



30-039-27288

Williams Production Company
New Mexico
Rio Arriba County
Rosa Unit 230A Single-Shot Survey

Sperry-Sun

Survey Report

10 October, 2003

Survey Ref: svy6298



HALLIBURTON

Survey Report for Rosa Unit 230A Single-Shot Survey

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
0.00	0.000	0.000	0.00	0.00 N	0.00 E	0.00	
346.00	1.000	1.800	345.98	3.02 N	0.09 E	3.02	0.289
587.00	1.000	343.800	586.95	7.14 N	0.43 W	7.14	0.130
709.00	1.000	330.800	708.93	9.09 N	1.24 W	9.09	0.186
834.00	1.000	318.800	833.91	10.86 N	2.49 W	10.86	0.167
1053.00	1.000	310.800	1052.88	13.55 N	5.20 W	13.55	0.064
1270.00	1.000	307.800	1269.84	15.95 N	8.13 W	15.95	0.024
1487.00	1.000	316.800	1486.81	18.49 N	10.92 W	18.49	0.072
3100.00	1.000	52.800	3099.65	37.26 N	9.34 W	37.26	0.092
3157.00	1.000	52.800	3156.65	37.86 N	8.55 W	37.86	0.000

All data is in Feet (US Survey) unless otherwise stated. Directions and coordinates are relative to True North. Vertical depths are relative to Well. Northings and Eastings are relative to Well.

The Dogleg Severity is in Degrees per 100 feet (US Survey).
Vertical Section is from Well and calculated along an Azimuth of 0.000° (True).

Based upon Minimum Curvature type calculations, at a Measured Depth of 3157.00ft.,
The Bottom Hole Displacement is 38.82ft., in the Direction of 347.272° (True).

Comments

Measured Depth (ft)	Station Coordinates			Comment
	TVD (ft)	Northings (ft)	Eastings (ft)	
346.00	345.98	3.02 N	0.09 E	First Single-Shot Survey
3100.00	3099.65	37.26 N	9.34 W	Final Single-Shot Survey
3157.00	3156.65	37.86 N	8.55 W	Survey Projection to TD