

039-29529



Gyroscopic Survey Report
for
Black Hills

Well Location	Jicarilla 29-02-29
Well Name	Jicarilla 29-02-29#43
Rig Name	A Plus Rig 11
Survey Date	6/3/2013
Latitude	36.6911670N
North Reference	True North
Grid Correction	None
Depth Reference	kb (13.00 ft)
Calculation Method	Minimum Curvature
Section (VS) Ref	Undefined
Definitive Survey	29-02-29 #43 Outrun
Operator(s)	Danny Moore

Well Notes

OIL CONS. DIV DIST. 3
APR 23 2014



Well Name: Jicarilla 29-02-29#43

Survey: 29-02-29 #43 Outrun

Survey Date: 6/3/2013

MD ft	Inc deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	DLS 7100ft
0.00	0.00	0.00	0.00	0.00	0.00	Invalid
25.00	0.09	170.95	25.00	-0.02	0.00	0.35
50.00	0.17	170.95	50.00	-0.07	0.01	0.35
75.00	0.26	170.95	75.00	-0.17	0.03	0.35
100.00	0.32	171.94	100.00	-0.29	0.05	0.23
125.00	0.22	317.48	125.00	-0.33	0.02	2.04
150.00	0.38	328.79	150.00	-0.22	-0.05	0.70
175.00	0.35	337.30	175.00	-0.08	-0.12	0.25
200.00	0.32	341.57	200.00	0.06	-0.18	0.14
225.00	0.28	333.10	225.00	0.18	-0.22	0.25
250.00	0.48	298.82	250.00	0.28	-0.34	1.18
275.00	0.56	300.09	275.00	0.39	-0.54	0.31
300.00	0.62	305.89	299.99	0.53	-0.75	0.34
325.00	0.56	304.50	324.99	0.68	-0.96	0.24
350.00	0.59	296.44	349.99	0.81	-1.18	0.34
375.00	0.84	289.37	374.99	0.93	-1.47	1.05
400.00	0.96	298.04	399.99	1.08	-1.82	0.73
425.00	1.04	301.10	424.98	1.30	-2.20	0.40
450.00	1.15	301.76	449.98	1.55	-2.61	0.42
475.00	1.23	304.91	474.97	1.83	-3.04	0.44
500.00	1.30	304.94	499.97	2.15	-3.49	0.25
525.00	1.34	307.40	524.96	2.49	-3.96	0.28
550.00	1.48	307.45	549.95	2.86	-4.44	0.57
575.00	1.75	310.40	574.94	3.31	-4.99	1.12
600.00	1.93	310.08	599.93	3.82	-5.60	0.75
625.00	2.31	308.48	624.91	4.41	-6.32	1.54
650.00	2.23	309.23	649.89	5.03	-7.10	0.35
675.00	2.17	310.53	674.88	5.65	-7.83	0.32
700.00	2.25	310.14	699.86	6.27	-8.57	0.31
725.00	2.34	310.23	724.84	6.92	-9.33	0.36
750.00	2.40	312.31	749.82	7.60	-10.11	0.43
775.00	2.31	314.72	774.79	8.30	-10.85	0.55
800.00	2.32	316.31	799.77	9.02	-11.56	0.26
825.00	2.23	316.33	824.75	9.74	-12.24	0.36
850.00	2.20	314.35	849.74	10.43	-12.92	0.32
875.00	2.17	312.57	874.72	11.08	-13.61	0.29
900.00	2.11	315.65	899.70	11.73	-14.28	0.53
925.00	2.10	317.95	924.68	12.40	-14.91	0.34
950.00	2.17	320.32	949.67	13.10	-15.52	0.44



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MD ft	Inc deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	DLS 7100ft
975.00	2.17	321.72	974.65	13.84	-16.11	0.21
1000.00	1.98	322.61	999.63	14.55	-16.67	0.78
1025.00	2.05	325.01	1024.62	15.26	-17.19	0.46
1050.00	1.86	326.12	1049.60	15.96	-17.67	0.79
1075.00	1.86	327.94	1074.59	16.65	-18.11	0.24
1100.00	1.87	327.34	1099.58	17.33	-18.55	0.09
1125.00	1.61	332.57	1124.56	17.99	-18.93	1.21
1150.00	1.50	334.93	1149.55	18.60	-19.23	0.54
1175.00	1.31	327.34	1174.55	19.13	-19.52	1.04
1200.00	1.14	337.18	1199.54	19.60	-19.77	1.08
1225.00	0.98	310.19	1224.54	19.97	-20.03	2.08
1250.00	0.84	336.53	1249.53	20.28	-20.27	1.75
1275.00	0.84	341.86	1274.53	20.62	-20.40	0.31
1300.00	0.76	338.42	1299.53	20.95	-20.52	0.38
1325.00	0.74	339.46	1324.53	21.26	-20.64	0.09
1350.00	0.74	345.29	1349.52	21.56	-20.73	0.30
1375.00	0.75	345.24	1374.52	21.88	-20.82	0.04
1400.00	0.77	337.61	1399.52	22.19	-20.92	0.41
1425.00	0.66	334.91	1424.52	22.48	-21.05	0.45
1450.00	0.59	326.31	1449.52	22.71	-21.18	0.48
1475.00	0.60	339.39	1474.52	22.94	-21.30	0.54
1500.00	0.57	345.17	1499.51	23.19	-21.37	0.25
1525.00	0.72	341.99	1524.51	23.46	-21.46	0.61
1550.00	0.74	341.80	1549.51	23.76	-21.55	0.09
1575.00	0.89	338.79	1574.51	24.10	-21.68	0.62
1600.00	0.83	337.07	1599.51	24.44	-21.82	0.27
1625.00	0.91	342.29	1624.50	24.80	-21.95	0.45
1650.00	1.01	337.71	1649.50	25.19	-22.09	0.52
1675.00	0.94	335.20	1674.50	25.58	-22.26	0.36
1700.00	1.08	331.76	1699.49	25.98	-22.46	0.64
1725.00	1.27	335.30	1724.49	26.44	-22.69	0.81
1750.00	1.31	338.52	1749.48	26.96	-22.91	0.33
1775.00	1.18	340.05	1774.47	27.47	-23.10	0.54
1800.00	1.24	333.79	1799.47	27.95	-23.31	0.57
1825.00	1.27	336.74	1824.46	28.45	-23.54	0.28
1850.00	1.24	346.55	1849.46	28.96	-23.71	0.86
1875.00	1.18	355.70	1874.45	29.48	-23.79	0.81
1900.00	1.13	351.90	1899.45	29.98	-23.84	0.37



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1925.00	1.17	348.01	1924.44	30.48	-23.93	0.37
1950.00	1.10	346.99	1949.44	30.96	-24.04	0.32
1975.00	1.06	348.84	1974.43	31.42	-24.14	0.20
2000.00	0.98	343.11	1999.43	31.85	-24.24	0.53
2025.00	0.98	339.36	2024.42	32.26	-24.38	0.26
2050.00	1.04	334.17	2049.42	32.66	-24.56	0.44
2075.00	0.94	333.49	2074.42	33.05	-24.75	0.43
2100.00	0.85	320.88	2099.41	33.38	-24.96	0.86
2125.00	0.91	319.83	2124.41	33.67	-25.20	0.26
2150.00	0.86	316.22	2149.41	33.96	-25.46	0.30
2175.00	0.85	305.43	2174.40	34.20	-25.74	0.64
2200.00	1.06	304.83	2199.40	34.44	-26.08	0.85
2225.00	0.93	311.39	2224.40	34.70	-26.42	0.69
2250.00	0.82	302.24	2249.39	34.93	-26.72	0.71
2275.00	0.93	303.11	2274.39	35.14	-27.04	0.44
2300.00	0.88	314.23	2299.39	35.38	-27.35	0.72
2325.00	0.98	309.53	2324.38	35.65	-27.65	0.50
2350.00	1.18	309.02	2349.38	35.95	-28.02	0.78
2375.00	1.18	315.89	2374.38	36.30	-28.40	0.56
2400.00	1.07	310.78	2399.37	36.63	-28.75	0.59
2425.00	1.14	308.08	2424.37	36.94	-29.12	0.35
2450.00	1.13	309.85	2449.36	37.25	-29.51	0.15
2475.00	1.18	309.02	2474.36	37.57	-29.89	0.23
2500.00	1.15	306.41	2499.35	37.88	-30.30	0.24
2525.00	1.15	307.70	2524.35	38.18	-30.70	0.10
2550.00	1.05	308.65	2549.34	38.48	-31.08	0.41
2575.00	1.14	302.97	2574.34	38.76	-31.46	0.55
2600.00	1.14	317.86	2599.33	39.08	-31.84	1.18
2625.00	1.04	320.17	2624.33	39.44	-32.15	0.46
2650.00	1.08	323.83	2649.32	39.80	-32.43	0.33
2675.00	1.12	327.08	2674.32	40.20	-32.71	0.30
2700.00	1.11	334.71	2699.31	40.62	-32.94	0.60
2725.00	1.24	330.12	2724.31	41.08	-33.18	0.63
2750.00	1.24	334.43	2749.30	41.55	-33.43	0.37
2775.00	1.47	334.91	2774.30	42.09	-33.68	0.91
2800.00	1.47	335.36	2799.29	42.67	-33.95	0.05
2825.00	1.33	337.63	2824.28	43.23	-34.20	0.62
2850.00	1.11	335.85	2849.27	43.72	-34.41	0.87



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2875.00	1.01	342.26	2874.27	44.15	-34.57	0.61
2900.00	0.91	337.03	2899.27	44.54	-34.72	0.55
2925.00	0.72	333.48	2924.26	44.86	-34.87	0.77
2950.00	0.71	329.12	2949.26	45.14	-35.02	0.22
2975.00	0.55	332.08	2974.26	45.38	-35.15	0.63
3000.00	0.61	329.10	2999.26	45.60	-35.28	0.27
3025.00	0.51	307.14	3024.26	45.78	-35.43	0.94
3050.00	0.80	325.70	3049.26	45.99	-35.62	1.39
3075.00	0.67	328.37	3074.25	46.26	-35.80	0.53
3100.00	0.73	316.04	3099.25	46.50	-35.98	0.65
3125.00	0.58	302.79	3124.25	46.68	-36.20	0.86
3150.00	0.57	318.84	3149.25	46.84	-36.39	0.64
3175.00	0.75	318.91	3174.25	47.06	-36.58	0.71
3200.00	0.50	336.27	3199.25	47.28	-36.73	1.24
3225.00	0.53	337.17	3224.25	47.49	-36.82	0.14
3250.00	0.42	320.08	3249.24	47.67	-36.92	0.72
3275.00	0.45	341.78	3274.24	47.83	-37.01	0.67
3300.00	0.48	341.61	3299.24	48.03	-37.08	0.10
3325.00	0.55	320.63	3324.24	48.22	-37.19	0.81
3350.00	0.57	310.52	3349.24	48.39	-37.36	0.40
3375.00	0.47	307.02	3374.24	48.53	-37.53	0.40
3400.00	0.42	320.56	3399.24	48.67	-37.67	0.47
3425.00	0.75	333.86	3424.24	48.88	-37.80	1.44