



Weatherford®

SURVEY REPORT

30-025-41947

Report Date: 9/2/2014
Customer: Fasken
Job Name: 10192626
Well Name: Paloma 21 Fed #4H

Field: Bone Spring
Rig: Nomac # 54
Rig Loc: Lea County

Survey Calculation Method: Minimum Curvature						
Magnetic Reference	Target Direction	Total Magnetic Field	Magnetic Dip Angle	Magnetic Declination	Grid Convergence	Total Correction
Grid North	179.59 deg	48510 nT	60.41 deg	7.34 deg	0.42 deg	6.92 deg
Survey Tie-On	Depth	INC	AZ	TVD	NS	EW
	5032.00 ft	1.22 deg	201.94 deg	5031.11 ft	-42.07 ft	-5.39 ft

Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head			
				NS (ft)	EW (ft)	Vsect (ft)	Dogleg (deg/100ft)
5321.00	0.93	213.53	5320.06	-46.88	-7.84	46.82	0.12
5416.00	0.86	202.18	5415.05	-48.18	-8.53	48.12	0.20
5511.00	0.91	203.60	5510.04	-49.53	-9.10	49.47	0.06
5606.00	0.93	204.59	5605.02	-50.93	-9.72	50.85	0.03
5701.00	0.75	202.75	5700.01	-52.20	-10.29	52.13	0.19
5796.00	0.91	184.32	5795.00	-53.53	-10.58	53.45	0.33
5890.00	0.77	182.14	5888.99	-54.90	-10.66	54.82	0.15
5985.00	2.20	268.72	5983.97	-55.58	-12.51	55.49	2.41
6080.00	2.69	272.09	6078.88	-55.54	-16.56	55.42	0.54
6175.00	2.71	284.90	6173.78	-54.88	-20.96	54.73	0.63
6270.00	2.95	283.29	6268.66	-53.74	-25.51	53.56	0.27
6365.00	2.06	288.06	6363.57	-52.65	-29.51	52.44	0.96
6460.00	2.70	281.52	6458.49	-51.67	-33.33	51.43	0.73
6555.00	2.79	284.67	6553.38	-50.64	-37.76	50.37	0.18
6650.00	3.34	286.84	6648.24	-49.25	-42.64	48.95	0.59
6745.00	3.30	280.50	6743.08	-47.95	-47.98	47.61	0.39
6841.00	3.28	280.60	6838.92	-46.95	-53.39	46.56	0.02
6935.00	3.37	283.23	6932.76	-45.82	-58.73	45.40	0.19
7030.00	3.20	281.41	7027.61	-44.65	-64.04	44.20	0.21
7125.00	3.17	280.61	7122.46	-43.65	-69.23	43.15	0.06
7220.00	3.36	286.54	7217.31	-42.37	-74.48	41.84	0.41
7314.00	3.05	279.26	7311.16	-41.18	-79.58	40.61	0.54
7409.00	2.95	283.69	7406.03	-40.20	-84.45	39.59	0.27
7504.00	2.79	284.49	7500.91	-39.04	-89.07	38.40	0.17
7598.00	2.88	283.34	7594.80	-37.92	-93.58	37.25	0.11
7692.00	3.94	292.21	7688.63	-36.16	-98.87	35.45	1.26
7788.00	4.27	287.12	7784.38	-33.86	-105.34	33.10	0.51
7883.00	3.87	285.18	7879.14	-31.98	-111.81	31.18	0.45
7978.00	4.00	285.42	7973.92	-30.26	-118.10	29.41	0.14
8073.00	3.76	283.84	8068.70	-28.63	-124.32	27.74	0.28
8168.00	3.21	295.54	8163.53	-26.74	-129.74	25.81	0.94
8262.00	3.08	298.10	8257.39	-24.42	-134.35	23.45	0.20
8357.00	3.03	298.65	8352.25	-22.01	-138.80	21.02	0.06
8452.00	2.41	297.79	8447.14	-19.88	-142.77	18.85	0.65
8547.00	2.47	287.50	8542.06	-18.33	-146.49	17.28	0.46

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Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head		Vsect (ft)	Dogleg (deg/100ft)
				NS (ft)	EW (ft)		
8641.00	2.45	287.34	8635.97	-17.12	-150.34	16.04	0.02
8737.00	2.29	283.72	8731.89	-16.05	-154.16	14.95	0.23
8831.00	2.29	297.24	8825.81	-14.75	-157.66	13.62	0.57
8925.00	3.10	310.77	8919.71	-12.23	-161.25	11.08	1.09
9020.00	1.64	328.19	9014.63	-9.40	-163.91	8.22	1.70
9116.00	1.40	266.84	9110.60	-8.29	-165.81	7.11	1.63
9212.00	0.77	266.39	9206.58	-8.40	-167.62	7.20	0.66
9307.00	0.53	262.81	9301.58	-8.49	-168.70	7.29	0.26
9402.00	0.30	209.63	9396.57	-8.77	-169.25	7.55	0.45
9496.00	2.47	278.01	9490.54	-8.70	-171.38	7.47	2.53
9591.00	3.03	281.31	9585.43	-7.92	-175.87	6.66	0.61
9684.00	3.88	278.65	9678.26	-6.96	-181.39	5.67	0.93
9780.00	3.72	278.60	9774.05	-6.01	-187.68	4.67	0.17
9874.00	3.33	277.78	9867.87	-5.18	-193.40	3.80	0.42
9969.00	3.40	274.04	9962.71	-4.61	-198.95	3.19	0.24
10064.00	3.32	274.93	10057.55	-4.18	-204.50	2.71	0.10
10159.00	3.13	270.49	10152.40	-3.92	-209.83	2.42	0.33
10279.00	5.89	224.31	10272.05	-8.30	-217.41	6.74	3.63
10311.00	8.99	206.65	10303.78	-11.71	-219.68	10.14	11.93
10342.00	11.77	198.32	10334.27	-16.88	-221.76	15.29	10.17
10374.00	14.00	193.91	10365.46	-23.73	-223.72	22.13	7.61
10406.00	16.20	192.00	10396.36	-31.86	-225.58	30.24	7.05
10437.00	17.97	187.27	10425.99	-40.83	-227.08	39.21	7.25
10469.00	19.44	180.81	10456.30	-51.06	-227.78	49.42	7.93
10500.00	21.08	178.49	10485.38	-61.79	-227.71	60.16	5.89
10532.00	23.15	179.60	10515.03	-73.83	-227.51	72.20	6.60
10563.00	25.69	179.32	10543.25	-86.65	-227.39	85.02	8.20
10595.00	28.21	179.09	10571.77	-101.15	-227.19	99.52	7.88
10626.00	29.76	178.23	10598.89	-116.16	-226.83	114.54	5.18
10658.00	30.91	176.86	10626.51	-132.31	-226.14	130.69	4.19
10690.00	32.30	175.37	10653.76	-149.04	-225.00	147.43	4.98
10721.00	34.37	175.06	10679.66	-166.01	-223.57	164.41	6.70
10752.00	36.89	176.85	10704.86	-184.03	-222.31	182.43	8.80
10784.00	40.64	177.96	10729.80	-204.04	-221.41	202.45	11.92
10815.00	43.06	177.80	10752.89	-224.70	-220.65	223.12	7.81
10847.00	44.51	177.50	10775.99	-246.83	-219.74	245.25	4.58
10878.00	46.34	177.47	10797.75	-268.89	-218.77	267.32	5.90
10909.00	48.93	178.23	10818.64	-291.77	-217.91	290.21	8.55
10940.00	51.13	179.08	10838.55	-315.52	-217.36	313.96	7.40
10972.00	52.80	179.39	10858.27	-340.72	-217.02	339.16	5.27
11003.00	55.02	179.21	10876.53	-365.77	-216.71	364.21	7.18
11035.00	58.14	178.78	10894.15	-392.47	-216.24	390.92	9.81
11066.00	60.74	178.89	10909.91	-419.16	-215.70	417.61	8.39
11098.00	63.12	178.44	10924.97	-447.39	-215.04	445.84	7.54
11129.00	65.54	178.42	10938.39	-475.31	-214.28	473.77	7.81
11160.00	67.74	178.66	10950.68	-503.76	-213.55	502.22	7.13
11192.00	69.92	179.30	10962.24	-533.60	-213.02	532.06	7.06
11224.00	72.60	179.88	10972.52	-563.90	-212.81	562.36	8.55
11255.00	75.43	179.79	10981.06	-593.69	-212.72	592.16	9.13
11287.00	78.08	179.89	10988.39	-624.84	-212.63	623.30	8.29

Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head		VSect (ft)	Dogleg (deg/100ft)
				NS (ft)	EW (ft)		
11318.00	79.52	179.65	10994.41	-655.25	-212.51	653.71	4.71
11350.00	83.76	178.90	10999.06	-686.90	-212.11	685.36	13.45
11382.00	87.76	178.51	11001.43	-718.80	-211.39	717.26	12.56
11413.00	89.93	178.10	11002.05	-749.77	-210.47	748.25	7.12
11508.00	91.40	177.63	11000.95	-844.70	-206.93	843.20	1.62
11543.00	91.79	177.95	10999.97	-879.66	-205.58	878.17	1.44
11637.00	88.77	180.06	10999.51	-973.63	-203.95	972.14	3.92
11732.00	89.07	178.24	11001.31	-1068.60	-202.54	1067.12	1.94
11828.00	89.45	180.50	11002.55	-1164.58	-201.49	1163.10	2.39
11922.00	88.95	181.83	11003.86	-1258.54	-203.40	1257.06	1.51
12017.00	89.57	181.56	11005.08	-1353.49	-206.21	1351.98	0.71
12112.00	87.09	180.75	11007.85	-1448.43	-208.12	1446.90	2.75
12206.00	89.44	180.47	11010.70	-1542.37	-209.12	1540.84	2.52
12301.00	88.77	179.47	11012.18	-1637.36	-209.07	1635.82	1.27
12396.00	89.07	180.24	11013.97	-1732.34	-208.83	1730.80	0.87
12491.00	86.73	179.29	11017.45	-1827.27	-208.44	1825.73	2.66
12587.00	88.64	176.37	11021.33	-1923.11	-204.81	1921.59	3.63
12682.00	91.30	178.88	11021.38	-2018.01	-200.88	2016.52	3.85
12776.00	87.41	179.63	11022.44	-2111.98	-199.65	2110.49	4.21
12871.00	84.99	176.97	11028.74	-2206.71	-196.84	2205.24	3.78
12965.00	89.63	175.51	11033.15	-2300.38	-190.69	2298.95	5.17
13060.00	91.98	178.41	11031.81	-2395.22	-185.65	2393.83	3.93
13155.00	88.77	180.08	11031.19	-2490.19	-184.40	2488.81	3.81
13250.00	86.79	176.81	11034.87	-2585.07	-181.82	2583.70	4.02
13345.00	87.72	174.19	11039.42	-2679.65	-174.38	2678.34	2.92
13439.00	89.81	177.82	11041.45	-2773.38	-167.83	2772.11	4.46
13534.00	88.27	181.59	11043.04	-2868.35	-167.34	2867.08	4.29
13628.00	90.68	181.09	11043.90	-2962.31	-169.54	2961.02	2.62
13723.00	89.69	184.28	11043.60	-3057.19	-173.99	3055.87	3.52
13818.00	86.36	181.42	11046.87	-3152.00	-178.71	3150.64	4.62
13877.00	88.09	179.31	11049.73	-3210.92	-179.09	3209.56	4.62
13972.00	88.21	178.04	11052.79	-3305.84	-176.89	3304.49	1.34
14066.00	88.64	179.28	11055.38	-3399.78	-174.70	3398.44	1.40
14161.00	88.65	179.96	11057.62	-3494.75	-174.07	3493.42	0.72
14255.00	88.58	179.95	11059.90	-3588.72	-173.99	3587.39	0.08
14350.00	88.39	179.83	11062.41	-3683.69	-173.81	3682.35	0.24
14445.00	90.86	180.11	11063.03	-3778.68	-173.76	3777.34	2.62
14539.00	90.37	179.93	11062.02	-3872.68	-173.79	3871.33	0.56
14635.00	90.62	179.90	11061.19	-3968.67	-173.65	3967.33	0.26
14729.00	90.74	179.59	11060.08	-4062.66	-173.23	4061.32	0.35
14824.00	88.83	179.79	11060.43	-4157.66	-172.72	4156.32	2.02
14919.00	89.03	179.69	11062.21	-4252.64	-172.29	4251.30	0.24
15013.00	89.32	179.59	11063.56	-4346.63	-171.70	4345.29	0.33
15108.00	89.57	179.16	11064.48	-4441.62	-170.66	4440.28	0.52
15203.00	90.12	179.19	11064.74	-4536.61	-169.29	4535.28	0.58
15297.00	89.57	180.32	11064.99	-4630.60	-168.89	4629.28	1.34
15392.00	88.33	181.75	11066.73	-4725.57	-170.61	4724.23	1.99
15486.00	88.27	182.21	11069.52	-4819.47	-173.85	4818.10	0.49
15582.00	88.40	181.97	11072.31	-4915.37	-177.35	4913.97	0.28
15677.00	88.58	181.92	11074.81	-5010.28	-180.58	5008.86	0.20

Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	Well Head		Vsect (ft)	Dogleg (deg/100ft)
				NS (ft)	EW (ft)		
15771.00	89.57	181.35	11076.33	-5104.23	-183.26	5102.78	1.22
15865.00	90.37	181.44	11076.38	-5198.20	-185.55	5196.74	0.86
15960.00	90.00	180.27	11076.07	-5293.18	-186.96	5291.71	1.29
16053.00	90.06	179.19	11076.02	-5386.18	-186.52	5384.71	1.16
16148.00	90.37	179.44	11075.67	-5481.17	-185.39	5479.71	0.42
16243.00	88.52	179.07	11076.59	-5576.16	-184.15	5574.70	1.99
16337.00	88.27	178.77	11079.22	-5670.10	-182.38	5668.65	0.42
16432.00	88.77	178.86	11081.67	-5765.05	-180.42	5763.61	0.53
16527.00	89.32	179.08	11083.26	-5860.02	-178.71	5858.59	0.62
16621.00	89.81	179.05	11083.97	-5954.01	-177.18	5952.59	0.52
16716.00	90.25	178.85	11083.92	-6048.99	-175.44	6047.58	0.51
16810.00	90.79	178.63	11083.07	-6142.96	-173.37	6141.57	0.62
16905.00	88.89	177.98	11083.33	-6237.92	-170.56	6236.54	2.11
Projected to Total Depth:							
16968.00	88.89	177.98	11084.55	-6300.87	-168.34	6303.11	0.00

Weatherford surveys from 5321 ft MD to 16905 ft MD

TD at 16968.00 ft MD

The total correction is 6.92 deg relative to Grid North.