

SOUTHLAND ROYALTY COMPANY
 HARPER NO. 2E 7-4-31-12
 BASIN DAKOTA FIELD
 SAN JUAN COUNTY, NEW MEXICO
 MAGNETIC MULTISHOT SURVEY

DATE OF SURVEY NOVEMBER 04, 1979
 VERTICAL SECTION DIRECTION
 13 DEG. EAST CORRECTION APPLIED
 JOB NUMBER MS-6405

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MEASURED DEPTH	TRUE VERTICAL DEPTH	SUB SEA TVD	RECORD OF SURVEY			DJO-LEG SEV DEG/100	TOTAL		VERTICAL SECTION
			COURSE INCLINATION DEG MIN	COURSE DIRECTION DEG	ASSUME VERTICAL TO 4990 FEET		RECTANGULAR NORTH/SOUTH	COORDINATES EAST/WEST	
4900	4990.00	4990.00	0 55	N 37 W	9.17	0.	0.	0.	0.
5000	5000.00	5000.00	0 45	N 21 W	0.28	0.06 N	0.05 W	0.05 W	-0.08
5100	5099.99	5099.99	0 20	N 35 W	0.43	1.31 N	0.76 W	0.76 W	-1.50
5200	5199.98	5199.98	0 49	N 17 W	0.51	2.16 N	1.17 W	1.17 W	-2.40
5300	5299.98	5299.98	0 55	N 37 E	0.79	3.08 N	1.54 W	1.54 W	-3.35
5400	5399.97	5399.97	0 55	N 23 E	0.22	4.40 N	1.27 W	1.27 W	-4.18
5500	5499.96	5499.96	1 30	N 60 E	0.95	5.78 N	0.47 W	0.47 W	-4.72
5600	5599.94	5599.94	2 30	N 66 E	1.02	7.17 N	0.97 E	0.97 E	-4.85
5700	5699.87	5699.87	2 45	N 63 E	0.28	8.71 N	4.10 E	4.10 E	-4.01
5800	5799.77	5799.77	2 15	N 72 E	0.63	10.69 N	8.23 E	8.23 E	-2.86
5900	5899.67	5899.67	4 0	N 80 E	1.80	12.38 N	12.23 E	12.23 E	-1.57
6000	5999.52	5999.52	7 45	N 83 E	3.76	13.59 N	17.53 E	17.53 E	0.92
6100	6098.98	6098.98	12 0	N 88 E	4.33	15.02 N	27.67 E	27.67 E	6.36
6200	6197.48	6197.48	14 45	N 86 E	2.79	16.21 N	44.76 E	44.76 E	16.48
6300	6294.75	6294.75	18 30	S 86 E	4.39	17.46 N	67.85 E	67.85 E	30.42
6400	6390.57	6390.57	21 15	S 73 E	5.19	17.24 N	96.39 E	96.39 E	48.99
6500	6484.65	6484.65	24 30	S 62 E	5.36	10.83 N	129.57 E	129.57 E	75.29
6600	6576.82	6576.82	23 30	S 61 E	1.08	4.21 S	165.23 E	165.23 E	109.79
6700	6668.17	6668.17	24 0	S 55 E	2.47	23.61 S	200.98 E	200.98 E	147.67
6800	6759.71	6759.71	30 0	S 44 E	7.78	44.95 S	235.08 E	235.08 E	185.97
6900	6848.83	6848.83	33 0	S 34 E	6.02	74.64 S	269.16 E	269.16 E	230.64
7000	6934.14	6934.14	36 45	S 16 E	10.91	115.24 S	301.78 E	301.78 E	282.70
7100	7016.39	7016.39	42 0	S 21 W	14.96	166.73 S	325.33 E	325.33 E	337.24
7200	7093.84	7093.84	43 30	S 9 W	8.23	229.12 S	334.18 E	334.18 E	390.63
7300	7167.69	7167.69	43 0	S 9 W	8.23	295.08 S	322.37 E	322.37 E	433.42
7400	7240.65	7240.65	43 0	S 9 W	8.23	361.01 S	304.61 E	304.61 E	472.38

*** THE CALCULATIONS ARE BASED ON THE MINIMUM RADIUS OF CURVATURE METHOD ***

HORIZONTAL DISPLACEMENT = 472.38 FEET AT SOUTH 40 DEG. 10 MIN. EAST (TRUE)