



Job Number: 06221

State/Country: NM

DIST. 3

Company: Williams Exploration - NM

Declination: ☐

Lease/Well: Rosa Unit # 75B

Grid: ☐

Location: San Juan County

File name: C:\DATA\CUST06\SURVEYS\WILLIAMS\06221.SVY

Rig Name: ☐

Date/Time: 23-Oct-06 / 11:29

RKB: ☐

Curve Name: As Drilled

G.L. or M.S.L.: 6294

30 045 33748

Surface 1815/S 755/W

BHL 1849/N 2055/W

Inwell Inc.

WINSERVE SURVEY CALCULATIONS

Minimum Curvature Method

Vertical Section Plane 39.06

Vertical Section Referenced to Wellhead

Rectangular Coordinates Referenced to Wellhead

Md 6681
Tvd 6040

in P.A.

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	Vertical Section FT	N-S FT	E-W FT	CLOSURE Distance FT	Direction Deg	Dogleg Severity Deg/100
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
357.00	.50	201.60	357.00	-1.49	-1.45	-.57	1.56	201.60	.14
388.00	1.30	33.60	387.99	-1.26	-1.28	-.43	1.35	198.50	5.78
419.00	.70	89.20	418.99	-.79	-.99	-.04	.99	182.59	3.46
449.00	1.60	64.80	448.98	-.30	-.80	.52	.96	147.25	3.35
479.00	2.60	47.50	478.96	.75	-.17	1.40	1.41	96.80	3.91
509.00	3.50	45.30	508.92	2.34	.94	2.55	2.72	69.83	3.02
540.00	5.00	46.50	539.83	4.62	2.53	4.20	4.91	58.93	4.85
571.00	6.10	45.00	570.69	7.59	4.63	6.35	7.86	53.91	3.58
601.00	7.20	43.80	600.49	11.05	7.11	8.78	11.30	50.98	3.70
632.00	8.40	42.50	631.20	15.25	10.18	11.65	15.47	48.85	3.91
662.00	10.10	42.70	660.81	20.06	13.73	14.92	20.27	47.37	5.67
692.00	11.20	42.50	690.29	25.60	17.81	18.67	25.80	46.34	3.67
723.00	12.40	41.80	720.63	31.93	22.51	22.92	32.13	45.51	3.90
753.00	13.70	39.00	749.86	38.70	27.68	27.30	38.88	44.61	4.82
784.00	14.70	40.10	779.91	46.30	33.54	32.15	46.46	43.79	3.34
814.00	16.20	40.20	808.83	54.29	39.65	37.30	54.44	43.25	5.00
845.00	17.80	39.80	838.47	63.35	46.59	43.12	63.49	42.79	5.18
875.00	19.30	39.10	866.91	72.89	53.96	49.19	73.02	42.35	5.05
905.00	20.50	38.50	895.12	83.11	61.92	55.58	83.21	41.91	4.06
936.00	21.40	37.80	924.07	94.19	70.64	62.43	94.27	41.47	3.01
966.00	22.70	38.30	951.88	105.45	79.51	69.37	105.52	41.11	4.38
997.00	23.80	38.80	980.36	117.68	89.07	77.00	117.74	40.84	3.61
1027.00	24.40	39.60	1007.74	129.93	98.57	84.74	129.99	40.69	2.28
1058.00	24.90	39.80	1035.92	142.86	108.51	93.00	142.91	40.60	1.64

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	Vertical Section FT	N-S FT	E-W FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
1089.00	26.30	39.60	1063.87	156.26	118.82	101.56	156.31	40.52	4.52
1119.00	28.00	39.50	1090.57	169.95	129.38	110.27	169.99	40.44	5.67
1149.00	29.30	40.00	1116.89	184.33	140.43	119.47	184.38	40.39	4.41
1180.00	30.40	39.50	1143.78	199.76	152.30	129.34	199.81	40.34	3.64
1215.00	31.10	39.80	1173.86	217.65	166.07	140.76	217.70	40.28	2.05
1245.00	32.30	40.50	1199.38	233.41	178.12	150.92	233.46	40.27	4.18
1277.00	33.70	39.30	1226.22	250.84	191.49	162.10	250.89	40.25	4.83
1307.00	34.30	39.50	1251.09	267.61	204.46	172.75	267.66	40.19	2.03
1338.00	35.30	39.10	1276.55	285.30	218.15	183.95	285.35	40.14	3.31
1370.00	36.60	39.10	1302.45	304.09	232.73	195.80	304.14	40.07	4.06
1401.00	37.60	39.80	1327.18	322.79	247.17	207.68	322.83	40.04	3.50
1433.00	38.70	39.80	1352.34	342.55	262.35	220.33	342.60	40.02	3.44
1464.00	40.20	39.80	1376.28	362.25	277.49	232.94	362.30	40.01	4.84
1496.00	42.00	39.80	1400.39	383.28	293.65	246.41	383.33	40.00	5.62
1528.00	43.60	39.20	1423.87	405.02	310.42	260.23	405.07	39.97	5.16
1559.00	44.20	39.00	1446.21	426.52	327.10	273.79	426.57	39.93	1.99
1591.00	43.50	39.00	1469.28	448.69	344.33	287.74	448.73	39.88	2.19
1622.00	43.20	38.80	1491.83	469.97	360.89	301.11	470.01	39.84	1.06
1654.00	43.00	39.10	1515.19	491.83	377.90	314.85	491.87	39.80	.89
1685.00	43.20	39.80	1537.83	513.01	394.25	328.31	513.05	39.79	1.67
1717.00	43.60	40.00	1561.08	535.00	411.12	342.41	535.04	39.79	1.32
1748.00	44.30	40.20	1583.39	556.51	427.58	356.27	556.55	39.80	2.30
1780.00	45.10	40.50	1606.14	579.01	444.73	370.84	579.06	39.82	2.59
1811.00	45.40	40.00	1627.96	601.02	461.53	385.07	601.08	39.84	1.50
1843.00	45.60	39.60	1650.39	623.84	479.07	399.68	623.90	39.84	1.09
1874.00	45.80	39.10	1672.04	646.03	496.23	413.75	646.09	39.82	1.32
1906.00	45.20	39.00	1694.47	668.85	513.95	428.12	668.91	39.79	1.89
1938.00	44.90	39.00	1717.08	691.50	531.55	442.38	691.55	39.77	.94
1969.00	45.60	38.80	1738.91	713.51	548.69	456.20	713.57	39.74	2.30
2000.00	45.70	38.00	1760.58	735.68	566.06	469.97	735.73	39.70	1.87
2032.00	44.70	38.80	1783.12	758.38	583.85	484.07	758.43	39.66	3.59
2063.00	44.60	38.80	1805.18	780.17	600.83	497.72	780.21	39.64	.32
2095.00	43.80	38.80	1828.12	802.48	618.22	511.70	802.52	39.61	2.50
2126.00	43.80	38.60	1850.49	823.94	634.96	525.12	823.97	39.59	.45
2158.00	43.90	38.60	1873.57	846.10	652.29	538.95	846.14	39.57	.31
2189.00	43.40	38.30	1896.00	867.50	669.05	552.26	867.53	39.54	1.75
2221.00	43.60	37.80	1919.21	889.52	686.39	565.83	889.55	39.50	1.24
2252.00	44.20	37.80	1941.55	911.01	703.38	579.01	911.04	39.46	1.94
2284.00	43.70	38.20	1964.59	933.22	720.88	592.68	933.24	39.43	1.79
2315.00	43.10	39.10	1987.11	954.52	737.51	605.98	954.53	39.41	2.78
2347.00	43.00	40.10	2010.50	976.36	754.34	619.90	976.38	39.41	2.16
2378.00	43.40	40.20	2033.09	997.58	770.56	633.59	997.60	39.43	1.31
2410.00	43.60	40.00	2056.31	1019.60	787.41	647.78	1019.62	39.44	.76
2441.00	43.70	39.50	2078.74	1041.00	803.86	661.46	1041.02	39.45	1.16
2473.00	43.70	39.00	2101.87	1063.10	820.98	675.45	1063.13	39.45	1.08

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	Vertical Section FT	N-S FT	E-W FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
2504.00	43.60	39.00	2124.30	1084.50	837.61	688.91	1084.53	39.44	.32
2535.00	43.50	39.00	2146.77	1105.86	854.21	702.35	1105.88	39.43	.32
2567.00	43.70	39.00	2169.94	1127.93	871.36	716.24	1127.95	39.42	.62
2598.00	43.60	39.50	2192.38	1149.33	887.93	729.78	1149.35	39.42	1.16
2630.00	43.80	39.50	2215.51	1171.43	904.99	743.84	1171.46	39.42	.62
2661.00	43.40	39.60	2237.96	1192.81	921.48	757.46	1192.84	39.42	1.31
2693.00	42.60	40.50	2261.36	1214.63	938.18	771.50	1214.66	39.43	3.15
2724.00	42.70	40.00	2284.16	1235.63	954.21	785.07	1235.66	39.45	1.14
2756.00	42.30	41.00	2307.76	1257.24	970.65	799.11	1257.27	39.46	2.45
2788.00	42.40	40.80	2331.41	1278.79	986.95	813.22	1278.82	39.49	.52
2819.00	43.20	40.60	2354.15	1299.84	1002.91	826.96	1299.88	39.51	2.62
2882.00	43.80	40.60	2399.85	1343.19	1035.84	855.18	1343.24	39.54	.95
2914.00	43.60	41.30	2422.98	1365.29	1052.54	869.67	1365.34	39.57	1.64
2945.00	43.10	41.00	2445.53	1386.55	1068.56	883.67	1386.61	39.59	1.74
2977.00	43.10	39.80	2468.89	1408.41	1085.21	897.84	1408.47	39.60	2.56
3008.00	42.20	40.10	2491.69	1429.41	1101.31	911.33	1429.48	39.61	2.98
3040.00	41.40	40.20	2515.55	1450.74	1117.62	925.08	1450.80	39.62	2.51
3072.00	40.50	39.80	2539.72	1471.71	1133.68	938.56	1471.78	39.62	2.93
3103.00	39.30	38.50	2563.50	1491.59	1149.10	951.12	1491.66	39.61	4.71
3135.00	37.40	38.00	2588.59	1511.44	1164.69	963.41	1511.51	39.60	6.02
3166.00	36.00	36.80	2613.45	1529.96	1179.40	974.66	1530.02	39.57	5.07
3198.00	35.70	36.20	2639.39	1548.68	1194.47	985.81	1548.73	39.53	1.44
3229.00	35.20	36.00	2664.64	1566.64	1209.00	996.40	1566.68	39.49	1.66
3261.00	34.40	35.80	2690.92	1584.87	1223.79	1007.11	1584.91	39.45	2.53
3293.00	33.10	36.80	2717.52	1602.63	1238.12	1017.64	1602.66	39.42	4.42
3324.00	31.30	37.20	2743.75	1619.14	1251.31	1027.58	1619.16	39.39	5.85
3356.00	29.50	37.10	2771.35	1635.32	1264.22	1037.35	1635.34	39.37	5.63
3387.00	28.00	36.30	2798.53	1650.22	1276.17	1046.27	1650.24	39.35	5.00
3418.00	27.00	35.60	2826.03	1664.51	1287.76	1054.67	1664.53	39.32	3.39
3450.00	26.10	35.20	2854.65	1678.78	1299.42	1062.96	1678.80	39.28	2.87
3482.00	25.40	35.50	2883.48	1692.66	1310.75	1071.00	1692.67	39.25	2.23
3513.00	24.90	34.80	2911.54	1705.80	1321.53	1078.59	1705.81	39.22	1.88
3544.00	24.60	35.80	2939.69	1718.75	1332.12	1086.08	1718.76	39.19	1.66
3575.00	24.00	37.30	2967.94	1731.49	1342.37	1093.68	1731.50	39.17	2.78
3607.00	23.70	38.50	2997.21	1744.43	1352.58	1101.63	1744.43	39.16	1.78
3639.00	22.60	38.50	3026.63	1757.01	1362.42	1109.46	1757.01	39.16	3.44
3670.00	21.90	38.80	3055.32	1768.75	1371.59	1116.79	1768.75	39.15	2.29
3702.00	21.50	38.80	3085.06	1780.58	1380.81	1124.20	1780.58	39.15	1.25
3733.00	21.50	38.10	3113.90	1791.94	1389.71	1131.27	1791.94	39.15	.83
3765.00	20.70	39.00	3143.75	1803.46	1398.72	1138.45	1803.46	39.14	2.70
3796.00	20.10	38.50	3172.81	1814.26	1407.15	1145.21	1814.27	39.14	2.02
3828.00	18.50	38.20	3203.01	1824.84	1415.44	1151.77	1824.84	39.14	5.01
3859.00	17.50	38.30	3232.49	1834.42	1422.96	1157.70	1834.42	39.13	3.23
3891.00	16.10	38.00	3263.13	1843.67	1430.23	1163.42	1843.67	39.13	4.38
3923.00	14.60	38.00	3293.98	1852.13	1436.91	1168.63	1852.14	39.12	4.69

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	Vertical Section FT	N-S FT	E-W FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
3954.00	13.60	38.30	3324.05	1859.69	1442.85	1173.30	1859.69	39.12	3.23
3985.00	12.90	35.80	3354.22	1866.79	1448.52	1177.58	1866.79	39.11	2.92
4017.00	11.50	36.10	3385.50	1873.54	1453.99	1181.55	1873.54	39.10	4.38
4049.00	11.00	35.50	3416.89	1879.77	1459.05	1185.20	1879.77	39.09	1.60
4080.00	9.80	37.20	3447.38	1885.36	1463.56	1188.51	1885.36	39.08	4.00
4111.00	8.50	36.10	3477.98	1890.28	1467.52	1191.46	1890.28	39.07	4.23
4143.00	7.80	36.10	3509.66	1894.81	1471.18	1194.13	1894.81	39.07	2.19
4180.00	7.50	36.10	3546.33	1899.73	1475.16	1197.03	1899.73	39.06	.81
4230.00	7.09	36.10	3595.92	1906.07	1480.29	1200.77	1906.07	39.05	.82
5189.00	4.00	36.10	4550.32	1998.60	1555.15	1255.37	1998.61	38.91	.32
6291.00	2.25	36.00	5650.64	2058.60	1603.71	1290.73	2058.61	38.83	.16
Projected to TD									
6681.00	2.25	36.00	6040.34	2073.88	1616.10	1299.73	2073.90	38.81	.00

Company: Williams Exploration - NM
 Lease/Well: Rosa Unit # 75B
 Location: San Juan County
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