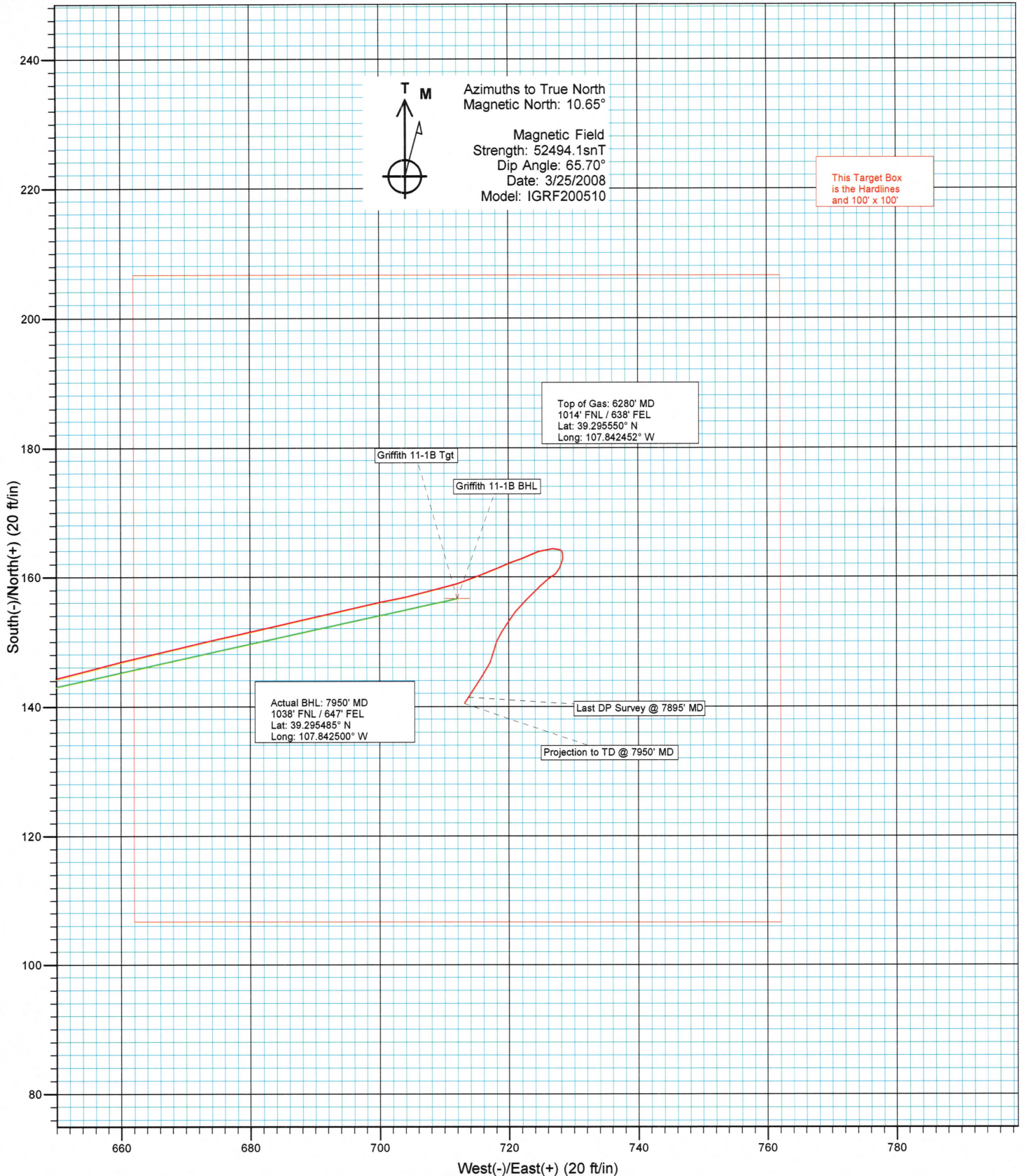
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Survey Report



Company:	Plains Exploration & Production Co.	Local Co-ordinate Reference:	Well Griffith 11-1B
Project:	Brush Creek	TVD Reference:	Griffith 11-1B KBE @ 7659.0ft (Grey Wolf 18)
Site:	NWNE Sec 11-T9S-R94W	MD Reference:	Griffith 11-1B KBE @ 7659.0ft (Grey Wolf 18)
Well:	Griffith 11-1B	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	EDM 2003.21 US Multi User DB

Project	Brush Creek		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site		NWNE Sec 11-T9S-R94W			
Site Position:		Northing:	1,540,956.98 ft	Latitude:	39.295152
From:	Lat/Long	Easting:	2,336,420.31 ft	Longitude:	-107.845018
Position Uncertainty:	0.0 ft	Slot Radius:	0"	Grid Convergence:	-1.48 °

Well	Griffith 11-1B					
Well Position	+N/-S	0.0 ft	Northing:	1,540,937.72 ft	Latitude:	39.295099
	+E/-W	0.0 ft	Easting:	2,336,419.10 ft	Longitude:	-107.845020
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	7,635.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	3/25/2008	10.65	65.70	52,494

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	77.59	

Survey Program	Date	4/25/2008			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
94.0	7,950.0	Survey #1 (DD)	Geolink 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	
94.0	0.40	120.00	94.0	-0.2	0.3	0.2	0.43	0.43	
155.0	1.10	103.90	155.0	-0.4	1.0	0.9	1.19	1.15	
248.0	2.10	99.10	248.0	-0.9	3.6	3.3	1.08	1.08	
340.0	3.00	94.30	339.9	-1.3	7.7	7.2	1.00	0.98	
432.0	3.30	81.60	431.7	-1.1	12.7	12.1	0.82	0.33	
524.0	3.70	80.30	523.6	-0.2	18.2	17.7	0.44	0.43	
617.0	4.50	76.10	616.3	1.1	24.7	24.4	0.92	0.86	
709.0	5.20	76.50	708.0	3.0	32.3	32.2	0.76	0.76	
801.0	5.80	81.30	799.6	4.6	40.9	41.0	0.82	0.65	
893.0	6.70	78.70	891.0	6.4	50.8	51.0	1.03	0.98	
985.0	7.40	81.60	982.3	8.3	61.9	62.2	0.85	0.76	
1,077.0	8.00	79.60	1,073.5	10.3	74.1	74.6	0.71	0.65	

Survey Report



Company: Plains Exploration & Production Co.
Project: Brush Creek
Site: NWNE Sec 11-T9S-R94W
Well: Griffith 11-1B
Wellbore: DD
Design: DD

Local Co-ordinate Reference: Well Griffith 11-1B
TVD Reference: Griffith 11-1B KBE @ 7659.0ft (Grey Wolf 18)
MD Reference: Griffith 11-1B KBE @ 7659.0ft (Grey Wolf 18)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.21 US Multi User 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
1,173.0	8.40	74.10	1,168.5	13.5	87.4	88.2	0.92	0.42	
1,268.0	8.70	73.00	1,262.5	17.5	100.9	102.3	0.36	0.32	
1,364.0	9.10	72.10	1,357.3	21.9	115.1	117.1	0.44	0.42	
1,459.0	9.50	70.70	1,451.0	26.8	129.6	132.4	0.48	0.42	
1,558.0	9.50	72.30	1,548.7	32.0	145.1	148.6	0.27	0.00	
1,653.0	9.10	71.60	1,642.4	36.8	159.7	163.9	0.44	-0.42	
1,749.0	9.40	71.00	1,737.2	41.7	174.3	179.2	0.33	0.31	
1,845.0	9.40	75.30	1,831.9	46.3	189.3	194.9	0.73	0.00	
1,941.0	8.90	73.90	1,926.7	50.3	204.1	210.1	0.57	-0.52	
2,037.0	8.20	79.70	2,021.6	53.6	217.9	224.4	1.16	-0.73	
2,132.0	7.70	77.70	2,115.7	56.2	230.8	237.5	0.60	-0.53	
2,228.0	7.20	76.70	2,210.9	58.9	243.0	249.9	0.54	-0.52	
2,324.0	6.90	78.80	2,306.2	61.4	254.5	261.7	0.41	-0.31	
2,419.0	6.80	81.80	2,400.5	63.3	265.6	273.0	0.39	-0.11	
2,515.0	7.00	79.60	2,495.8	65.2	277.0	284.5	0.35	0.21	
2,611.0	7.30	75.80	2,591.0	67.7	288.7	296.5	0.58	0.31	
2,706.0	7.60	77.40	2,685.2	70.6	300.7	308.8	0.38	0.32	
2,802.0	7.60	77.80	2,780.4	73.3	313.1	321.5	0.06	0.00	
2,898.0	7.70	79.30	2,875.6	75.9	325.6	334.3	0.23	0.10	
2,993.0	7.90	78.90	2,969.7	78.3	338.2	347.2	0.22	0.21	
3,089.0	8.20	78.90	3,064.7	80.9	351.4	360.6	0.31	0.31	
3,185.0	7.80	77.90	3,159.8	83.6	364.5	374.0	0.44	-0.42	
3,281.0	7.60	75.20	3,254.9	86.6	377.0	386.8	0.43	-0.21	
3,376.0	8.10	76.70	3,349.0	89.7	389.6	399.8	0.57	0.53	
3,472.0	7.70	76.30	3,444.1	92.8	402.4	413.0	0.42	-0.42	
3,568.0	7.40	80.80	3,539.3	95.3	414.8	425.6	0.69	-0.31	
3,663.0	7.50	80.20	3,633.5	97.3	426.9	437.9	0.13	0.11	
3,758.0	7.30	78.20	3,727.7	99.6	439.0	450.1	0.34	-0.21	
3,855.0	7.60	77.20	3,823.9	102.3	451.3	462.7	0.34	0.31	
3,951.0	7.60	78.40	3,919.0	105.0	463.7	475.4	0.17	0.00	
4,046.0	7.30	79.30	4,013.2	107.4	475.7	487.7	0.34	-0.32	
4,142.0	7.20	79.20	4,108.5	109.6	487.6	499.8	0.10	-0.10	
4,238.0	7.60	79.80	4,203.7	111.9	499.8	512.2	0.42	0.42	
4,333.0	7.40	83.90	4,297.9	113.6	512.1	524.5	0.60	-0.21	
4,397.0	7.20	84.00	4,361.3	114.5	520.2	532.6	0.31	-0.31	
4,461.0	7.50	82.50	4,424.8	115.5	528.3	540.8	0.56	0.47	
4,557.0	7.80	74.60	4,520.0	118.0	540.8	553.5	1.14	0.31	
4,652.0	8.20	72.30	4,614.0	121.8	553.4	566.7	0.54	0.42	
4,748.0	8.30	73.80	4,709.0	125.8	566.6	580.4	0.25	0.10	
4,844.0	8.70	79.10	4,804.0	129.1	580.4	594.6	0.92	0.42	
4,939.0	7.80	79.60	4,898.0	131.6	593.8	608.2	0.95	-0.95	
5,035.0	8.30	81.50	4,993.1	133.8	607.1	621.6	0.59	0.52	
5,131.0	8.10	76.40	5,088.1	136.4	620.5	635.3	0.79	-0.21	
5,227.0	8.10	75.00	5,183.1	139.8	633.6	648.8	0.21	0.00	
5,322.0	8.30	74.40	5,277.1	143.4	646.7	662.4	0.23	0.21	
5,418.0	8.50	76.80	5,372.1	146.8	660.2	676.4	0.42	0.21	
5,514.0	7.60	76.80	5,467.2	149.9	673.3	689.8	0.94	-0.94	
5,609.0	6.70	77.60	5,561.4	152.5	684.9	701.6	0.95	-0.95	
5,705.0	6.10	76.60	5,656.8	154.9	695.3	712.3	0.64	-0.62	
5,801.0	4.90	79.10	5,752.4	156.9	704.3	721.5	1.27	-1.25	
5,897.0	4.60	71.00	5,848.1	158.9	712.0	729.5	0.76	-0.31	
5,992.0	3.10	66.30	5,942.8	161.2	717.9	735.8	1.61	-1.58	
6,088.0	2.10	71.30	6,038.7	162.8	721.9	740.1	1.07	-1.04	

Survey Report



Company: Plains Exploration & Production Co.
Project: Brush Creek
Site: NWNE Sec 11-T9S-R94W
Well: Griffith 11-1B
Wellbore: DD
Design: DD

Local Co-ordinate Reference: Well Griffith 11-1B
TVD Reference: Griffith 11-1B KBE @ 7659.0ft (Grey Wolf 18)
MD Reference: Griffith 11-1B KBE @ 7659.0ft (Grey Wolf 18)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.21 US Multi User 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
6,184.0	1.40	61.40	6,134.7	163.9	724.6	742.9	0.79	-0.73	
6,280.0	1.30	97.20	6,230.7	164.3	726.8	745.1	0.87	-0.10	
6,375.0	0.20	109.80	6,325.7	164.1	728.0	746.2	1.16	-1.16	
6,472.0	0.20	159.40	6,422.7	163.9	728.2	746.4	0.17	0.00	
6,568.0	0.40	172.90	6,518.6	163.4	728.3	746.4	0.22	0.21	
6,664.0	0.30	182.60	6,614.6	162.9	728.3	746.3	0.12	-0.10	
6,759.0	0.50	202.30	6,709.6	162.2	728.2	746.0	0.25	0.21	
6,855.0	0.70	199.70	6,805.6	161.3	727.8	745.5	0.21	0.21	
6,951.0	0.60	231.30	6,901.6	160.4	727.2	744.7	0.38	-0.10	
7,047.0	1.00	236.90	6,997.6	159.6	726.1	743.5	0.42	0.42	
7,143.0	1.30	222.30	7,093.6	158.4	724.7	741.8	0.43	0.31	
7,238.0	1.60	227.40	7,188.6	156.7	723.0	739.8	0.34	0.32	
7,334.0	1.90	219.20	7,284.5	154.5	721.0	737.4	0.41	0.31	
7,430.0	2.50	211.00	7,380.5	151.5	718.9	734.7	0.70	0.62	
7,525.0	1.30	188.90	7,475.4	148.7	717.7	732.9	1.46	-1.26	
7,621.0	1.30	207.30	7,571.4	146.6	717.0	731.8	0.43	0.00	
7,717.0	1.30	213.60	7,667.4	144.8	715.9	730.3	0.15	0.00	
7,813.0	1.30	212.80	7,763.3	142.9	714.7	728.7	0.02	0.00	
7,895.0	1.20	212.60	7,845.3	141.4	713.7	727.5	0.12	-0.12	Last DP Survey @ 7895' MD
7,950.0	1.20	212.60	7,900.3	140.5	713.1	726.6	0.00	0.00	Projection to TD @ 7950' MD

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Griffith 11-1B Tgt - survey misses target center by 17.3ft at 6326.1ft MD (6276.8 TVD, 164.2 N, 727.6 E) - Point	0.00	0.00	6,277.0	156.6	712.0	1,541,075.92	2,337,134.95	39.295529	-107.842504
Griffith 11-1B BHL - survey misses target center by 28.2ft at 7895.0ft MD (7845.3 TVD, 141.4 N, 713.7 E) - Rectangle (sides W100.0 H100.0 D0.0)	0.00	0.00	7,869.0	156.6	712.0	1,541,075.92	2,337,134.95	39.295529	-107.842504

Survey Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
7,895.0	7,845.3	141.4	713.7	Last DP Survey @ 7895' MD
7,950.0	7,900.3	140.5	713.1	Projection to TD @ 7950' MD

Checked By: _____ Approved By: _____ Date: _____

Survey Report - Geographic



Company: Plains Exploration & Production Co.
Project: Brush Creek
Site: NWNE Sec 11-T9S-R94W
Well: Griffith 11-1B
Wellbore: DD
Design: DD

Local Co-ordinate Reference: Well Griffith 11-1B
TVD Reference: Griffith 11-1B KBE @ 7659.0ft (Grey Wolf 18)
MD Reference: Griffith 11-1B KBE @ 7659.0ft (Grey Wolf 18)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.21 US Multi User DB

Project	Brush Creek		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site		NWNE Sec 11-T9S-R94W			
Site Position:		Northing:	1,540,956.98 ft	Latitude:	39.295152
From:	Lat/Long	Easting:	2,336,420.31 ft	Longitude:	-107.845018
Position Uncertainty:	0.0 ft	Slot Radius:	0"	Grid Convergence:	-1.48 °

Well	Griffith 11-1B					
Well Position	+N/-S	0.0 ft	Northing:	1,540,937.72 ft	Latitude:	39.295099
	+E/-W	0.0 ft	Easting:	2,336,419.10 ft	Longitude:	-107.845020
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	7,635.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	3/25/2008	10.65	65.70	52,494

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	77.59	

Survey Program	Date	4/24/2008			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
94.0	7,950.0	Survey #1 (DD)	Geolink MWD	Geolink MWD	

Survey Report - Geographic



Company: Plains Exploration & Production Co.
Project: Brush Creek
Site: NWNE Sec 11-T9S-R94W
Well: Griffith 11-1B
Wellbore: DD
Design: DD

Local Co-ordinate Reference: Well Griffith 11-1B
TVD Reference: Griffith 11-1B KBE @ 7659.0ft (Grey Wolf 18)
MD Reference: Griffith 11-1B KBE @ 7659.0ft (Grey Wolf 18)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.21 US Multi User DB

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	1,540,937.72	2,336,419.10	39.295099	-107.845020
94.0	0.40	120.00	94.0	-0.2	0.3	1,540,937.55	2,336,419.38	39.295099	-107.845019
155.0	1.10	103.90	155.0	-0.4	1.0	1,540,937.28	2,336,420.13	39.295098	-107.845016
248.0	2.10	99.10	248.0	-0.9	3.6	1,540,936.73	2,336,422.66	39.295097	-107.845007
340.0	3.00	94.30	339.9	-1.3	7.7	1,540,936.18	2,336,426.72	39.295095	-107.844993
432.0	3.30	81.60	431.7	-1.1	12.7	1,540,936.26	2,336,431.74	39.295096	-107.844975
524.0	3.70	80.30	523.6	-0.2	18.2	1,540,937.00	2,336,437.31	39.295098	-107.844956
617.0	4.50	76.10	616.3	1.1	24.7	1,540,938.21	2,336,443.84	39.295102	-107.844933
709.0	5.20	76.50	708.0	3.0	32.3	1,540,939.86	2,336,451.44	39.295107	-107.844906
801.0	5.80	81.30	799.6	4.6	40.9	1,540,941.31	2,336,460.13	39.295112	-107.844875
893.0	6.70	78.70	891.0	6.4	50.8	1,540,942.81	2,336,470.03	39.295117	-107.844841
985.0	7.40	81.60	982.3	8.3	61.9	1,540,944.44	2,336,481.20	39.295122	-107.844801
1,077.0	8.00	79.60	1,073.5	10.3	74.1	1,540,946.15	2,336,493.41	39.295127	-107.844758
1,173.0	8.40	74.10	1,168.5	13.5	87.4	1,540,948.93	2,336,506.80	39.295136	-107.844711
1,268.0	8.70	73.00	1,262.5	17.5	100.9	1,540,952.58	2,336,520.44	39.295147	-107.844663
1,364.0	9.10	72.10	1,357.3	21.9	115.1	1,540,956.67	2,336,534.72	39.295159	-107.844613
1,459.0	9.50	70.70	1,451.0	26.8	129.6	1,540,961.19	2,336,549.39	39.295173	-107.844562
1,558.0	9.50	72.30	1,548.7	32.0	145.1	1,540,965.97	2,336,565.01	39.295187	-107.844507
1,653.0	9.10	71.60	1,642.4	36.8	159.7	1,540,970.35	2,336,579.73	39.295200	-107.844456
1,749.0	9.40	71.00	1,737.2	41.7	174.3	1,540,974.92	2,336,594.46	39.295214	-107.844404
1,845.0	9.40	75.30	1,831.9	46.3	189.3	1,540,979.07	2,336,609.57	39.295226	-107.844351
1,941.0	8.90	73.90	1,926.7	50.3	204.1	1,540,982.74	2,336,624.39	39.295237	-107.844299
2,037.0	8.20	79.70	2,021.6	53.6	217.9	1,540,985.67	2,336,638.34	39.295246	-107.844250
2,132.0	7.70	77.70	2,115.7	56.2	230.8	1,540,987.90	2,336,651.29	39.295253	-107.844204
2,228.0	7.20	76.70	2,210.9	58.9	243.0	1,540,990.34	2,336,663.49	39.295261	-107.844162
2,324.0	6.90	78.80	2,306.2	61.4	254.5	1,540,992.55	2,336,675.07	39.295268	-107.844121
2,419.0	6.80	81.80	2,400.5	63.3	265.6	1,540,994.17	2,336,686.28	39.295273	-107.844081
2,515.0	7.00	79.60	2,495.8	65.2	277.0	1,540,995.74	2,336,697.70	39.295278	-107.844041
2,611.0	7.30	75.80	2,591.0	67.7	288.7	1,540,997.99	2,336,709.43	39.295285	-107.844000
2,706.0	7.60	77.40	2,685.2	70.6	300.7	1,541,000.53	2,336,721.48	39.295293	-107.843958
2,802.0	7.60	77.80	2,780.4	73.3	313.1	1,541,002.94	2,336,733.95	39.295300	-107.843914
2,898.0	7.70	79.30	2,875.6	75.9	325.6	1,541,005.15	2,336,746.53	39.295307	-107.843870
2,993.0	7.90	78.90	2,969.7	78.3	338.2	1,541,007.26	2,336,759.25	39.295314	-107.843825
3,089.0	8.20	78.90	3,064.7	80.9	351.4	1,541,009.50	2,336,772.50	39.295321	-107.843778
3,185.0	7.80	77.90	3,159.8	83.6	364.5	1,541,011.85	2,336,785.66	39.295328	-107.843732
3,281.0	7.60	75.20	3,254.9	86.6	377.0	1,541,014.51	2,336,798.24	39.295337	-107.843688
3,376.0	8.10	76.70	3,349.0	89.7	389.6	1,541,017.33	2,336,810.90	39.295345	-107.843643
3,472.0	7.70	76.30	3,444.1	92.8	402.4	1,541,020.08	2,336,823.81	39.295354	-107.843598
3,568.0	7.40	80.80	3,539.3	95.3	414.8	1,541,022.27	2,336,836.22	39.295361	-107.843554
3,663.0	7.50	80.20	3,633.5	97.3	426.9	1,541,023.99	2,336,848.42	39.295366	-107.843511
3,758.0	7.30	78.20	3,727.7	99.6	439.0	1,541,025.97	2,336,860.49	39.295372	-107.843469
3,855.0	7.60	77.20	3,823.9	102.3	451.3	1,541,028.33	2,336,872.84	39.295380	-107.843426
3,951.0	7.60	78.40	3,919.0	105.0	463.7	1,541,030.69	2,336,885.32	39.295387	-107.843382
4,046.0	7.30	79.30	4,013.2	107.4	475.7	1,541,032.76	2,336,897.46	39.295394	-107.843339
4,142.0	7.20	79.20	4,108.5	109.6	487.6	1,541,034.72	2,336,909.41	39.295400	-107.843297
4,238.0	7.60	79.80	4,203.7	111.9	499.8	1,541,036.65	2,336,921.63	39.295406	-107.843254
4,333.0	7.40	83.90	4,297.9	113.6	512.1	1,541,038.10	2,336,933.93	39.295411	-107.843211
4,397.0	7.20	84.00	4,361.3	114.5	520.2	1,541,038.75	2,336,942.04	39.295413	-107.843182
4,461.0	7.50	82.50	4,424.8	115.5	528.3	1,541,039.50	2,336,950.19	39.295416	-107.843153
4,557.0	7.80	74.60	4,520.0	118.0	540.8	1,541,041.73	2,336,962.75	39.295423	-107.843109
4,652.0	8.20	72.30	4,614.0	121.8	553.4	1,541,045.17	2,336,975.51	39.295433	-107.843064
4,748.0	8.30	73.80	4,709.0	125.8	566.6	1,541,048.84	2,336,988.78	39.295444	-107.843018
4,844.0	8.70	79.10	4,804.0	129.1	580.4	1,541,051.79	2,337,002.65	39.295453	-107.842969
4,939.0	7.80	79.60	4,898.0	131.6	593.8	1,541,053.97	2,337,016.10	39.295460	-107.842922
5,035.0	8.30	81.50	4,993.1	133.8	607.1	1,541,055.82	2,337,029.42	39.295466	-107.842875

Survey Report - Geographic



Company: Plains Exploration & Production Co.
Project: Brush Creek
Site: NWE Sec 11-T9S-R94W
Well: Griffith 11-1B
Wellbore: DD
Design: DD

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well Griffith 11-1B
 Griffith 11-1B KBE @ 7659.0ft (Grey Wolf 18)
 Griffith 11-1B KBE @ 7659.0ft (Grey Wolf 18)
 True
 Minimum Curvature
 EDM 2003.21 US Multi User DB

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
5,131.0	8.10	76.40	5,088.1	136.4	620.5	1,541,058.09	2,337,042.91	39.295474	-107.842827
5,227.0	8.10	75.00	5,183.1	139.8	633.6	1,541,061.09	2,337,056.10	39.295483	-107.842781
5,322.0	8.30	74.40	5,277.1	143.4	646.7	1,541,064.33	2,337,069.25	39.295493	-107.842735
5,418.0	8.50	76.80	5,372.1	146.8	660.2	1,541,067.46	2,337,082.92	39.295502	-107.842687
5,514.0	7.60	76.80	5,467.2	149.9	673.3	1,541,070.19	2,337,096.08	39.295511	-107.842641
5,609.0	6.70	77.60	5,561.4	152.5	684.9	1,541,072.52	2,337,107.68	39.295518	-107.842600
5,705.0	6.10	76.60	5,656.8	154.9	695.3	1,541,074.63	2,337,118.17	39.295524	-107.842563
5,801.0	4.90	79.10	5,752.4	156.9	704.3	1,541,076.36	2,337,127.20	39.295530	-107.842531
5,897.0	4.60	71.00	5,848.1	158.9	712.0	1,541,078.19	2,337,134.92	39.295535	-107.842504
5,992.0	3.10	66.30	5,942.8	161.2	717.9	1,541,080.31	2,337,140.93	39.295541	-107.842483
6,088.0	2.10	71.30	6,038.7	162.8	721.9	1,541,081.81	2,337,145.01	39.295546	-107.842469
6,184.0	1.40	61.40	6,134.7	163.9	724.6	1,541,082.87	2,337,147.73	39.295549	-107.842459
6,280.0	1.30	97.20	6,230.7	164.3	726.8	1,541,083.24	2,337,149.86	39.295550	-107.842452
6,375.0	0.20	109.80	6,325.7	164.1	728.0	1,541,083.01	2,337,151.07	39.295550	-107.842448
6,472.0	0.20	159.40	6,422.7	163.9	728.2	1,541,082.79	2,337,151.29	39.295549	-107.842447
6,568.0	0.40	172.90	6,518.6	163.4	728.3	1,541,082.30	2,337,151.38	39.295548	-107.842447
6,664.0	0.30	182.60	6,614.6	162.9	728.3	1,541,081.72	2,337,151.39	39.295546	-107.842446
6,759.0	0.50	202.30	6,709.6	162.2	728.2	1,541,081.09	2,337,151.21	39.295544	-107.842447
6,855.0	0.70	199.70	6,805.6	161.3	727.8	1,541,080.16	2,337,150.83	39.295542	-107.842448
6,951.0	0.60	231.30	6,901.6	160.4	727.2	1,541,079.31	2,337,150.21	39.295539	-107.842450
7,047.0	1.00	236.90	6,997.6	159.6	726.1	1,541,078.56	2,337,149.10	39.295537	-107.842454
7,143.0	1.30	222.30	7,093.6	158.4	724.7	1,541,077.34	2,337,147.63	39.295534	-107.842459
7,238.0	1.60	227.40	7,188.6	156.7	723.0	1,541,075.69	2,337,145.89	39.295529	-107.842465
7,334.0	1.90	219.20	7,284.5	154.5	721.0	1,541,073.60	2,337,143.84	39.295523	-107.842472
7,430.0	2.50	211.00	7,380.5	151.5	718.9	1,541,070.63	2,337,141.68	39.295515	-107.842480
7,525.0	1.30	188.90	7,475.4	148.7	717.7	1,541,067.82	2,337,140.37	39.295507	-107.842484
7,621.0	1.30	207.30	7,571.4	146.6	717.0	1,541,065.79	2,337,139.65	39.295502	-107.842486
7,717.0	1.30	213.60	7,667.4	144.8	715.9	1,541,063.95	2,337,138.50	39.295496	-107.842490
7,813.0	1.30	212.80	7,763.3	142.9	714.7	1,541,062.16	2,337,137.26	39.295491	-107.842495
7,895.0	1.20	212.60	7,845.3	141.4	713.7	1,541,060.68	2,337,136.26	39.295487	-107.842498
Last DP Survey @ 7895' MD									
7,950.0	1.20	212.60	7,900.3	140.5	713.1	1,541,059.72	2,337,135.61	39.295485	-107.842500
Projection to TD @ 7950' MD									

Survey Report - Geographic



Company: Plains Exploration & Production Co.
Project: Brush Creek
Site: NWN Sec 11-T9S-R94W
Well: Griffith 11-1B
Wellbore: DD
Design: DD

Local Co-ordinate Reference: Well Griffith 11-1B
TVD Reference: Griffith 11-1B KBE @ 7659.0ft (Grey Wolf 18)
MD Reference: Griffith 11-1B KBE @ 7659.0ft (Grey Wolf 18)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.21 US Multi User DB

Targets

Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
Griffith 11-1B Tgt	0.00	0.00	6,277.0	156.6	712.0	1,541,075.92	2,337,134.95	39.295529	-107.842504
- survey misses target center by 17.3ft at 6326.1ft MD (6276.8 TVD, 164.2 N, 727.6 E)									
- Point									
Griffith 11-1B BHL	0.00	0.00	7,869.0	156.6	712.0	1,541,075.92	2,337,134.95	39.295529	-107.842504
- survey misses target center by 28.2ft at 7895.0ft MD (7845.3 TVD, 141.4 N, 713.7 E)									
- Rectangle (sides W100.0 H100.0 D0.0)									

Survey Annotations

Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
7,895.0	7,845.3	141.4	713.7	Last DP Survey @ 7895' MD
7,950.0	7,900.3	140.5	713.1	Projection to TD @ 7950' MD

Checked By: _____ Approved By: _____ Date: _____