



Samson Resources Company

La Plata County, C.O.

SEC 13U-T34N-7W

Harper #3-13U

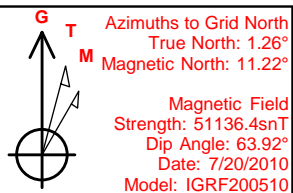
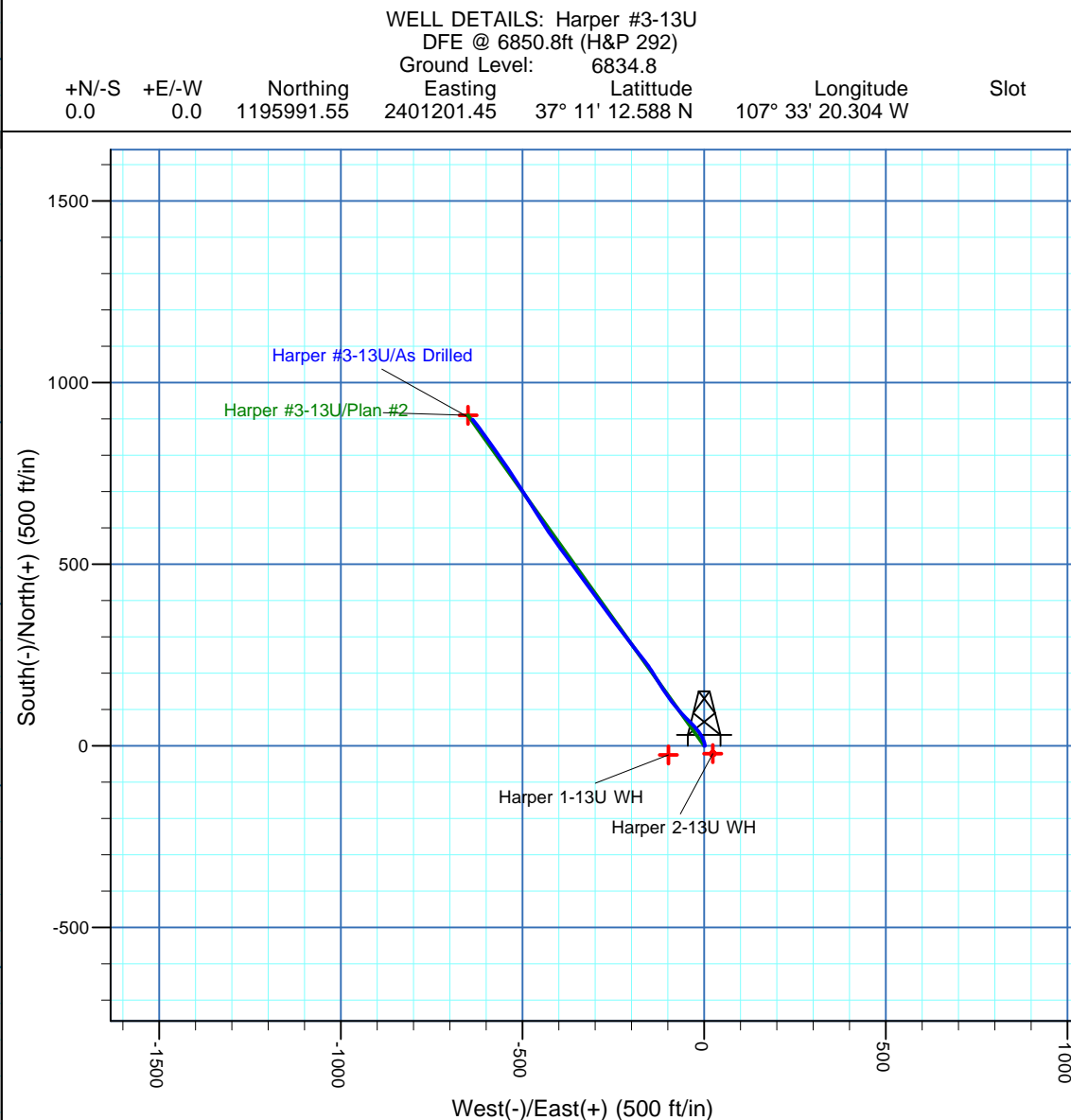
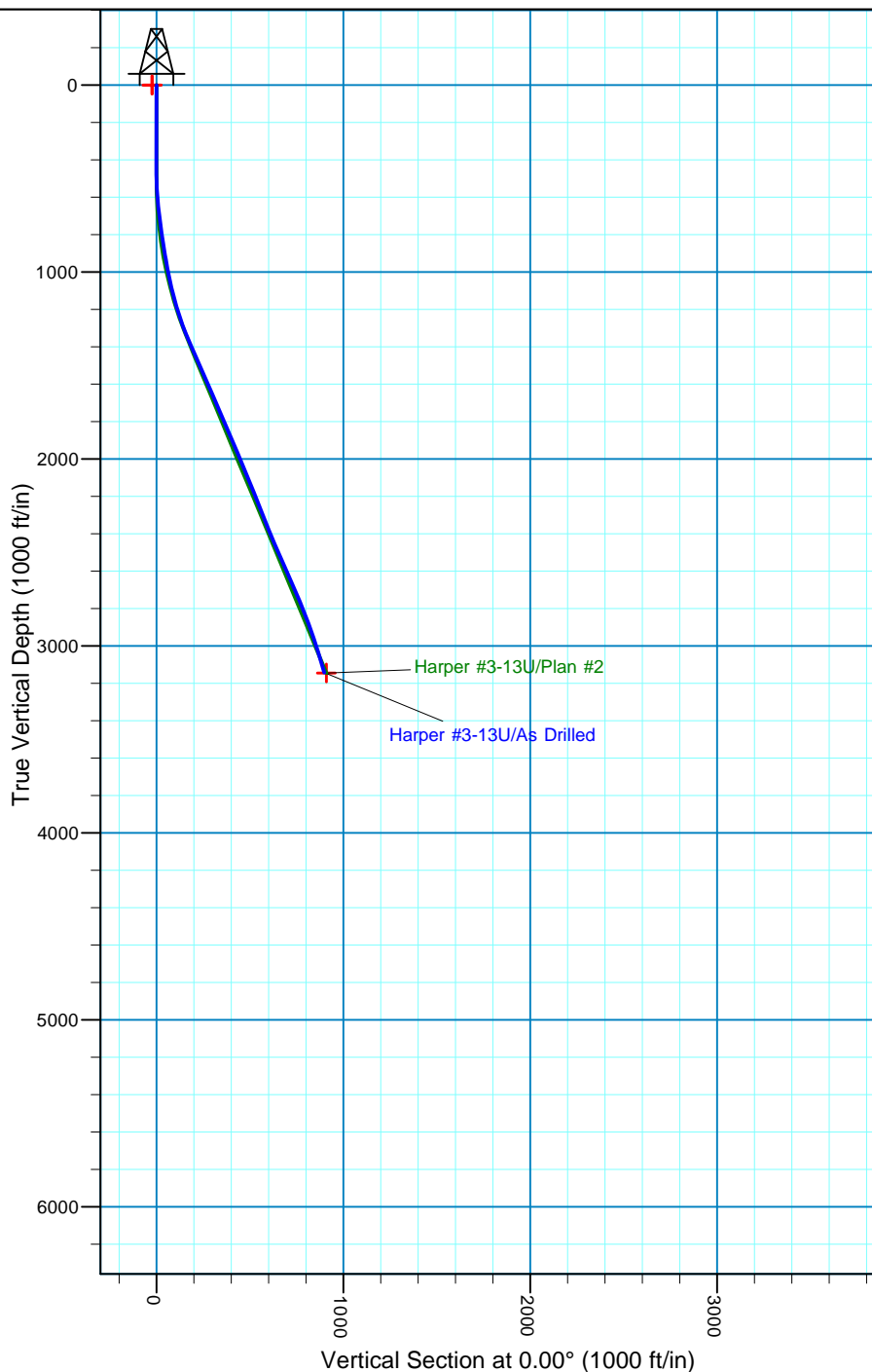
Original Hole

Design: As Drilled

Standard Survey Report

26 July, 2010





REFERENCE INFORMATION
Co-ordinate (N/E) Reference: Well Harper #3-13U, Grid North
Vertical (TVD) Reference: DFE @ 6850.8ft (H&P 292)
Section (VS) Reference: Slot - (0.0N, 0.0E)
Measured Depth Reference: DFE @ 6850.8ft (H&P 292)
Calculation Method: Minimum Curvature

Company:	Samson Resources Company	Local Co-ordinate Reference:	Well Harper #3-13U
Project:	La Plata County, C.O.	TVD Reference:	DFE @ 6850.8ft (H&P 292)
Site:	SEC 13U-T34N-7W	MD Reference:	DFE @ 6850.8ft (H&P 292)
Well:	Harper #3-13U	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	EDM 5000.1 Single User Db

Project	La Plata County, C.O.		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Southern Zone		Using geodetic scale factor

Site	SEC 13U-T34N-7W		
Site Position:		Northing:	1,199,629.45 usft
From:	Lat/Long	Easting:	2,402,382.83 usft
Position Uncertainty:	30.0 ft	Slot Radius:	12-1/4 "
		Latitude:	37° 11' 48.804 N
		Longitude:	107° 33' 6.696 W
		Grid Convergence:	-1.26 °

Well	Harper #3-13U, FC HZ Well		
Well Position	+N-S	0.0 ft	Northing: 1,195,991.55 usft
	+E-W	0.0 ft	Easting: 2,401,201.45 usft
Position Uncertainty	3.5 ft	Wellhead Elevation:	ft
		Latitude:	37° 11' 12.588 N
		Longitude:	107° 33' 20.304 W
		Ground Level:	6,834.8 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	7/20/2010	9.96	63.92	51,136

Design	As Drilled				
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	0.00	

Survey Program	Date	7/26/2010			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
421.0	3,389.0	SDI MWD (Original Hole)	MWD SDI	MWD - Standard ver 1.0.1	

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
421.0	0.45	112.13	421.0	-0.6	1.5	-0.6	0.11	0.11	0.00
481.0	0.84	16.02	481.0	-0.3	1.9	-0.3	1.66	0.65	-160.18
542.0	2.87	1.15	542.0	1.7	2.0	1.7	3.39	3.33	-24.38
604.0	5.27	346.51	603.8	6.0	1.4	6.0	4.19	3.87	-23.61
663.0	6.91	338.49	662.5	11.9	-0.5	11.9	3.12	2.78	-13.59
725.0	7.05	338.98	724.0	18.9	-3.3	18.9	0.25	0.23	0.79
788.0	9.41	331.57	786.4	27.1	-7.1	27.1	4.10	3.75	-11.76
852.0	10.71	324.45	849.4	36.5	-13.1	36.5	2.81	2.03	-11.13
916.0	12.56	319.40	912.1	46.7	-21.0	46.7	3.30	2.89	-7.89

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Well:	Harper #3-13U	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
980.0	14.77	315.35	974.2	57.7	-31.3	57.7	3.76	3.45	-6.33
1,043.0	16.75	315.29	1,034.9	69.9	-43.3	69.9	3.14	3.14	-0.10
1,107.0	18.40	316.96	1,095.9	83.8	-56.7	83.8	2.70	2.58	2.61
1,171.0	20.04	318.19	1,156.3	99.4	-70.9	99.4	2.64	2.56	1.92
1,235.0	22.03	322.17	1,216.0	117.1	-85.6	117.1	3.83	3.11	6.22
1,299.0	23.37	325.00	1,275.1	136.9	-100.2	136.9	2.70	2.09	4.42
1,361.0	25.35	327.71	1,331.6	158.2	-114.4	158.2	3.67	3.19	4.37
1,425.0	27.06	328.62	1,389.0	182.2	-129.3	182.2	2.74	2.67	1.42
1,488.0	28.46	327.34	1,444.7	207.1	-144.9	207.1	2.42	2.22	-2.03
1,552.0	28.78	320.74	1,500.9	231.9	-162.8	231.9	4.96	0.50	-10.31
1,616.0	28.62	322.89	1,557.1	256.0	-181.8	256.0	1.63	-0.25	3.36
1,680.0	28.87	321.98	1,613.2	280.4	-200.6	280.4	0.79	0.39	-1.42
1,744.0	29.03	323.60	1,669.2	305.1	-219.3	305.1	1.25	0.25	2.53
1,807.0	29.36	322.68	1,724.2	329.7	-237.8	329.7	0.88	0.52	-1.46
1,871.0	28.37	323.78	1,780.2	354.4	-256.3	354.4	1.76	-1.55	1.72
1,935.0	28.12	323.83	1,836.6	378.9	-274.2	378.9	0.39	-0.39	0.08
1,999.0	27.60	323.10	1,893.2	402.9	-292.0	402.9	0.97	-0.81	-1.14
2,062.0	27.53	323.62	1,949.0	426.3	-309.4	426.3	0.40	-0.11	0.83
2,126.0	27.44	323.75	2,005.8	450.1	-326.8	450.1	0.17	-0.14	0.20
2,190.0	26.90	323.47	2,062.8	473.6	-344.2	473.6	0.87	-0.84	-0.44
2,253.0	26.73	323.60	2,119.0	496.5	-361.1	496.5	0.29	-0.27	0.21
2,317.0	26.46	324.04	2,176.2	519.6	-378.0	519.6	0.52	-0.42	0.69
2,381.0	26.41	324.06	2,233.5	542.7	-394.7	542.7	0.08	-0.08	0.03
2,444.0	25.89	324.34	2,290.1	565.2	-411.0	565.2	0.85	-0.83	0.44
2,508.0	26.12	325.33	2,347.6	588.1	-427.1	588.1	0.77	0.36	1.55
2,572.0	27.16	327.28	2,404.8	612.0	-443.0	612.0	2.12	1.63	3.05
2,635.0	26.50	327.21	2,461.0	635.9	-458.4	635.9	1.05	-1.05	-0.11
2,699.0	26.48	327.49	2,518.3	660.0	-473.8	660.0	0.20	-0.03	0.44
2,763.0	28.24	327.91	2,575.1	684.8	-489.5	684.8	2.77	2.75	0.66
2,827.0	28.76	327.35	2,631.4	710.6	-505.9	710.6	0.91	0.81	-0.88
2,890.0	27.39	327.29	2,687.0	735.6	-521.9	735.6	2.18	-2.17	-0.10
2,954.0	26.48	325.97	2,744.0	759.8	-537.8	759.8	1.70	-1.42	-2.06
3,017.0	26.32	325.40	2,800.5	782.9	-553.6	782.9	0.48	-0.25	-0.90
3,081.0	23.92	325.18	2,858.4	805.3	-569.1	805.3	3.75	-3.75	-0.34
3,143.0	23.04	324.85	2,915.3	825.5	-583.3	825.5	1.44	-1.42	-0.53
3,207.0	22.71	324.41	2,974.2	845.8	-597.7	845.8	0.58	-0.52	-0.69
3,271.0	21.54	323.63	3,033.5	865.3	-611.8	865.3	1.88	-1.83	-1.22
3,334.0	20.64	322.28	3,092.3	883.4	-625.5	883.4	1.62	-1.43	-2.14
3,389.0	20.64	322.28	3,143.8	898.7	-637.3	898.7	0.00	0.00	0.00

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Well:	Harper #3-13U	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	EDM 5000.1 Single User Db

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
Harper 2-13U WH	0.00	360.00	0.0	-21.4	23.9	1,195,970.15	2,401,225.36	37° 11' 12.381 N	107° 33' 20.003 W
- actual wellpath misses target center by 32.1ft at 0.1ft MD (0.1 TVD, 0.0 N, 0.0 E)									
- Circle (radius 5.0)									
Harper 1-13U WH	0.00	0.00	0.0	-24.9	-98.3	1,195,966.69	2,401,103.12	37° 11' 12.321 N	107° 33' 21.512 W
- actual wellpath misses target center by 101.4ft at 0.0ft MD (0.0 TVD, 0.0 N, 0.0 E)									
- Circle (radius 0.0)									
Harper #3-13U PH BF	0.00	0.00	3,145.0	910.0	-650.0	1,196,901.56	2,400,551.45	37° 11' 21.441 N	107° 33' 28.582 W
- actual wellpath misses target center by 17.0ft at 3389.0ft MD (3143.8 TVD, 898.7 N, -637.3 E)									
- Point									

Checked By: _____	Approved By: _____	Date: _____
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