

sperry-sun
DRILLING SERVICES

Customer : Williams Production Company

Well : Rosa #181

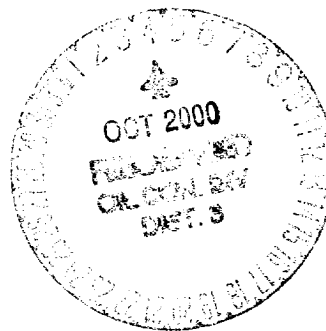
Rig : Bear Cat #2

Field : Mesa Verde

Legal : K Sec. 11-T31N-R06W

County : Rio Arriba

State : New Mexico



039-26463

Calculation Method :

Minimum Curvature

Magnetic Declination Applied :

11.30° East

Vertical Section Direction :

294.001° Azimuth

Bottom Hole locn
1763/N 760/E Sec 10, T31N, R6W

Note : See attached SSDS Certified Survey Worksheet for all survey information as recorded in the field.

I, Craig Davis, having personal knowledge of all the facts, hereby certify that the above listed Directional Survey is true and correct as determined from all available Sperry-Sun Drilling Services records.

Craig Davis / James R. Davidson P.E.

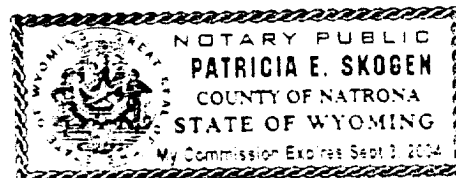
Directional Drilling Coordinator

On this 2nd day of OCTOBER, 2000, before me personally appeared JAMES R. DAVIDSON to me known as the person described in and who executed the same as his/her free act and deed.

Patricia E. Skogen
Notary Public in and for the County of
Natrona, State of Wyoming

Sept. 3, 2004
My Commission Expires

A Halliburton Company



sperry-sun
DRILLING SERVICES

**New Mexico Oil Conservation
Oil & Gas Division
1000 Rio Brazos Road
Aztec, New Mexico
87410**

For the attention of : Frank Chavez

Dear Sir,

Please find enclosed two (2) copies of our certified survey results on the well described below.

Customer : Williams Production Company

Well : Rosa #181

Rig : Bear Cat #2

Field : Mesa Verde

Legal : Sec. 11-T31N-R06W

County : Rio Arriba

State : New Mexico

Please feel free to call upon me at any time should you have any questions regarding the enclosed information.

Sincerely,

Craig Davis / James R. Davidson P.E.

**Craig Davis
Directional Drilling Coordinator
7197 W. Derrick Drive
Casper, Wyoming 82604
(307) 472-5757**

For the attention of :

Dear Sir,

Please find enclosed one (1) copy of our certified survey results on the well described below.

Customer : Williams Production Company

Well : Rosa #181

Rig : Bear Cat #2

Field : Mesa Verde

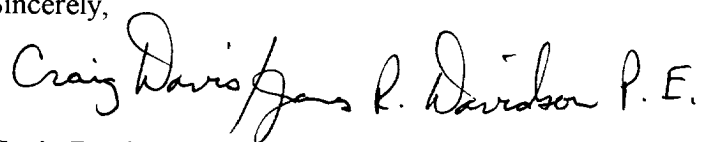
Legal : Sec. 11-T31N-R06W

County : Rio Arriba

State : New Mexico

Please feel free to call upon me at any time should you have any questions regarding the enclosed information.

Sincerely,

A handwritten signature in cursive script that reads "Craig Davis" followed by "P. E." in a more formal, slightly spaced-out font.

Craig Davis
Directional Drilling Coordinator

Section 1

Contents: Survey Data

Sperry-Sun Drilling Services

Survey Report for Rosa #181 - MWD Survey

Your Ref: Richard Oaks

Williams Production Company
Mesa Verde Field

Rio Arriba Co., NM
Sec. 11-T31N-R06W

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	
553.00	2.200	63.200	552.86	4.79 N	9.48 E	-6.71	0.40
583.00	2.100	88.900	582.84	5.06 N	10.54 E	-7.57	3.20
613.00	1.800	55.300	612.83	5.34 N	11.48 E	-8.31	3.88
643.00	1.700	34.600	642.81	5.97 N	12.12 E	-8.64	2.12
673.00	0.600	306.400	672.81	6.43 N	12.24 E	-8.57	5.95
704.00	2.600	304.300	703.79	6.92 N	11.53 E	-7.72	6.45
733.00	3.300	285.600	732.76	7.52 N	10.18 E	-6.25	4.07
764.00	5.800	300.800	763.66	8.56 N	7.98 E	-3.81	8.89
794.00	7.100	293.700	793.47	10.08 N	4.98 E	-0.45	5.08
825.00	8.600	290.000	824.18	11.64 N	1.05 E	3.78	5.10
855.00	9.600	275.400	853.80	12.65 N	3.55 W	8.39	8.36
886.00	10.500	275.100	884.33	13.14 N	8.94 W	13.51	2.91
948.00	14.400	278.600	944.86	14.80 N	22.20 W	26.29	6.40
978.00	15.100	281.400	973.87	16.13 N	29.71 W	33.70	3.33
1010.00	16.100	282.500	1004.69	17.91 N	38.13 W	42.12	3.26
1041.00	18.000	283.700	1034.33	19.98 N	46.98 W	51.05	6.23
1071.00	18.400	285.100	1062.83	22.31 N	56.06 W	60.28	1.98
1101.00	20.100	286.900	1091.15	25.04 N	65.56 W	70.08	6.00
1132.00	21.300	290.600	1120.15	28.57 N	75.93 W	80.99	5.72
1163.00	22.100	292.000	1148.95	32.73 N	86.61 W	92.43	3.07
1194.00	22.800	291.200	1177.60	37.09 N	97.61 W	104.26	2.46
1225.00	24.200	292.000	1206.03	41.64 N	109.11 W	116.61	4.63
1257.00	25.200	292.800	1235.10	46.74 N	121.47 W	129.98	3.29
1297.00	25.300	294.200	1271.28	53.54 N	137.11 W	147.04	1.51
1328.00	26.400	296.000	1299.18	59.28 N	149.35 W	160.55	4.36
1359.00	26.600	293.900	1326.92	65.11 N	161.89 W	174.38	3.09
1391.00	27.600	294.100	1355.41	71.04 N	175.21 W	188.96	3.14
1422.00	28.100	294.100	1382.82	76.96 N	188.43 W	203.44	1.61
1452.00	29.000	294.800	1409.17	82.89 N	201.48 W	217.78	3.20
1481.00	29.900	294.200	1434.42	88.80 N	214.45 W	232.03	3.27
1511.00	30.700	294.400	1460.32	95.03 N	228.25 W	247.17	2.69
1542.00	31.600	294.400	1486.85	101.66 N	242.85 W	263.20	2.90
1573.00	32.200	294.200	1513.17	108.40 N	257.78 W	279.58	1.97
1605.00	33.900	295.100	1539.99	115.68 N	273.64 W	297.03	5.53
1636.00	34.800	295.200	1565.59	123.11 N	289.47 W	314.52	2.91
1666.00	35.900	295.100	1590.05	130.49 N	305.19 W	331.88	3.67
1696.00	36.500	294.600	1614.26	137.94 N	321.26 W	349.59	2.23
1727.00	37.400	294.200	1639.04	145.63 N	338.23 W	368.23	3.01
1757.00	38.500	294.100	1662.69	153.18 N	355.07 W	386.67	3.67

Continued...

Sperry-Sun Drilling Services

Survey Report for Rosa #181 - MWD Survey
Your Ref: Richard Oaks

Williams Production Company
Mesa Verde Field

Rio Arriba Co., NM
Sec. 11-T31N-R06W

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
1787.00	39.600	293.700	1685.99	160.84 N	372.35 W	405.57	3.76
1818.00	40.200	294.100	1709.77	168.89 N	390.53 W	425.46	2.11
1850.00	41.500	294.800	1733.98	177.56 N	409.58 W	446.39	4.31
1881.00	42.400	294.600	1757.03	186.22 N	428.41 W	467.11	2.94
1912.00	43.300	295.600	1779.76	195.16 N	447.50 W	488.19	3.64
1964.00	44.500	295.600	1817.23	210.74 N	480.01 W	524.23	2.31
2024.00	45.900	295.800	1859.51	229.20 N	518.37 W	566.78	2.35
2087.00	47.700	296.000	1902.63	249.26 N	559.68 W	612.68	2.87
2149.00	48.200	295.100	1944.16	269.12 N	601.22 W	658.70	1.35
2210.00	48.300	294.800	1984.78	288.32 N	642.48 W	704.21	0.40
2274.00	49.000	294.900	2027.06	308.51 N	686.08 W	752.24	1.10
2336.00	48.200	294.900	2068.06	328.09 N	728.26 W	798.74	1.29
2399.00	46.400	294.400	2110.78	347.40 N	770.34 W	845.04	2.92
2461.00	46.600	294.200	2153.46	365.91 N	811.33 W	890.01	0.40
2553.00	46.900	293.500	2216.50	393.00 N	872.61 W	957.02	0.64
2616.00	46.700	293.400	2259.62	411.28 N	914.75 W	1002.94	0.34
2710.00	47.400	293.700	2323.67	438.77 N	977.82 W	1071.74	0.78
2804.00	46.200	294.100	2388.02	466.53 N	1040.47 W	1140.27	1.31
2899.00	47.400	293.700	2453.05	494.58 N	1103.78 W	1209.52	1.30
2991.00	46.300	295.600	2515.97	522.56 N	1164.78 W	1276.62	1.92
3084.00	45.700	294.800	2580.57	551.05 N	1225.31 W	1343.51	0.89
3178.00	47.500	295.300	2645.16	579.97 N	1287.18 W	1411.79	1.95
3271.00	46.100	295.500	2708.82	609.04 N	1348.42 W	1479.56	1.51
3364.00	46.900	294.400	2772.84	637.50 N	1409.58 W	1547.01	1.21
3455.00	47.500	293.700	2834.66	664.70 N	1470.55 W	1613.78	0.87
3550.00	46.100	294.100	2899.70	692.76 N	1533.87 W	1683.03	1.51
3613.00	46.500	294.400	2943.22	711.47 N	1575.40 W	1728.57	0.72
3644.00	46.300	294.600	2964.60	720.77 N	1595.82 W	1751.02	0.80
3704.00	46.000	293.800	3006.17	738.51 N	1635.29 W	1794.29	1.08
3767.00	43.300	293.000	3050.98	756.10 N	1675.92 W	1838.56	4.38
3828.00	42.100	294.600	3095.81	772.79 N	1713.76 W	1879.92	2.65
3921.00	37.400	293.500	3167.29	797.04 N	1768.04 W	1939.37	5.11
4013.00	33.000	292.700	3242.45	817.86 N	1816.80 W	1992.38	4.81
4134.00	29.200	294.600	3346.05	842.87 N	1874.06 W	2054.86	3.24
4228.00	26.900	292.100	3429.00	860.42 N	1914.62 W	2099.05	2.75
4321.00	25.800	294.600	3512.34	876.76 N	1952.51 W	2140.32	1.68
4416.00	22.800	296.200	3598.91	893.50 N	1987.83 W	2179.39	3.23
4509.00	18.800	295.100	3685.84	907.82 N	2017.58 W	2212.40	4.32
4600.00	14.800	296.700	3772.93	919.26 N	2041.25 W	2238.68	4.42
4692.00	12.600	297.800	3862.31	929.22 N	2060.63 W	2260.43	2.41

Continued...

Sperry-Sun Drilling Services

Survey Report for Rosa #181 - MWD Survey
Your Ref: Richard Oaks

Williams Production Company
Mesa Verde Field

Rio Arriba Co., NM
Sec. 11-T31N-R06W

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
4764.00	11.200	300.000	3932.76	936.38 N	2073.63 W	2275.22	2.04
4812.00	11.200	302.000	3979.85	941.18 N	2081.62 W	2284.47	0.81
4892.00	10.750	311.000	4058.39	950.20 N	2093.85 W	2299.30	2.21
5209.00	9.750	304.000	4370.34	984.61 N	2138.41 W	2354.01	0.50
5528.00	5.000	341.000	4686.77	1012.88 N	2165.36 W	2390.13	2.03
6164.00	2.000	351.000	5321.51	1050.06 N	2176.12 W	2415.09	0.48
6834.00	1.500	16.000	5991.21	1070.04 N	2175.54 W	2422.68	0.13
6896.00	1.500	16.000	6053.19	1071.60 N	2175.09 W	2422.90	0.00

All data is in feet unless otherwise stated. Directions and coordinates are relative to True North. Vertical depths are relative to Well Head. Northings and Eastings are relative to Well Head.

The Dogleg Severity is in Degrees per 100 feet.

Vertical Section is from Well Head and calculated along an Azimuth of 294.001° (True).

Based upon Minimum Curvature type calculations, at a Measured Depth of 6896.00ft., The Bottom Hole Displacement is 2424.73ft., in the Direction of 296.228° (True).

Comments

Measured Depth (ft)	Station Coordinates			Comment
	TVD (ft)	Northings (ft)	Eastings (ft)	
4812.00	3979.85	941.18 N	2081.62 W	Extrapolated Survey To The Bit.
6896.00	6053.19	1071.60 N	2175.09 W	Extrapolated Survey To The Bit.