



Weatherford

Drilling Services

PA 30-039-29955

Surface 2005/N 1295/E
BHL 1997/N 2592/W

Final Surveys At TD

H
10/15/07



RCVD OCT 3 '07

OIL CONS. DIV.

DIST. 3

WILLIAMS PRODUCTION COMPANY

ROSA UNIT 358A

Prepared by: Jose A Perez

Submitted: 09/20/07

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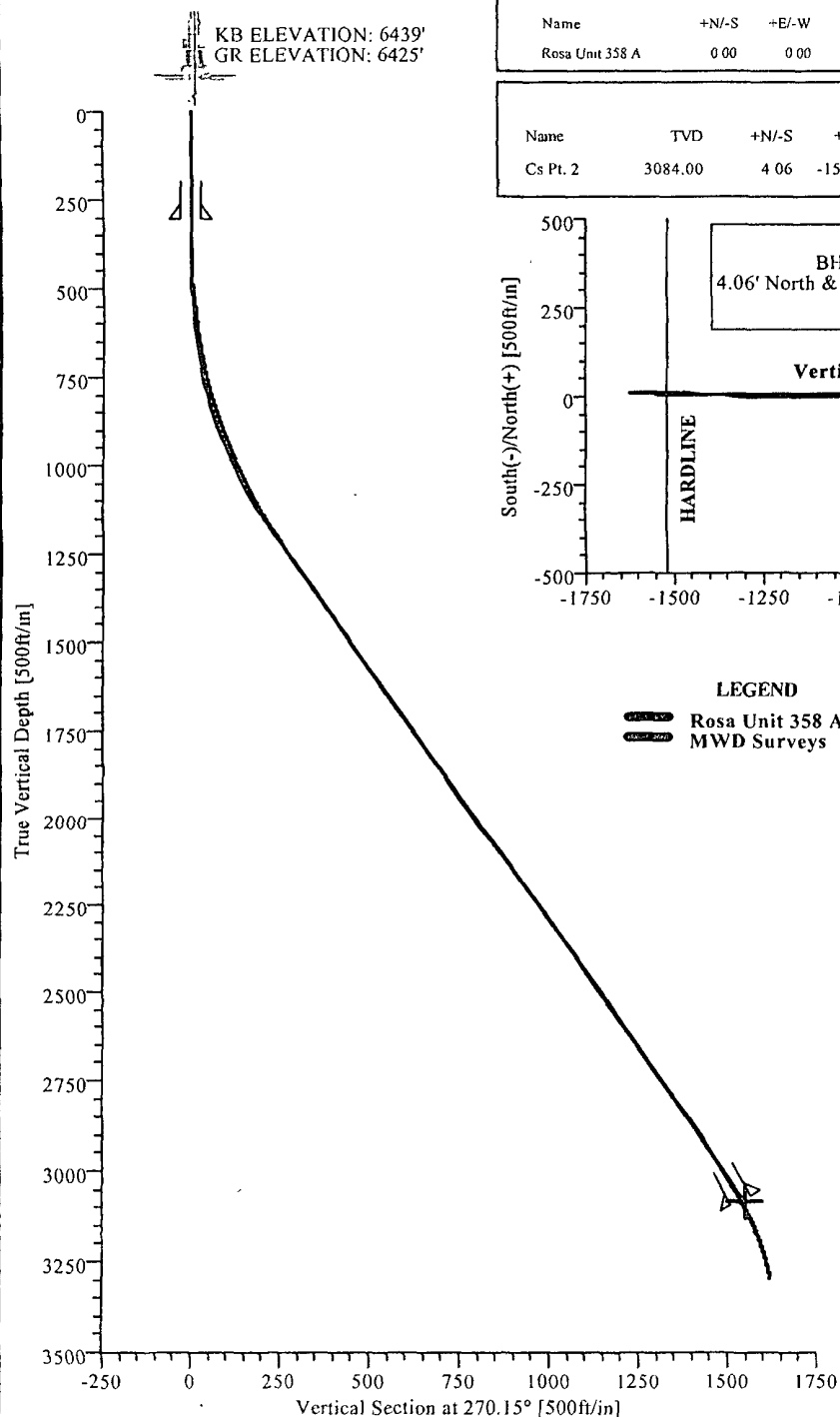
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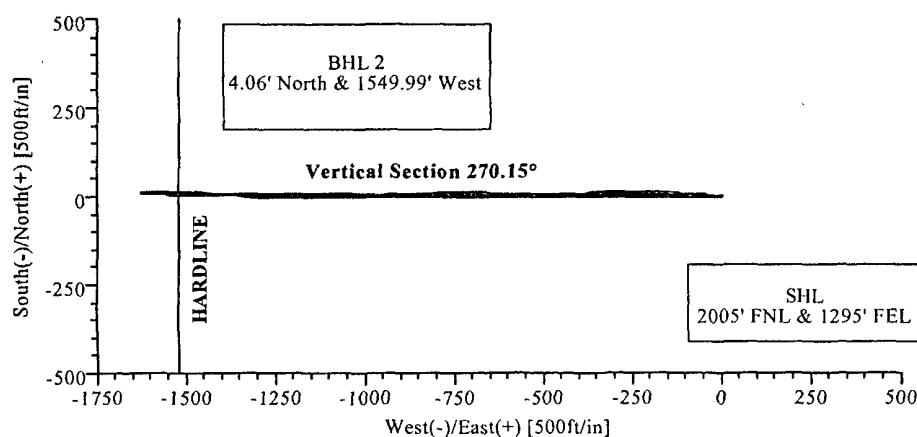
Weatherford

ROSA UNIT 358 A
Section 34 T 32N R 6W
2005' FNL & 1295' FEL
RIO ARriba COUNTY, NM
PLAN 2
Plan vs. Actual

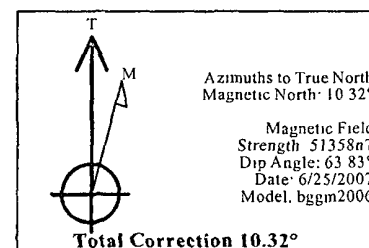


WELL DETAILS						
Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Rosa Unit 358 A	0 00	0 00	2161223 98	2837884 04	36°56'19 000N	107°26'26 000W

TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Cs Pt. 2	3084.00	4 06	-1549.99	36°56'19 040N	107°26'45 093W	Circle (Radius: 50)



FORMATION TOP DETAILS			
No.	TVDPath	MDPath	Formation
1	1224.00	1280.34	Nacimiento
2	2454.00	2779.39	Ojo Alamo
3	2564.00	2913.91	Kirtland
4	2984.00	3423.44	Fruitland
5	3104.00	3564.40	Top Coal Interval
6	3234.00	3704.70	Base Coal Interval
7	3244.00	3715.12	Pictured Cliffs



Plan: Plan #1 (Rosa Unit 358 A/1) p2
Created By: Jose Perez Date: 09/20/07
Weatherford Drilling Services
3611 Plaza East Court
Granbury TX 76049
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Weatherford Drilling Services

Survey Report

Company: WILLIAMS PRODUCTION Field: Rio Arriba County (NAD 83) Site: Rosa Unit 358 A Well: Rosa Unit 358 A Wellpath: Actual				Date: Co-ordinate(NE) Reference: Site: Rosa Unit 358 A, True North Vertical (TVD) Reference: SITE: 6439.0 Section (VS) Reference: Well (0.00N,0.00E,270.15Azi) Survey Calculation Method: Minimum Curvature Db: Sybase						
Field: Rio Arriba County (NAD 83)										
Map System: US State Plane Coordinate System 1983 Geo Datum: GRS 1980 Sys Datum: Mean Sea Level				Map Zone: New Mexico, Western Zone Coordinate System: Site Centre Geomagnetic Model: bggm2006						
Site: Rosa Unit 358 A Well Pad 34 Rio Arriba County, NM										
Site Position: From: Geographic Position Uncertainty: 0.00 ft Ground Level: 6425.00 ft		Northing: 2161223.98 ft Easting: 2837884.04 ft		Latitude: 36 56 19.000 N Longitude: 107 26 26.000 W North Reference: True Grid Convergence: 0.24 deg						
Well: Rosa Unit 358 A S well				Slot Name:						
Well Position: +N/-S 0.00 ft +E/-W 0.00 ft		Northing: 2161223.98 ft Easting: 2837884.04 ft		Latitude: 36 56 19.000 N Longitude: 107 26 26.000 W		Position Uncertainty: 0.00 ft				
Wellpath: Actual 2005' FNL & 1295' FEL Current Datum: SITE Magnetic Data: 6/25/2007 Field Strength: 51358 nT Vertical Section: Depth From (TVD) ft				Drilled From: Surface Tie-on Depth: 0.00 ft Above System Datum: Mean Sea Level Declination: 10.32 deg Mag Dip Angle: 63.83 deg +E/-W ft Direction deg		Height 6439.00 ft				
0.00		0.00		0.00		270.15				
Survey: MWD Surveys Company: Weatherford Drilling Services Tool:				Start Date: 7/9/2007 Engineer: Tied-to: From Surface						
Survey: MWD Surveys										
MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	270.15	400.00	0.00	0.00	0.00	0.00	0.00	0.00	surface casing tie on
439.00	0.69	263.70	439.00	-0.03	-0.23	0.23	1.77	1.77	0.00	first MWD survey
469.00	1.38	275.32	468.99	-0.01	-0.77	0.77	2.39	2.30	38.73	
500.00	2.25	273.45	499.98	0.06	-1.75	1.75	2.81	2.81	-6.03	
531.00	3.25	274.70	530.94	0.17	-3.24	3.24	3.23	3.23	4.03	
562.00	4.38	274.70	561.87	0.34	-5.29	5.29	3.65	3.65	0.00	
590.00	5.44	276.45	589.77	0.57	-7.68	7.68	3.82	3.79	6.25	
620.00	6.63	276.82	619.60	0.94	-10.81	10.81	3.97	3.97	1.23	
650.00	7.88	274.45	649.36	1.30	-14.58	14.58	4.28	4.17	-7.90	
681.00	9.38	272.57	680.01	1.58	-19.22	19.22	4.92	4.84	-6.06	
711.00	10.63	272.20	709.55	1.80	-24.43	24.43	4.17	4.17	-1.23	
742.00	12.13	273.20	739.94	2.09	-30.54	30.54	4.88	4.84	3.23	
772.00	13.56	273.57	769.19	2.48	-37.19	37.20	4.77	4.77	1.23	
803.00	14.94	273.70	799.24	2.97	-44.81	44.82	4.45	4.45	0.42	
833.00	16.69	274.32	828.10	3.54	-52.97	52.97	5.86	5.83	2.07	
865.00	18.18	274.95	858.63	4.32	-62.52	62.53	4.69	4.66	1.97	
897.00	20.88	274.32	888.79	5.18	-73.18	73.20	8.46	8.44	-1.97	
927.00	22.19	273.20	916.69	5.90	-84.17	84.19	4.58	4.37	-3.73	
959.00	23.13	273.03	946.22	6.57	-96.48	96.50	2.94	2.94	-0.53	
991.00	24.56	272.57	975.49	7.20	-109.40	109.42	4.51	4.47	-1.44	
1022.00	26.13	272.95	1003.50	7.84	-122.66	122.68	5.09	5.06	1.23	
1054.00	27.56	272.95	1032.05	8.58	-137.09	137.11	4.47	4.47	0.00	
1086.00	29.00	272.70	1060.23	9.33	-152.23	152.25	4.52	4.50	-0.78	

Weatherford Drilling Services

Survey Report

Company:	WILLIAMS PRODUCTION	Date:		2
Field:	Rio Arriba County (NAD 83)	Co-ordinate(NE) Reference:	Site: Rosa Unit 358 A, True North	
Site:	Rosa Unit 358 A	Vertical (TVD) Reference:	SITE 6439.0	
Well:	Rosa Unit 358 A	Section (VS) Reference:	Well (0.00N,0.00E,270.15Azi)	
Wellpath:	Actual	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Survey: MWD Surveys

MD ft.	Incl. deg.	Azim deg.	TVD ft.	+N/-S ft.	+E/-W ft.	VS ft.	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
1118.00	30.19	272.07	1088.06	9.99	-168.02	168.04	3.84	3.72	-1.97	
1148.00	31.69	271.32	1113.79	10.44	-183.44	183.46	5.16	5.00	-2.50	
1180.00	32.81	270.57	1140.85	10.72	-200.51	200.54	3.72	3.50	-2.34	
1212.00	33.50	269.82	1167.64	10.78	-218.01	218.04	2.51	2.16	-2.34	
1244.00	34.38	269.32	1194.19	10.64	-235.87	235.90	2.89	2.75	-1.56	
1275.00	35.25	269.95	1219.64	10.53	-253.57	253.60	3.04	2.81	2.03	
1307.00	35.19	270.07	1245.78	10.53	-272.03	272.05	0.29	-0.19	0.37	
1339.00	35.44	269.20	1271.90	10.42	-290.52	290.55	1.76	0.78	-2.72	
1371.00	35.50	267.82	1297.96	9.93	-309.09	309.11	2.51	0.19	-4.31	
1403.00	35.19	267.95	1324.06	9.25	-327.59	327.61	1.00	-0.97	0.41	
1434.00	35.13	268.07	1349.40	8.63	-345.43	345.45	0.30	-0.19	0.39	
1466.00	34.94	268.20	1375.60	8.03	-363.79	363.81	0.64	-0.59	0.41	
1498.00	34.94	268.45	1401.84	7.50	-382.11	382.12	0.45	0.00	0.78	
1530.00	34.94	268.70	1428.07	7.04	-400.43	400.44	0.45	0.00	0.78	
1561.00	34.75	269.07	1453.51	6.70	-418.14	418.15	0.92	-0.61	1.19	
1593.00	34.69	269.07	1479.81	6.40	-436.36	436.38	0.19	-0.19	0.00	
1623.00	35.00	268.57	1504.43	6.05	-453.50	453.51	1.41	1.03	-1.67	
1687.00	34.63	268.45	1556.98	5.10	-490.02	490.04	0.59	-0.58	-0.19	
1751.00	34.19	271.07	1609.78	4.94	-526.18	526.19	2.41	-0.69	4.09	
1815.00	35.06	272.32	1662.45	6.02	-562.53	562.54	1.75	1.36	1.95	
1878.00	35.31	270.70	1713.94	6.98	-598.82	598.83	1.53	0.40	-2.57	
1942.00	34.56	270.70	1766.40	7.42	-635.46	635.48	1.17	-1.17	0.00	
2004.00	34.13	271.20	1817.59	8.00	-670.44	670.46	0.83	-0.69	0.81	
2068.00	34.63	271.07	1870.41	8.72	-706.57	706.59	0.79	0.78	-0.20	
2129.00	34.88	269.45	1920.53	8.87	-741.34	741.36	1.57	0.41	-2.66	
2192.00	35.06	268.82	1972.16	8.33	-777.44	777.46	0.64	0.29	-1.00	
2256.00	34.69	268.20	2024.66	7.38	-814.03	814.04	0.80	-0.58	-0.97	
2317.00	35.63	267.95	2074.53	6.20	-849.13	849.15	1.56	1.54	-0.41	
2381.00	35.88	267.95	2126.47	4.86	-886.51	886.51	0.39	0.39	0.00	
2443.00	35.31	268.07	2176.89	3.61	-922.57	922.58	0.93	-0.92	0.19	
2505.00	34.75	268.70	2227.66	2.60	-958.14	958.15	1.08	-0.90	1.02	
2569.00	34.25	268.82	2280.40	1.82	-994.39	994.39	0.79	-0.78	0.19	
2633.00	33.63	268.82	2333.49	1.08	-1030.11	1030.11	0.97	-0.97	0.00	
2696.00	34.25	269.57	2385.76	0.59	-1065.28	1065.28	1.19	0.98	1.19	
2760.00	35.63	270.07	2438.22	0.48	-1101.93	1101.93	2.20	2.16	0.78	
2823.00	35.13	269.82	2489.59	0.44	-1138.41	1138.41	0.83	-0.79	-0.40	
2886.00	35.00	270.32	2541.16	0.49	-1174.60	1174.60	0.50	-0.21	0.79	
2949.00	35.25	270.70	2592.68	0.81	-1210.85	1210.85	0.53	0.40	0.60	
3012.00	35.00	270.57	2644.21	1.21	-1247.10	1247.09	0.41	-0.40	-0.21	
3076.00	34.75	270.07	2696.72	1.42	-1283.69	1283.69	0.59	-0.39	-0.78	
3138.00	34.31	272.07	2747.80	2.07	-1318.82	1318.82	1.96	-0.71	3.23	
3201.00	34.19	272.95	2799.87	3.62	-1354.24	1354.25	0.81	-0.19	1.40	
3263.00	34.38	272.95	2851.10	5.42	-1389.12	1389.13	0.31	0.31	0.00	
3326.00	34.25	271.95	2903.13	6.94	-1424.61	1424.62	0.92	-0.21	-1.59	
3389.00	33.75	271.20	2955.36	7.91	-1459.82	1459.84	1.04	-0.79	-1.19	
3453.00	33.75	270.07	3008.58	8.30	-1495.37	1495.39	0.98	0.00	-1.77	
3484.00	33.06	270.07	3034.46	8.32	-1512.44	1512.46	2.23	-2.23	0.00	last mwd survey
3768.00	12.00	270.07	3295.31	8.45	-1620.65	1620.66	7.42	-7.42	0.00	TD Survey

Weatherford Drilling Services

Survey Report

Company:	WILLIAMS PRODUCTION	Date:		3
Field:	Rio Arriba County (NAD 83)	Co-ordinate(NE) Reference:	Site: Rosa Unit 358 A, True North	
Site:	Rosa Unit 358 A	Vertical (TVD) Reference:	SITE 6439.0	
Well:	Rosa Unit 358 A	Section (VS) Reference:	Well (0.00N,0.00E,270.15Azi)	
Wellpath:	Actual	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Annotation

MD ft	TVD ft	
3484.00	3034.46	last mwd survey
400.00	400.00	surface casing tie on
439.00	439.00	first MWD survey
3768.00	3295.31	TD Survey

ROSA UNIT COM #358A BASIN FRUITLAND COAL

Surface Location:

2005' FNL and 1295' FEL
SE/4 NE/4 Sec 34(H), T32N, R06W
Rio Arriba, NM

Bottom Hole Location:

1996' FNL and 2916' FEL
SE/4 NW/4 Sec 34(F), T31N, R06W
Rio Arriba, NM

Elevation: 6425' GR
API # 30-039-29955

Spud: 07/07/07

Completed: 09/05/07

1st Delivered: 09/18/07

Pump Install: 09/05/07

<u>Top</u>	<u>MD Depth</u>
Ojo Alamo	2986'
Kirtland	3103'
Fruitland	3533'
Pictured Cliffs	3793'

Rod String: 77 - 3/4" API D sucker rods, 71
- 3/4" guided rods, 8', 4', 2' pony rods to
space out, 1-1/4" x 16' polished rod w/1-
1/2" x 8' liner.

0.54", 4 SPF, 280 holes total

Open hole from 6-1/4" to 9-1/2"
from 3555' to 3778'

Pumping Unit
American D114-54-14

7 jts 9-5/8", 36#, J-55, ST&C @ 337'.

78 jts 7", 23#, J-55, LT&C @ 3548'. Float
collar @ 3500'.

5-1/2" x 7" TIW H Latch Liner Hng @ 3502'

115 jts of 2-7/8", 6.5#, J-55 tbg. @ 3757' as
follows: 26' mud anchor, 2.28" SN, 114 jts,
6' & 8' pups & 1 jt tbg. (1/4" stainless steel
chem cap string strapped to outside of tbg)

1-1/4" RHAC Insert Pump
with 1" x 6' Gas Anchor

6 jts 5-1/2", 17#, N-80
@ 3502' - 3778'.

TD @ 3778'

Hole Size	Casing	Cement	Volume	Top of Cmt
12-1/4"	9-5/8", 36#	215 sx	254 cu ft.	Surface
8-3/4"	7", 23#	550 sx	1120 cu. ft.	Surface
6-1/4"	5-1/2", 17#	Did Not Cmt		