



WeatherfordTM

Drilling Services

H 10/15/07

32039-29801

Final Survey Report

*Surface 2606/S 2530/E
start lateral 2303/N 2417/W
BWL 1930/N 2004/W.F
ML 4070, TVL 3763
MD 4675, TVL 3766.*



WILLIAMS PRODUCTION COMPANY

ROSA UNIT 393A

Prepared by: Jose A Perez

Submitted: 09/11/07

Weatherford Drilling Services

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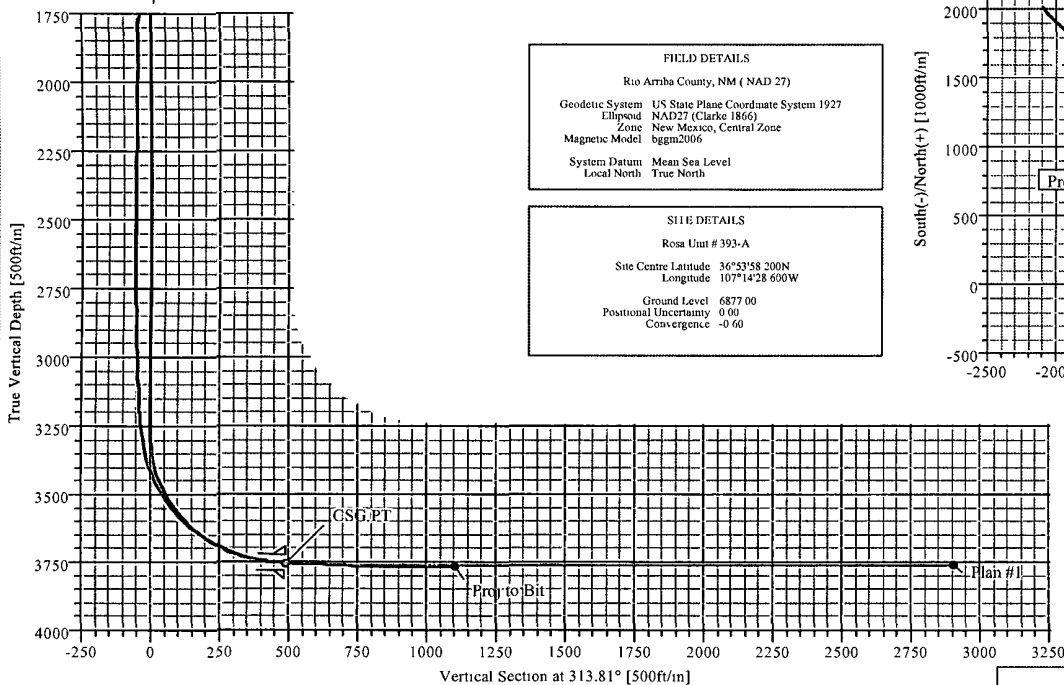
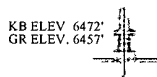
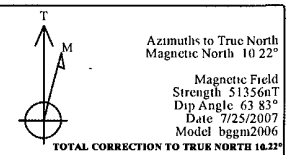
ROSA UNIT No. 393-A
NWSE 15-31N-04W
2605' FSL & 2520' FEL
Rio Arriba County, NM
PLAN VS ACTUAL

Sec.	MD	Inc	Azi	1VD	+N/-S	+E/-W	DLeg	IFace	VSec	Target
1	0.00	0.00	313.81	0.00	0.00	0.00	0.00	0.00	0.00	
2	3274.83	0.00	313.81	3274.83	0.00	0.00	0.00	313.81	0.00	
3	4008.16	88.00	313.81	3752.00	319.00	-332.53	12.00	-46.19	460.80	
4	4089.19	88.00	313.81	3754.83	375.06	-390.97	0.00	0.00	541.78	
5	4155.86	90.00	313.81	3756.00	421.20	-439.07	3.00	0.00	608.44	
6	4185.86	90.00	313.81	3756.00	441.97	-460.72	0.00	0.00	638.44	
7	4285.86	88.00	313.81	3757.74	511.18	-532.87	2.00	180.00	738.42	
8	4329.36	88.00	313.81	3759.26	541.28	-564.24	0.00	0.00	781.89	
9	4429.36	90.00	313.81	3761.00	610.49	-656.39	2.00	0.00	881.87	
10	6454.86	90.00	313.81	3761.00	2012.68	-2098.07	0.00	0.00	2907.37	

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
Rosa Unit # 393A	0.00	0.00	2148151.67	210152.03	36°53'58.200N	107°14'28.600W	N/A

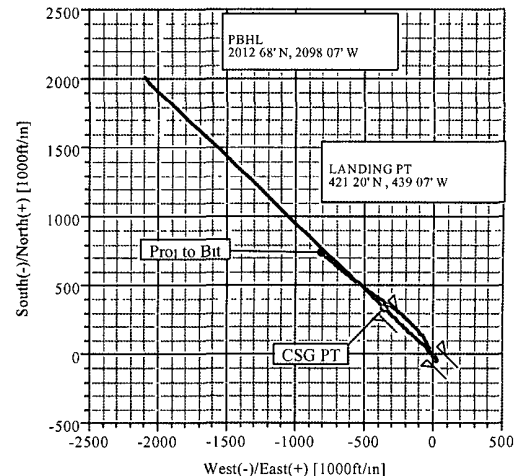


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Rio Arriba County, NM (NAD 27)	
Geodetic System	US State Plane Coordinate System 1927
Ellipsoid	NAD27 (Clarke 1866)
Zone	New Mexico, Central Zone
Magnetic Model	bggm2006
System Datum	Mean Sea Level
Local North	True North

Rosa Unit # 393-A	
Site Centre Latitude	36°53'58.200N
Longitude	107°14'28.600W
Ground Level	6877.00
Positional Uncertainty	0.00
Convergence	-0.60



Plan Plan #1 (Rosa Unit # 393A/Proj to Bit)
Created By: J.A.P. Date: 9/11/2007

Survey Report

Company: WILLIAMS PRODUCTION Field: Rio Arriba County, NM (NAD 27) Site: Rosa Unit # 393-A Well: Rosa Unit # 393A Wellpath: Proj to Bit				Date: 9/11/2007 Co-ordinate(NE) Reference: Site: Rosa Unit # 393-A, True North Vertical (TVD) Reference: SITE 6891.0 Section (VS) Reference: Well (0.00N,0.00E;313.81Azi) Survey Calculation Method: Minimum Curvature Db: Sybase				Page: 1		
Field: Rio Arriba County, NM (NAD 27)										
Map System: US State Plane Coordinate System 1927 Geo Datum: NAD27 (Clarke 1866) Sys Datum: Mean Sea Level				Map Zone: New Mexico, Central Zone Coordinate System: Site Centre Geomagnetic Model: bggm2006						
Site: Rosa Unit # 393-A										
Site Position: From: Geographic Position Uncertainty: 0.00 ft Ground Level: 6877.00 ft		Northing: 2148151.67 ft Easting: 210152.03 ft		Latitude: 36 53 58.200 N Longitude: 107 14 28.600 W North Reference: True Grid Convergence: -0.60 deg						
Well: Rosa Unit # 393A				Slot Name:						
Well Position: +N/-S 0.00 ft +E/-W 0.00 ft Position Uncertainty: 0.00 ft		Northing: 2148151.67 ft Easting : 210152.03 ft		Latitude: 36 53 58 200 N Longitude: 107 14 28 600 W						
Wellpath: Proj to Bit				Drilled From: Surface Tie-on Depth: 0.00 ft Above System Datum: Mean Sea Level Declination: 10.22 deg Mag Dip Angle: 63.83 deg +E/-W Direction ft deg						
Current Datum: SITE Magnetic Data: 7/25/2007 Field Strength: 51356 nT Vertical Section: Depth From (TVD) ft +N/-S ft		Height 6891.00 ft		0.00 313.81						
Survey: MWD Survey				Start Date: 8/22/2007						
Company: Weatherford Drilling Services Tool:				Engineer: Tied-to: User Defined						
Survey: MWD Survey										
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	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
1205.00	3.06	126.10	1204.62	-12.66	17.36	-21.30	0.38	0.38	0.00	
1965.00	1.81	182.72	1964.01	-36.61	33.19	-49.29	0.34	-0.16	7.45	
2469.00	0.81	179.60	2467.87	-48.12	32.84	-57.01	0.20	-0.20	-0.62	
3014.00	2.56	302.72	3012.71	-45.39	22.62	-47.75	0.56	0.32	22.59	
3143.00	2.44	294.85	3141.58	-42.68	17.70	-42.32	0.28	-0.09	-6.10	
3211.00	4.25	312.72	3209.47	-40.36	14.54	-38.43	3.04	2.66	26.28	
3221.00	5.00	319.72	3219.43	-39.78	13.98	-37.63	9.37	7.50	70.00	
3231.00	5.69	325.97	3229.39	-39.04	13.43	-36.71	9.02	6.90	62.50	
3243.00	6.38	333.22	3241.32	-37.95	12.79	-35.50	8.56	5.75	60.42	
3274.00	7.19	339.60	3272.11	-34.59	11.34	-32.13	3.57	2.61	20.58	
3306.00	10.06	337.72	3303.74	-30.13	9.58	-27.77	9.01	8.97	-5.87	
3338.00	13.88	337.85	3335.04	-23.98	7.07	-21.71	11.94	11.94	0.41	
3369.00	17.25	338.47	3364.90	-16.26	3.98	-14.13	10.88	10.87	2.00	
3401.00	20.00	338.60	3395.22	-6.75	0.25	-4.85	8.59	8.59	0.41	
3431.00	22.50	337.10	3423.18	3.31	-3.86	5.08	8.53	8.33	-5.00	
3463.00	26.25	337.72	3452.32	15.51	-8.93	17.18	11.75	11.72	1.94	
3495.00	30.31	336.35	3480.50	29.46	-14.85	31.11	12.85	12.69	-4.28	
3527.00	33.81	335.10	3507.61	44.93	-21.84	46.87	11.13	10.94	-3.91	
3559.00	36.19	333.47	3533.82	61.47	-29.81	64.06	7.99	7.44	-5.09	
3590.00	39.81	331.97	3558.25	78.42	-38.57	82.12	12.05	11.68	-4.84	
3620.00	43.75	329.85	3580.62	95.87	-48.29	101.22	13.95	13.13	-7.07	
3652.00	47.94	327.10	36							

Weatherford Drilling Services

Survey Report

Company: WILLIAMS PRODUCTION Field: Rio Arriba County, NM (NAD 27) Site: Rosa Unit # 393-A Well: Rosa Unit # 393A Wellpath: Proj. to Bit	Date: 9/11/2007 Co-ordinate(NE) Reference: Site: Rosa Unit # 393-A, True North Vertical (TVD) Reference: SITE 6891.0 Section (VS) Reference: Well (0.00N,0.00E,313.81Azi) Survey Calculation Method: Minimum Curvature Db: Sybase
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Survey: MWD Survey

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
3684.00	52.06	324.07	3623.47	135.63	-74.17	147.42	14.78	12.87	-9.47	
3715.00	54.69	321.60	3641.97	155.45	-89.21	171.99	10.62	8.48	-7.97	
3747.00	56.19	319.35	3660.12	175.77	-105.98	198.16	7.45	4.69	-7.03	
3779.00	59.00	316.97	3677.27	195.88	-124.01	225.09	10.79	8.78	-7.44	
3809.00	61.75	314.22	3692.10	214.51	-142.26	251.15	12.14	9.17	-9.17	
3841.00	65.31	312.47	3706.36	234.16	-163.09	279.79	12.15	11.12	-5.47	
3872.00	69.50	311.35	3718.27	253.27	-184.38	308.39	13.92	13.52	-3.61	
3904.00	73.13	309.60	3728.52	272.94	-207.44	338.64	12.47	11.34	-5.47	
3936.00	75.94	308.85	3737.05	292.44	-231.33	369.38	9.07	8.78	-2.34	
3967.00	79.44	307.97	3743.66	311.25	-255.06	399.53	11.63	11.29	-2.84	
3987.00	81.88	307.72	3746.91	323.36	-270.64	419.16	12.26	12.20	-1.25	
4070.00	89.50	304.47	3753.14	372.06	-337.47	501.10	9.98	9.18	-3.92	
4088.00	90.50	305.22	3753.14	382.35	-352.24	518.88	6.94	5.56	4.17	
4120.00	89.44	305.35	3753.16	400.83	-378.36	550.53	3.34	-3.31	0.41	
4151.00	87.50	305.22	3753.99	418.73	-403.66	581.17	6.27	-6.26	-0.42	
4183.00	85.94	305.47	3755.82	437.21	-429.72	612.77	4.94	-4.87	0.78	
4209.00	85.13	304.86	3757.84	452.14	-450.91	638.40	3.90	-3.12	-2.35	
4215.00	84.94	304.72	3758.36	455.55	-455.82	644.30	3.93	-3.17	-2.33	
4247.00	85.69	304.60	3760.97	473.69	-482.05	675.79	2.37	2.34	-0.37	
4279.00	88.06	305.97	3762.72	492.14	-508.13	707.38	8.55	7.41	4.28	
4310.00	89.94	306.47	3763.26	510.46	-533.13	738.10	6.28	6.06	1.61	
4341.00	89.63	306.22	3763.38	528.83	-558.10	768.84	1.28	-1.00	-0.81	
4373.00	87.94	307.22	3764.05	547.96	-583.75	800.59	6.14	-5.28	3.12	
4405.00	88.94	307.72	3764.92	567.42	-609.13	832.38	3.49	3.12	1.56	
4437.00	90.94	308.72	3764.96	587.21	-634.27	864.23	6.99	6.25	3.12	
4469.00	90.38	309.10	3764.59	607.31	-659.17	896.11	2.11	-1.75	1.19	
4501.00	90.88	309.97	3764.24	627.68	-683.85	928.02	3.14	1.56	2.72	
4533.00	91.94	310.10	3763.45	648.26	-708.34	959.94	3.34	3.31	0.41	
4565.00	88.25	310.47	3763.40	668.95	-732.75	991.87	11.59	-11.53	1.16	
4597.00	88.19	313.85	3764.39	690.41	-756.45	1023.84	10.56	-0.19	10.56	
4629.00	89.44	314.47	3765.05	712.70	-779.41	1055.83	4.36	3.91	1.94	last MWD Survey
4675.00	89.44	314.47	3765.50	744.92	-812.23	1101.82	0.00	0.00	0.00	Proj. to Bit

Annotation

MD ft	TVD ft	
4629.00	3765.05	last MWD Survey
4675.00	3765.50	Proj. to Bit

ROSA UNIT #393A
BASIN FRUITLAND COAL

Location:

SHL: 2605' FSL and 2520' FEL
NW/4 SE/4 Sec 15(J), T31N, R04W

BHL: 3350' FSL and 3332' FEL
SE/4 NW/4 Sec 15(F), T31N, R04W
Rio Arriba, New Mexico

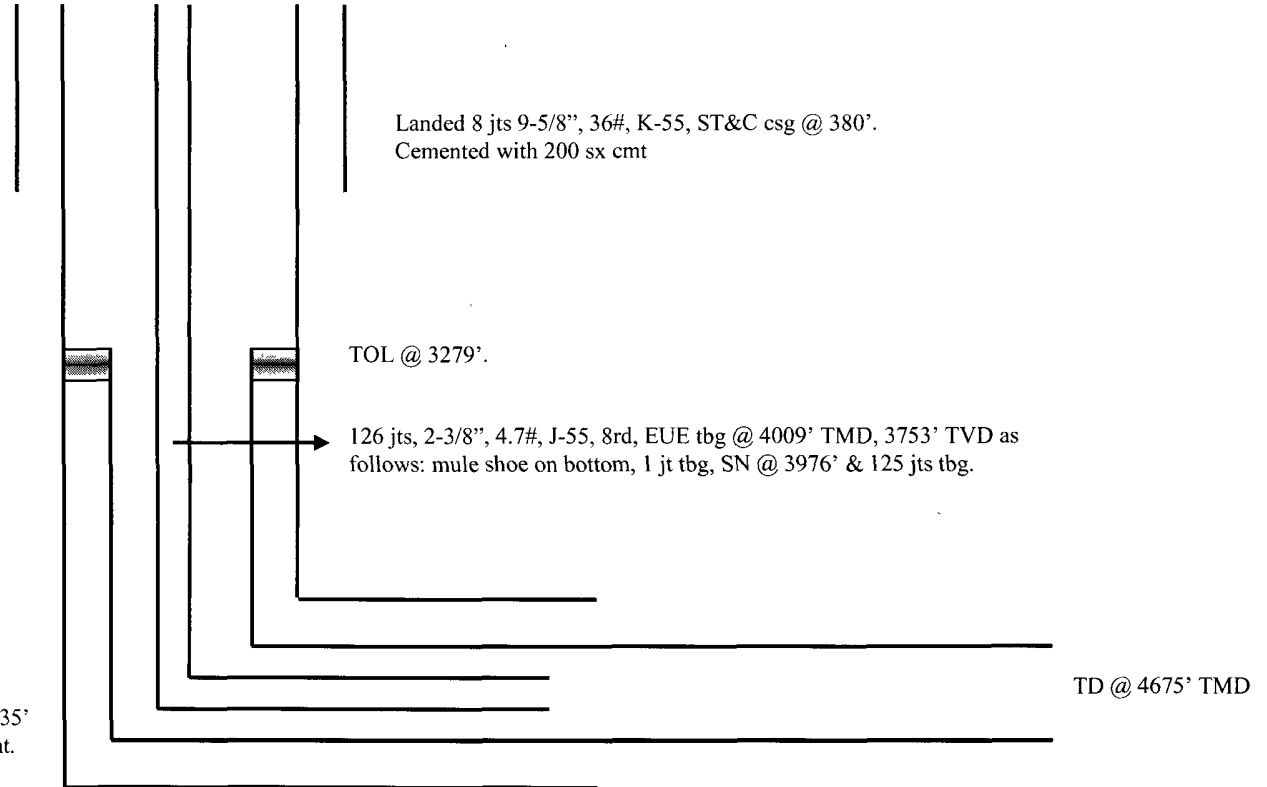
Elevation: 6887' GR
API # 30-039-29801

Spud date: 08/08/07

Completed: 08/31/07

1st Delivered: 09/21/07

Top	MD Depth
Ojo Alamo	3161'
Kirtland	3286'
Fruitland	3662'



Landed 88 jts 7", 23#, K-55, LT&C csg @ 4035'
TMD, 3753' TVD. Cemented with 725 sx cmt.

Landed 8 jts 9-5/8", 36#, K-55, ST&C csg @ 380'.
Cemented with 200 sx cmt

TOL @ 3279'.

126 jts, 2-3/8", 4.7#, J-55, 8rd, EUE tbg @ 4009' TMD, 3753' TVD as
follows: mule shoe on bottom, 1 jt tbg, SN @ 3976' & 125 jts tbg.

TD @ 4675' TMD

Landed 4-1/2" liner @ 4668' TMD, 3765' TVD, TOL @
3279' as follows: liner hanger, 1 jt 4 1/2", 11.6#, K-55 non-
perfed csg, 32 jts, 4 1/2", 11.6#, K-55 perfed csg & shoe on
bottom. Liner perfs are from 3330' TMD to 4666' TMD.
Total of 37,408 (0.50") holes.

Hole Size	Casing	Cement	Volume	Top of CMT
12-1/4"	9-5/8", 36#	200 sxs	282 cu.ft.	surface
8-3/4"	7", 23#	725 sxs	1311 cu.ft.	surface
6-1/4"	4-1/2", 11.6#	Did Not Cmt	N/A	N/A