

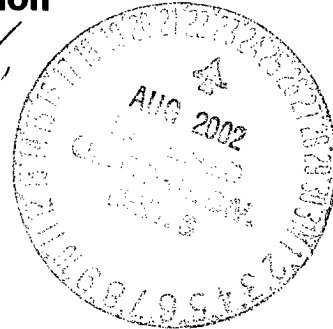


**Scientific
Drilling**

Directional Survey Certification

30-039-26949

Srl 1710/S 1680/W
BHL 1040/S 1237/W



RE: Williams Production Co. Operator
K-8-31N-5W Rosa Unit #379 Well Name & No.
Rio Arriba County, NM Location
41DEF0802183 SDI Job No.

I, David Bible, having personal knowledge of all the facts, hereby
certify that the attached directional survey run from a measured depth of 485 feet to a
measured depth of 5300 feet is true and correct as determined from all available records.

David Bible

Signature

Dir-Coordinator

Title

SDI

Company

State of : Wyoming }

ss

County of : Natrona }

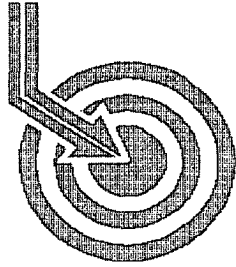
On this 22 day of August, 2002, before me personally appeared
David Bible to me known as the person described in and who executed the foregoing
instrument and acknowledged that (s)he executed the same as his/her free act and deed.

Seal

Judi Moore
Notary Public

June 26, 2003
My Commission Expires





**Scientific
Drilling**

DIRECTIONAL SURVEY REPORT

Prepared For

**WILLIAMS PRODUCTION CO.
Rosa Unit #379
Rio Arriba County, NM**

***Prepared By:
Judi Moore - Well Planner
Scientific Drilling International
Rocky Mountain District***

Scientific Drilling International
7237 W. Barton Rd., Casper, WY 82604
P.O. Box 1600, Mills, WY 82644
(307) 472-6621
judimoore_sdi@msn.com



Scientific Drilling Survey Completion Report

Company: Williams Production Co.	Date: 8/21/2002	Time: 09:46:19	Page: 1
Field: Rio Arriba County, NM	Co-ordinate(NE) Reference: Well: #379, True North		
Site: Rosa Unit #379	Vertical (TVD) Reference: SITE 14.0		
Well: #379	Section (VS) Reference: Well (0.00N,0.00E,105.00Azi)		
Wellpath: OH	Survey Calculation Method: Minimum Curvature	Db: Sybase	

Survey: Survey #1	Start Date: 8/13/2002
Company: Scientific Drilling	Engineer: D.Bayer
Tool: MWD,	Tied-to: From Surface

Field: Rio Arriba County, NM

Map System: US State Plane Coordinate System 1927	Map Zone: New Mexico, Central Zone
Geo Datum: NAD27 (Clarke 1866)	Coordinate System: Well Centre
Sys Datum: Mean Sea Level	Geomagnetic Model: igrf2000

Site: Rosa Unit #379

Rio Arriba County, NM

Site Position:	Northing:	ft	Latitude:
From: Lease Line	Easting:	ft	Longitude:
Position Uncertainty: 0.00 ft			North Reference: True
Ground Level: 6261.00 ft			Grid Convergence: -0.68 deg

Well: #379

Slot Name:

Well Position:	+N/-S	0.00 ft	Northing:	2152992.75 ft	Latitude:	36 54 41.323 N
	+E/-W	0.00 ft	Easting :	167189.24 ft	Longitude:	107 23 18.179 W
Position Uncertainty:		0.00 ft				

Wellpath: OH

Current Datum: SITE	Height	14.00 ft	Drilled From: Surface
Magnetic Data: 8/1/2002			Tie-on Depth: 0.00 ft
Field Strength: 48251 nT			Above System Datum: Mean Sea Level
Vertical Section: Depth From (TVD)	+N/-S		Declination: 10.24 deg
ft	ft		Mag Dip Angle: 58.36 deg
			+E/-W
			ft
			Direction
			deg
0.00	0.00	0.00	105.00

Survey

Meas Depth ft	Inclination deg	Azimuth deg	TVD ft	Vert Sect ft	N/S ft	E/W ft	DLS deg/100ft	CLen ft	CLSD ft	CLSA deg
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
485.00	0.40	250.00	485.00	-1.39	-0.58	-1.59	0.08	485.00	1.69	250.00
984.00	1.10	229.00	983.95	-5.49	-4.32	-6.84	0.15	499.00	8.09	237.75
1467.00	0.90	237.00	1466.88	-10.62	-9.42	-13.52	0.05	483.00	16.48	235.13
1939.00	1.60	93.00	1938.82	-6.66	-11.79	-10.05	0.51	472.00	15.49	220.45
2410.00	0.90	276.00	2409.78	-3.88	-11.75	-7.16	0.53	471.00	13.76	211.37
2491.00	1.40	300.10	2490.76	-5.46	-11.18	-8.65	0.85	81.00	14.14	217.72
2525.00	0.90	302.70	2524.76	-6.12	-10.83	-9.24	1.48	34.00	14.23	220.45
2557.00	1.50	79.90	2556.75	-5.98	-10.62	-9.03	7.02	32.00	13.94	220.38
2589.00	5.10	84.40	2588.69	-4.27	-10.41	-7.21	11.27	32.00	12.66	214.69
2620.00	9.40	82.50	2619.44	-0.64	-9.94	-3.32	13.89	31.00	10.48	198.48
2651.00	14.20	83.00	2649.77	5.23	-9.15	2.96	15.49	31.00	9.62	162.05
2683.00	19.10	84.00	2680.42	13.76	-8.12	12.07	15.34	32.00	14.55	123.94
2715.00	23.10	85.00	2710.27	24.55	-7.03	23.54	12.55	32.00	24.56	106.63
2747.00	24.30	85.70	2739.57	36.67	-5.99	36.36	3.85	32.00	36.85	99.35
2778.00	27.30	88.20	2767.48	49.50	-5.29	49.83	10.29	31.00	50.11	96.06
2810.00	30.00	90.30	2795.56	64.26	-5.10	65.16	9.00	32.00	65.36	94.47
2841.00	32.50	93.00	2822.06	79.91	-5.57	81.23	9.24	31.00	81.43	93.93
2872.00	35.00	95.70	2847.84	96.83	-6.89	98.40	9.40	31.00	98.64	94.01
2904.00	38.40	98.50	2873.49	115.77	-9.27	117.37	11.84	32.00	117.74	94.52
2936.00	42.10	101.60	2897.91	136.36	-12.90	137.72	13.15	32.00	138.32	95.35
2967.00	45.90	104.00	2920.21	157.87	-17.69	158.70	13.38	31.00	159.69	96.36
2999.00	47.80	105.20	2942.10	181.22	-23.57	181.29	6.54	32.00	182.82	97.41
3030.00	50.30	105.60	2962.41	204.63	-29.79	203.86	8.12	31.00	206.03	98.31



Scientific Drilling Survey Completion Report

Company: Williams Production Co.
Field: Rio Arriba County, NM
Site: Rosa Unit #379
Well: #379
Wellpath: OH

Date: 8/21/2002 Time: 09:46:19 Page: 2
Co-ordinate(NE) Reference: Well: #379, True North
Vertical (TVD) Reference: SITE 14.0
Section (VS) Reference: Well (0.00N,0.00E,105.00Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

Meas Depth ft	Inclination deg	Azimuth deg	TVD ft	Vert Sect ft	N/S ft	E/W ft	DLS deg/100ft	CLen ft	CLSD ft	CLSA deg
3062.00	53.50	106.30	2982.15	229.80	-36.72	228.07	10.15	32.00	231.01	99.15
3093.00	57.90	106.50	2999.62	255.40	-43.95	252.63	14.20	31.00	256.43	99.87
3125.00	62.60	105.70	3015.49	283.17	-51.64	279.32	14.85	32.00	284.05	100.48
3156.00	65.60	104.80	3029.03	311.05	-58.97	306.22	10.02	31.00	311.85	100.90
3188.00	68.80	104.90	3041.43	340.55	-66.53	334.73	10.00	32.00	341.28	101.24
3219.00	71.40	105.30	3051.98	369.69	-74.13	362.87	8.47	31.00	370.37	101.55
3250.00	73.50	105.80	3061.33	399.25	-82.05	391.34	6.95	31.00	399.85	101.84
3282.00	76.30	106.40	3069.67	430.13	-90.62	421.02	8.94	32.00	430.67	102.15
3313.00	80.10	107.00	3076.00	460.46	-99.34	450.08	12.40	31.00	460.92	102.45
3320.00	81.20	106.50	3077.14	467.36	-101.33	456.70	17.22	7.00	467.80	102.51
3388.00	85.10	107.70	3085.25	534.82	-121.18	521.21	6.00	68.00	535.11	103.09
3406.00	84.60	105.60	3086.87	552.74	-126.32	538.39	11.95	18.00	553.01	103.20
3436.00	85.90	104.40	3089.35	582.63	-134.05	567.27	5.89	30.00	582.89	103.30
3467.00	89.20	105.60	3090.68	613.60	-142.07	597.18	11.33	31.00	613.84	103.38
3498.00	90.40	105.60	3090.78	644.60	-150.41	627.03	3.87	31.00	644.82	103.49
3529.00	92.50	106.80	3090.00	675.58	-159.05	656.79	7.80	31.00	675.78	103.61
3560.00	91.80	105.70	3088.84	706.55	-167.72	686.53	4.20	31.00	706.72	103.73
3592.00	90.30	104.70	3088.25	738.54	-176.11	717.41	5.63	32.00	738.70	103.79
3624.00	90.20	104.20	3088.11	770.54	-184.09	748.39	1.59	32.00	770.70	103.82
3655.00	90.40	103.70	3087.95	801.53	-191.57	778.48	1.74	31.00	801.70	103.82
3686.00	87.70	102.60	3088.46	832.51	-198.62	808.66	9.40	31.00	832.69	103.80
3718.00	88.50	106.10	3089.52	864.48	-206.54	839.64	11.21	32.00	864.67	103.82
3747.00	90.00	108.80	3089.90	893.45	-215.24	867.30	10.65	29.00	893.61	103.94
3778.00	90.40	110.40	3089.79	924.35	-225.64	896.50	5.32	31.00	924.46	104.13
3810.00	90.40	111.10	3089.57	956.19	-236.97	926.42	2.19	32.00	956.25	104.35
3841.00	92.80	110.90	3088.71	987.00	-248.08	955.35	7.77	31.00	987.03	104.56
3872.00	90.40	109.80	3087.84	1017.85	-258.85	984.40	8.52	31.00	1017.87	104.73
3903.00	89.30	110.30	3087.92	1048.73	-269.48	1013.52	3.90	31.00	1048.74	104.89
3934.00	88.90	109.40	3088.41	1079.62	-280.00	1042.68	3.18	31.00	1079.62	105.03
3965.00	86.70	108.80	3089.60	1110.51	-290.14	1071.95	7.36	31.00	1110.52	105.15
3997.00	88.80	109.60	3090.85	1142.40	-300.65	1102.14	7.02	32.00	1142.41	105.26
4029.00	90.50	109.90	3091.05	1174.29	-311.47	1132.26	5.39	32.00	1174.32	105.38
4060.00	89.80	108.20	3090.97	1205.21	-321.59	1161.56	5.93	31.00	1205.25	105.48
4090.00	90.60	107.70	3090.86	1235.17	-330.83	1190.10	3.14	30.00	1235.22	105.54
4122.00	86.40	106.60	3091.70	1267.13	-340.26	1220.66	13.57	32.00	1267.19	105.58
4154.00	84.70	106.30	3094.18	1299.02	-349.30	1251.25	5.39	32.00	1299.09	105.60
4186.00	87.00	105.70	3096.50	1330.93	-358.09	1281.93	7.43	32.00	1331.01	105.61
4218.00	86.30	105.60	3098.37	1362.87	-366.71	1312.69	2.21	32.00	1362.95	105.61
4250.00	88.50	104.60	3099.82	1394.84	-375.04	1343.55	7.55	32.00	1394.91	105.60
4282.00	89.90	104.10	3100.27	1426.83	-382.97	1374.55	4.65	32.00	1426.90	105.57
4313.00	91.30	103.50	3099.94	1457.82	-390.36	1404.65	4.91	31.00	1457.89	105.53
4345.00	92.20	102.80	3098.97	1489.79	-397.64	1435.80	3.56	32.00	1489.84	105.48
4377.00	92.20	102.10	3097.74	1521.74	-404.53	1467.02	2.19	32.00	1521.78	105.42
4408.00	91.90	101.90	3096.63	1552.67	-410.97	1497.33	1.16	31.00	1552.70	105.35
4441.00	91.10	103.10	3095.77	1585.63	-418.11	1529.53	4.37	33.00	1585.65	105.29
4473.00	91.60	103.10	3095.01	1617.60	-425.36	1560.69	1.56	32.00	1617.62	105.25
4504.00	91.10	102.70	3094.28	1648.57	-432.28	1590.90	2.07	31.00	1648.58	105.20
4536.00	87.70	104.10	3094.62	1680.55	-439.70	1622.02	11.49	32.00	1680.56	105.17
4568.00	87.80	104.00	3095.87	1712.52	-447.46	1653.04	0.44	32.00	1712.53	105.15
4599.00	87.80	103.10	3097.06	1743.49	-454.72	1683.15	2.90	31.00	1743.50	105.12
4631.00	88.10	103.40	3098.21	1775.46	-462.05	1714.28	1.33	32.00	1775.46	105.08
4663.00	90.20	104.00	3098.68	1807.44	-469.62	1745.37	6.83	32.00	1807.44	105.06



Scientific
Drilling

Scientific Drilling Survey Completion Report

Company: Williams Production Co.
Field: Rio Arriba County, NM
Site: Rosa Unit #379
Well: #379
Wellpath: OH

Date: 8/21/2002 Time: 09:46:19 Page: 3
Co-ordinate(NE) Reference: Well: #379, True North
Vertical (TVD) Reference: SITE 14.0
Section (VS) Reference: Well (0.00N,0.00E,105.00Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

Meas Depth ft	Inclination deg	Azimuth deg	TVD ft	Vert Sect ft	N/S ft	E/W ft	DLS deg/100ft	CLen ft	ClsD ft	ClsA deg
4694.00	90.50	105.20	3098.49	1838.44	-477.44	1775.36	3.99	31.00	1838.44	105.05
4725.00	92.50	105.60	3097.68	1869.43	-485.67	1805.24	6.58	31.00	1869.43	105.06
4756.00	91.70	104.40	3096.54	1900.41	-493.68	1835.16	4.65	31.00	1900.41	105.06
4788.00	88.10	104.10	3096.60	1932.40	-501.56	1866.17	11.29	32.00	1932.40	105.04
4820.00	87.40	104.40	3097.86	1964.37	-509.43	1897.16	2.38	32.00	1964.37	105.03
4851.00	89.40	105.50	3098.72	1995.36	-517.42	1927.10	7.36	31.00	1995.36	105.03
4883.00	92.40	104.40	3098.22	2027.35	-525.68	1958.01	9.99	32.00	2027.35	105.03
4915.00	94.70	104.80	3096.24	2059.28	-533.73	1988.92	7.29	32.00	2059.28	105.02
4946.00	92.50	105.10	3094.29	2090.22	-541.71	2018.80	7.16	31.00	2090.22	105.02
4978.00	92.60	104.70	3092.87	2122.19	-549.93	2049.70	1.29	32.00	2122.19	105.02
5010.00	92.30	104.40	3091.50	2154.16	-557.96	2080.64	1.33	32.00	2154.16	105.01
5042.00	93.00	104.10	3090.02	2186.12	-565.83	2111.63	2.38	32.00	2186.12	105.00
5074.00	93.30	103.40	3088.26	2218.06	-573.42	2142.66	2.38	32.00	2218.06	104.98
5105.00	93.80	102.90	3086.34	2248.99	-580.46	2172.79	2.28	31.00	2248.99	104.96
5136.00	93.70	102.90	3084.32	2279.90	-587.37	2202.94	0.32	31.00	2279.90	104.93
5168.00	94.50	101.70	3082.03	2311.78	-594.17	2234.13	4.50	32.00	2311.79	104.89
5200.00	94.20	101.00	3079.60	2343.63	-600.45	2265.41	2.37	32.00	2343.63	104.84
5232.00	93.70	100.80	3077.40	2375.47	-606.48	2296.76	1.68	32.00	2375.48	104.79
5264.00	92.50	101.40	3075.67	2407.35	-612.63	2328.11	4.19	32.00	2407.37	104.74
5300.00	92.50	101.40	3074.10	2443.24	-619.74	2363.37	0.00	36.00	2443.28	104.69

Annotation

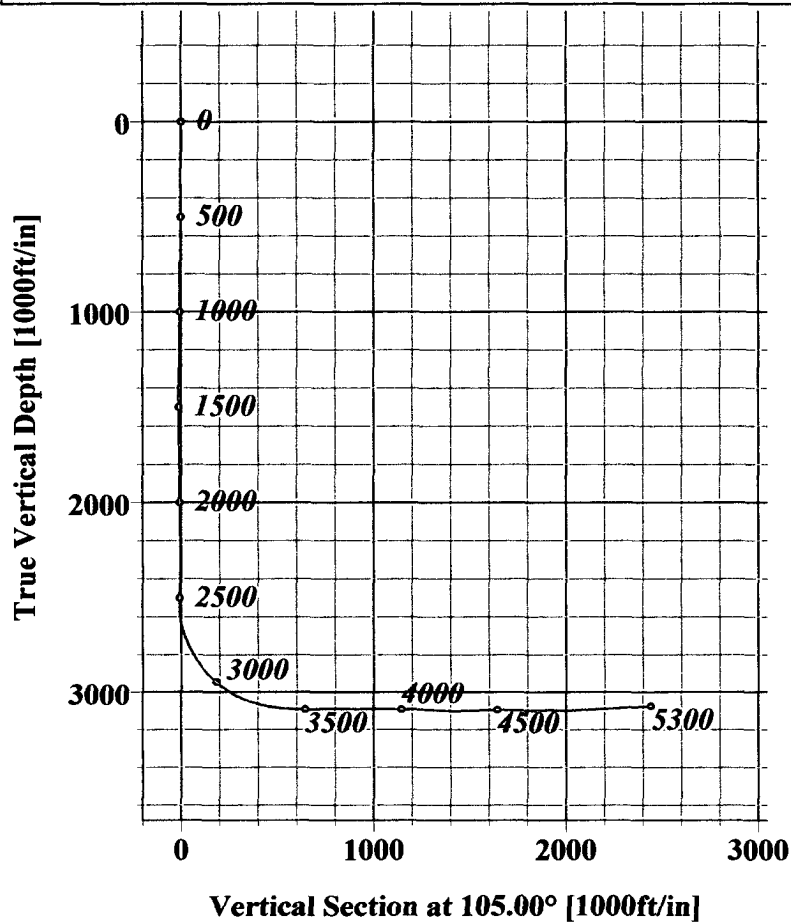
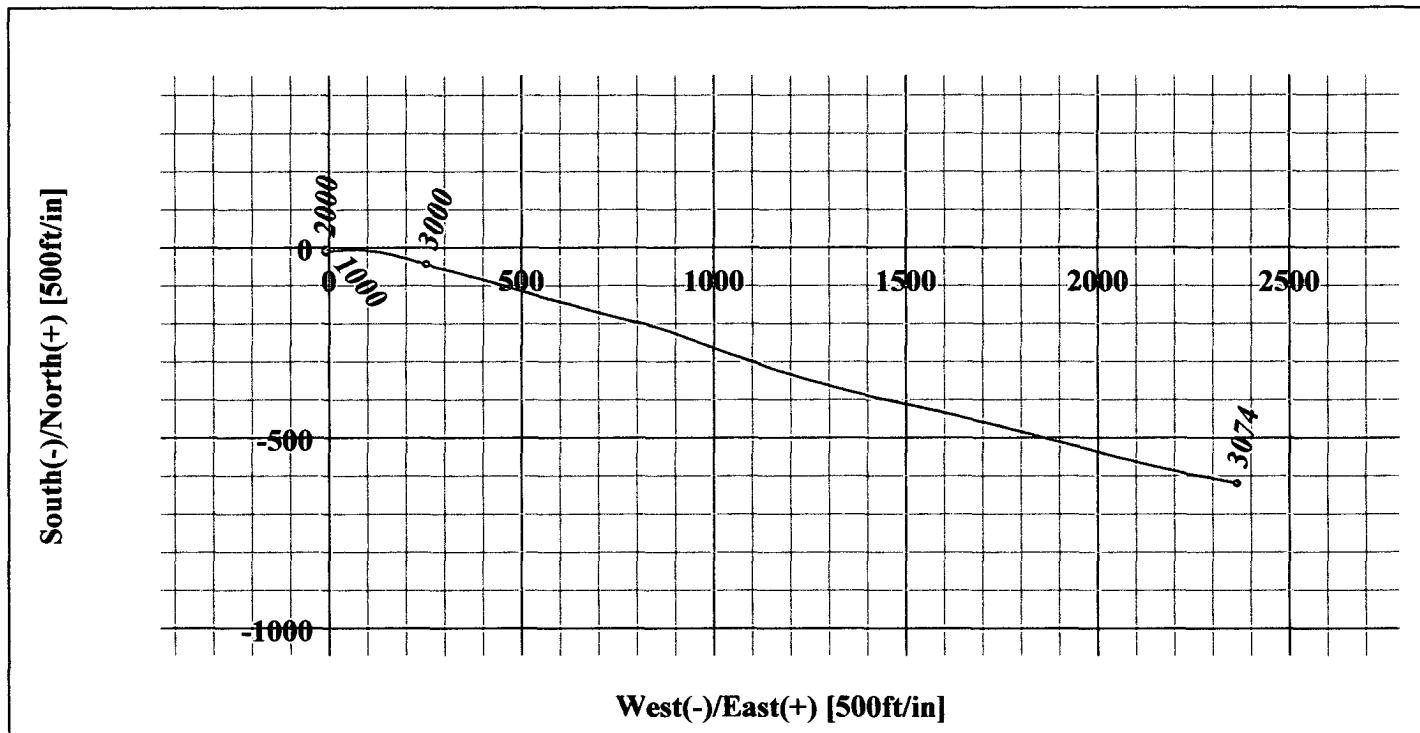
MD ft	TVD ft	
5300.00	3074.10	Survey is a projection to TD



Scientific
Drilling

Williams Production Co.

Field: Rio Arriba County, NM
Site: Rosa Unit #379
Well: #379
Wellpath: OH
Survey: Survey #1



BOTTOM HOLE CLOSURE
(Survey @ 5300' MD is a projection to TD)

2443.28 ft. 104.69° Azimuth

FINAL STATION
(Survey @ 5300' MD is a projection to TD)

5300.0' MD 3074.1' TVD
92.5° Angle 101.4° Azimuth
South 619.74 ft. East 2363.37 ft.
2443.24' Vert. Sec.

Survey: Survey #1 (#379/OH)

Created By: Judi Moore

Date: 8/21/2002