

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised October 12, 2005
Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☒ AMENDED REPORT
"As Drilled"

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-039-30937		*Pool Code 97232	*Pool Name BASIN MANCOS
*Property Code 17033	*Property Name ROSA UNIT		*Well Number 634B
*GRID No. 120782	*Operator Name WILLIAMS PRODUCTION COMPANY		*Elevation 6260'

10 Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	22	31N	6W		1485	NORTH	645	EAST	RIO ARriba

11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	23	31N	6W		1985	NORTH	26	EAST	RIO ARriba

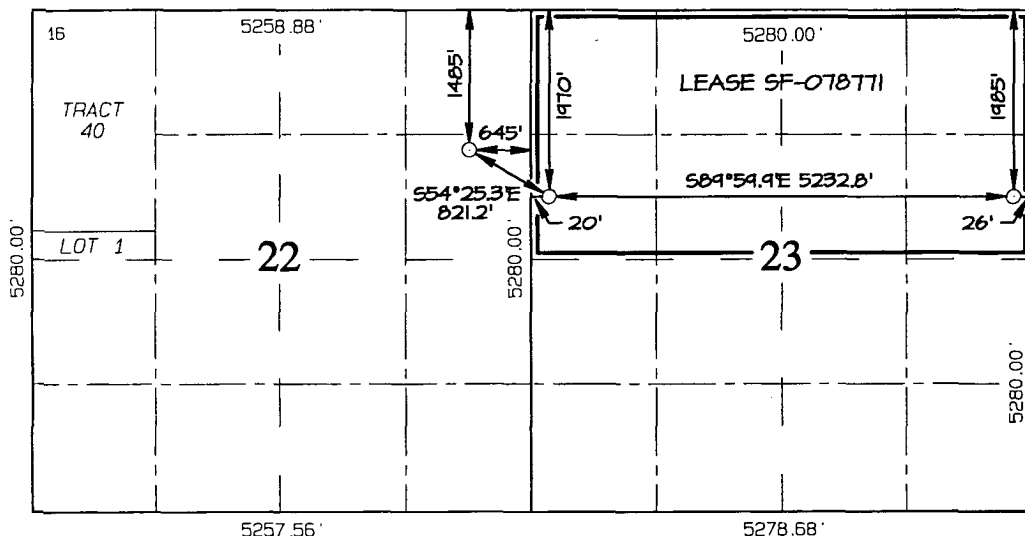
12 Dedicated Acres 320.0 Acres - (N/2)		13 Joint or Infill	14 Consolidation Code	15 Order No. RCVD SEP 14 '10 OIL CONS. DIV. DIST. 3
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

SURFACE LOCATION
1485' FNL 645' FEL
SECTION 22, T31N, R6W
LAT: 36.88830°N
LONG: 107.44339°W
DATUM: NAD1983

POINT-OF-ENTRY
1970' FNL 20' FWL
SECTION 23, T31N, R6W
LAT: 36.88698°N
LONG: 107.44111°W
DATUM: NAD1983

END-OF-LATERAL
1985' FNL 26' FEL
SECTION 23, T31N, R6W
LAT: 36.88692°N
LONG: 107.42322°W
DATUM: NAD1983



17 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom-hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Larry Higgins 9-13-10
Signature Date
LARRY HIGGINS
Printed Name

18 SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Survey Date: SEPTEMBER 11, 2009

Signature and Seal of Professional Surveyor



JASON C. EDWARDS
Certificate Number 15269

THE HORIZONTAL LATERAL REPRESENTED ON THIS PLAT CORRESPONDS TO THE BLACK SEGMENT WHICH VARIES IN TRUE VERTICAL DEPTH FROM 6946' AT THE POINT-OF-ENTRY TO 6790' AT THE END-OF-LATERAL.



**DRILLING SERVICES
END OF WELL REPORT
FOR**

**Gary Sizemore
Williams Production Co.**

Rosa Unit #634B

Rio Arriba County, NM

API # 30-039-30937

Weatherford Drilling Services job start date : 6-3-2010

Weatherford Drilling Services job end date : 7-20-2010

Presented By:

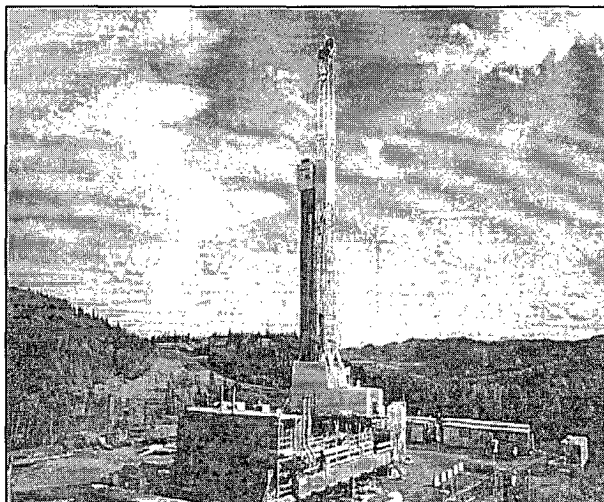
Luke Schnell
Area Manager

Chuck Henkes
Account Manager

Damien Tarpley
Directional Drilling Coordinator

Jesse Aguilar
MWD Coordinator

Frontier 7



RCVD SEP 14 10
OIL CONS. DIV.
DIST. 3



Weatherford®

Williams Production Co.

Rosa Unit #634B

Rio Arriba County, NM

Section 1

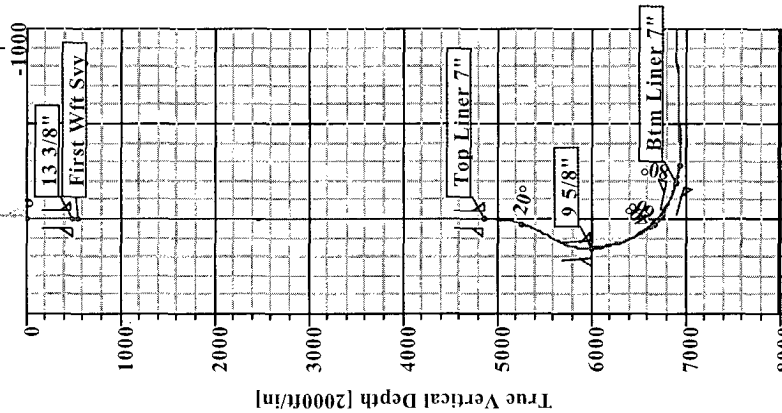
Weatherford (Wft) Final Definitive

Plot & Survey

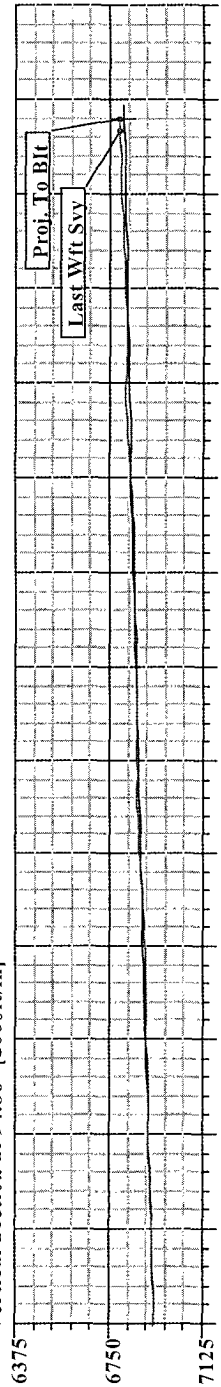


Rosa Unit 634B
RIO ARRIBA CO. NM

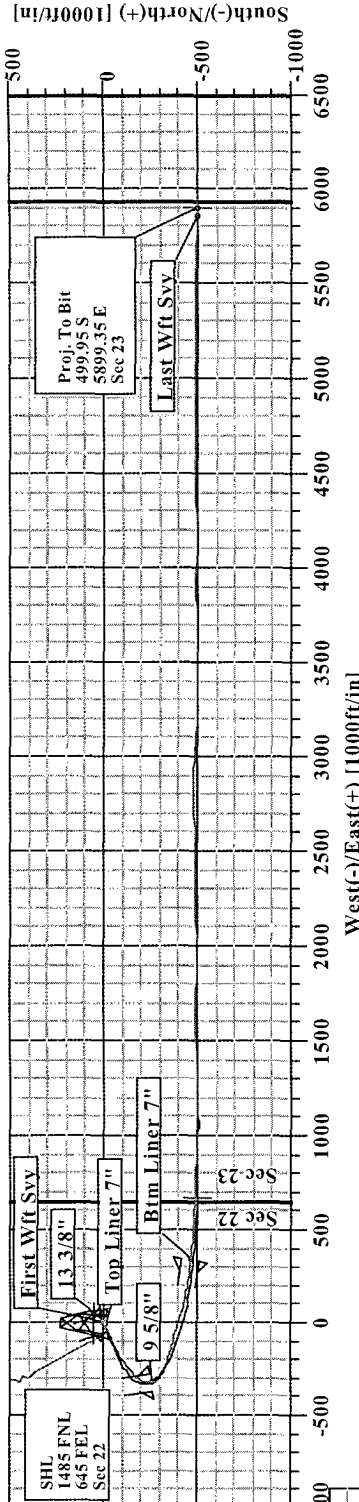
KB ELEV: 6278.5 est.
GL ELEV: 6260



True Vertical Depth [2000ft/in]



Vertical Section at 94.86° [750ft/in]



West(-)/East(+) [1000ft/in]

LEGEND

- Rosa Unit 634B, 1, Plan #3
- Wft Svy



Weatherford

SECTION DETAILS									
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec Target
1	5157.00	11.90	246.57	5153.84	-15.18	-31.14	0.00	0.00	-29.74
2	5555.14	35.79	247.01	5515.37	-178.11	6.00	0.00	0.00	-170.86
3	7654.32	91.52	90.06	6947.00	-496.58	663.64	5.91	-151.82	703.36 Lp
4	12891.24	91.52	90.06	6808.00	-502.01	5898.71	0.00	-158.42	5920.03 Pbh

WELL DETAILS					
Name	+N/-S	+E/-W	Northing	Easting	Latitude Longitude Slot
Rosa Unit 634B	0.00	0.00	2142903.98	2837130.56	36°53'17.880N 107°26'36.204W N/A

SITE DETAILS

Rosa Unit 634B

Site Centre Latitude: 36°53'17.880N
Longitude: 107°26'36.204W

Ground Level: 6260.00
Positional Uncertainty: 0.00
Convergence: 0.23

FORMATION TOP DETAILS		
No.	TVDPath	MDPath Formation
1	2345.00	2345.76 Ojo Alamo Ss.
2	2445.00	2445.77 Kirtland Sh.
3	2945.00	2945.98 Fruitland Fm.
4	3120.00	3121.01 Pictured Cliffs Ss.
5	3401.00	3402.05 Lewis Sh.
6	5295.00	5304.66 Cliff House Ss.
7	5350.00	5364.53 Menefee Fm.
8	5585.00	5637.30 Point Lookout Ss.
9	5880.00	5973.60 Mancos Sh.

TARGET DETAILS				
Name	TVD	+N/-S	+E/-W	Shape
Pbh	6808.00	-502.01	5898.71	Point
Lp	6947.00	-496.58	663.64	Point

CASING DETAILS			
No.	TVD	MD	Size
1	491.89	492.00	13 3/8"
2	6004.41	6104.00	9 5/8"
3	4863.37	4865.00	Top Liner 7"
4	6902.27	7346.00	Btm Liner 7"

Survey: Wft Svy (Rosa Unit 634B/1)							
No	MD	Inc	Az	TVD	+N/-S	+E/-W	VSec
256	12913.00	91.29	91.54	6790.00	-499.95	5899.35	5920.49

Diagram

North arrow pointing up, labeled 'M'.

Azimuths to True North
Magnetic North: 9.91°

Magnetic Field
Strength: 51014nT
Dip Angle: 63.67°
Date: 6/8/2010
Model: IGRF2010

Total Correction To True North 9.91°



Weatherford International Ltd.

WFT Survey Report X & Y's



Weatherford

Company: WILLIAMS PRODUCTION Date: 7/20/2010 Time: 15:27:16 Page: 1
 Field: RIO ARriba CO. NM (NAD 83 NM W Zone) Co-ordinate(NE) Reference: Well: Rosa Unit 634B True North
 Site: Rosa Unit 634B Vertical (TVD) Reference: SITE 6278.5
 Well: Rosa Unit 634B Section (VS) Reference: Well (0.00N,0.00E,94.86Azi)
 Wellpath: 1 Survey Calculation Method: Minimum Curvature Db: Sybase

Survey: Wft Svy

Start Date: 6/7/2010

Company: Weatherford International Ltd.

Engineer: Russell W Joyner

Tool: MWD;MWD - Standard

Tied-to: From Surface

Field: RIO ARriba CO. NM (NAD 83 NM W Zone)

Map System:US State Plane Coordinate System 1983

Map Zone: New Mexico, Western Zone

Geo Datum: GRS 1980

Coordinate System: Well Centre

Sys Datum: Mean Sea Level

Geomagnetic Model: IGRF2010

Site: Rosa Unit 634B

Site Position: Northing: 2142903.98 ft Latitude: 36 53 17.880 N
 From: Geographic Easting: 2837130.56 ft Longitude: 107 26 36.204 W
 Position Uncertainty: 0.00 ft North Reference: True
 Ground Level: 6260.00 ft Grid Convergence: 0.23 deg

Well: Rosa Unit 634B

Slot Name:

Well Position: +N/-S 0.00 ft Northing: 2142903.98 ft Latitude: 36 53 17.880 N
 +E/-W 0.00 ft Easting: 2837130.56 ft Longitude: 107 26 36.204 W
 Position Uncertainty: 0.00 ft

Wellpath: 1

Current Datum: SITE Height 6278.50 ft
 Magnetic Data: 6/8/2010
 Field Strength: 51014 nT
 Vertical Section: Depth From (TVD) +N/-S
 ft ft
 0.00 0.00 0.00 94.86

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	DLS deg/100ft	VS ft	MapN ft	MapE ft	Comment
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2142903.98	2837130.56	
492.00	2.08	159.85	491.89	-8.39	3.08	0.42	3.78	2142895.61	2837133.67	13 3/8" First Wft Svy
546.00	2.31	159.85	545.85	-10.33	3.79	0.42	4.65	2142893.67	2837134.39	
606.00	1.92	160.68	605.81	-12.42	4.54	0.65	5.58	2142891.59	2837135.15	
667.00	1.16	156.64	666.79	-13.95	5.12	1.26	6.29	2142890.06	2837135.74	
729.00	0.56	146.03	728.78	-14.77	5.54	1.00	6.77	2142889.23	2837136.16	
791.00	0.79	354.94	790.78	-14.60	5.67	2.11	6.89	2142889.41	2837136.29	
854.00	1.09	348.81	853.77	-13.58	5.52	0.50	6.65	2142890.43	2837136.13	
915.00	1.18	358.85	914.76	-12.38	5.39	0.36	6.42	2142891.62	2837136.00	
978.00	1.43	352.79	977.74	-10.95	5.28	0.45	6.19	2142893.05	2837135.88	
1040.00	1.56	354.29	1039.72	-9.35	5.10	0.22	5.87	2142894.66	2837135.69	
1101.00	1.68	1.38	1100.70	-7.63	5.04	0.38	5.67	2142896.38	2837135.63	
1163.00	1.91	2.37	1162.67	-5.68	5.10	0.37	5.57	2142898.32	2837135.68	
1225.00	2.26	1.83	1224.63	-3.43	5.19	0.57	5.46	2142900.57	2837135.76	
1288.00	2.92	1.01	1287.56	-0.58	5.25	1.05	5.28	2142903.42	2837135.81	
1350.00	2.14	1.72	1349.50	2.15	5.32	1.26	5.11	2142906.15	2837135.86	
1412.00	1.35	7.57	1411.47	4.03	5.45	1.30	5.09	2142908.04	2837135.99	
1473.00	0.73	10.54	1472.46	5.13	5.61	1.02	5.16	2142909.13	2837136.15	
1535.00	0.36	351.42	1534.46	5.71	5.66	0.66	5.15	2142909.71	2837136.19	
1597.00	0.16	83.15	1596.46	5.91	5.71	0.64	5.19	2142909.92	2837136.24	
1659.00	0.44	241.37	1658.46	5.81	5.59	0.95	5.08	2142909.81	2837136.12	
1721.00	1.06	242.26	1720.45	5.43	4.87	1.00	4.40	2142909.43	2837135.41	
1783.00	1.53	239.78	1782.44	4.74	3.65	0.76	3.24	2142908.74	2837134.19	
1846.00	1.63	239.45	1845.41	3.86	2.15	0.16	1.82	2142907.85	2837132.69	



Weatherford International Ltd.

WFT Survey Report X & Y's



Weatherford

Company: WILLIAMS PRODUCTION	Date: 7/20/2010	Time: 15:27:16	Page: 2
Field: RIO ARriba CO. NM (NAD 83-NM W Zone)	Co-ordinate(NE) Reference:	Well: Rosa-Unit 634B; True North	
Site: Rosa Unit 634B	Vertical (TVD) Reference:	SITE 6278.5	
Well: Rosa-Unit 634B	Section (VS) Reference:	Well (0.00N;0.00E,94.86Azi)	
Wellpath: 1	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	DLS deg/100ft	VS ft	MapN ft	MapE ft	Comment
1907.00	2.00	244.79	1906.38	2.97	0.44	0.67	0.19	2142906.95	2837130.99	
1972.00	2.06	243.04	1971.34	1.96	-1.63	0.13	-1.79	2142905.93	2837128.92	
2034.00	1.38	247.41	2033.31	1.16	-3.31	1.12	-3.39	2142905.13	2837127.24	
2096.00	1.13	256.29	2095.30	0.73	-4.59	0.51	-4.64	2142904.70	2837125.96	
2159.00	1.25	260.91	2158.28	0.48	-5.87	0.24	-5.89	2142904.43	2837124.68	
2221.00	1.13	261.29	2220.27	0.28	-7.15	0.19	-7.14	2142904.23	2837123.41	
2283.00	1.25	248.66	2282.26	-0.06	-8.38	0.46	-8.34	2142903.89	2837122.18	
2345.00	1.06	247.91	2344.24	-0.52	-9.54	0.31	-9.46	2142903.42	2837121.02	
2408.00	0.69	213.16	2407.24	-1.06	-10.29	1.00	-10.16	2142902.88	2837120.27	
2470.00	0.84	196.92	2469.23	-1.81	-10.62	0.42	-10.43	2142902.13	2837119.94	
2533.00	1.06	171.79	2532.22	-2.83	-10.68	0.74	-10.40	2142901.11	2837119.89	
2595.00	1.63	135.91	2594.21	-4.03	-9.98	1.60	-9.60	2142899.91	2837120.59	
2657.00	1.88	127.54	2656.18	-5.28	-8.56	0.58	-8.08	2142898.67	2837122.02	
2721.00	1.95	115.76	2720.14	-6.39	-6.75	0.62	-6.18	2142897.56	2837123.83	
2785.00	1.69	108.54	2784.11	-7.17	-4.87	0.54	-4.25	2142896.80	2837125.71	
2848.00	1.75	94.04	2847.08	-7.53	-3.03	0.70	-2.38	2142896.44	2837127.56	
2910.00	2.19	86.29	2909.04	-7.52	-0.91	0.83	-0.26	2142896.46	2837129.68	
2972.00	1.38	85.16	2971.01	-7.38	1.02	1.31	1.64	2142896.61	2837131.61	
3034.00	1.06	101.41	3033.00	-7.43	2.33	0.76	2.95	2142896.56	2837132.91	
3095.00	0.83	88.20	3093.99	-7.53	3.32	0.52	3.95	2142896.47	2837133.91	
3157.00	0.88	81.91	3155.99	-7.45	4.24	0.17	4.86	2142896.55	2837134.83	
3219.00	1.00	83.04	3217.98	-7.31	5.25	0.20	5.85	2142896.69	2837135.84	
3281.00	1.00	71.79	3279.97	-7.08	6.30	0.32	6.88	2142896.93	2837136.89	
3343.00	0.88	32.04	3341.96	-6.51	7.07	1.05	7.59	2142897.50	2837137.65	
3406.00	0.69	29.91	3404.95	-5.77	7.51	0.31	7.98	2142898.25	2837138.09	
3467.00	0.86	17.99	3465.95	-5.01	7.84	0.38	8.23	2142899.00	2837138.41	
3530.00	1.19	351.66	3528.94	-3.92	7.89	0.90	8.19	2142900.10	2837138.46	
3592.00	1.75	339.54	3590.92	-2.39	7.46	1.03	7.64	2142901.62	2837138.03	
3654.00	1.75	343.66	3652.89	-0.60	6.87	0.20	6.89	2142903.41	2837137.43	
3716.00	1.94	341.04	3714.86	1.30	6.26	0.34	6.13	2142905.31	2837136.81	
3778.00	1.71	346.24	3776.83	3.19	5.70	0.46	5.41	2142907.20	2837136.24	
3840.00	1.50	359.41	3838.80	4.90	5.47	0.68	5.04	2142908.91	2837136.01	
3902.00	1.44	3.41	3900.78	6.49	5.51	0.19	4.94	2142910.50	2837136.04	
3964.00	1.19	338.79	3962.77	7.87	5.32	0.99	4.64	2142911.88	2837135.85	
4026.00	1.10	322.48	4024.75	8.94	4.73	0.54	3.95	2142912.94	2837135.25	
4088.00	1.38	287.29	4086.74	9.64	3.65	1.28	2.82	2142913.63	2837134.17	
4150.00	1.31	266.54	4148.72	9.82	2.23	0.79	1.39	2142913.81	2837132.75	
4212.00	1.44	260.79	4210.70	9.65	0.75	0.31	-0.07	2142913.63	2837131.27	
4275.00	1.69	245.41	4273.68	9.14	-0.87	0.77	-1.64	2142913.11	2837129.65	
4337.00	2.25	242.79	4335.64	8.20	-2.78	0.91	-3.47	2142912.17	2837127.74	
4399.00	2.08	229.43	4397.60	6.91	-4.72	0.86	-5.29	2142910.87	2837125.81	
4461.00	1.94	222.29	4459.56	5.40	-6.28	0.46	-6.72	2142909.36	2837124.25	
4523.00	2.13	208.29	4521.52	3.61	-7.54	0.86	-7.81	2142907.56	2837123.01	
4585.00	2.00	204.04	4583.48	1.61	-8.52	0.32	-8.63	2142905.56	2837122.03	
4648.00	1.75	185.04	4646.45	-0.35	-9.05	1.06	-8.99	2142903.59	2837121.50	
4711.00	1.75	164.91	4709.42	-2.24	-8.89	0.97	-8.67	2142901.71	2837121.68	
4773.00	1.56	164.54	4771.40	-3.97	-8.42	0.31	-8.05	2142899.98	2837122.16	
4832.00	1.38	174.29	4830.38	-5.45	-8.13	0.52	-7.64	2142898.50	2837122.45	
4863.00	1.17	184.63	4861.37	-6.14	-8.12	1.00	-7.57	2142897.81	2837122.46	
4865.00	1.14	186.76	4863.37	-6.18	-8.12	2.49	-7.57	2142897.77	2837122.46	Top Liner 7"
4885.00	1.00	212.54	4883.36	-6.52	-8.24	2.49	-7.66	2142897.43	2837122.34	
4916.00	1.29	244.41	4914.36	-6.90	-8.70	2.22	-8.09	2142897.05	2837121.88	



Weatherford International Ltd.

WFT Survey Report X & Y's

**Weatherford**

Company: WILLIAMS PRODUCTION
Field: RIO ARRIBA CO. NM (NAD 83 NM W Zone)
Site: Rosa Unit 634B
Well: Rosa Unit 634B
Wellpath: 1

Date: 7/20/2010 Time: 15:27:16 Page: 3
Co-ordinate(NE) Reference: Well: Rosa Unit 634B; True North
Vertical (TVD) Reference: SITE 6278.5
Section (VS) Reference: Well (0.00N,0.00E,94.86Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	DLS deg/100ft	VS ft	MapN ft	MapE ft	Comment
4947.00	1.88	251.91	4945.35	-7.21	-9.50	2.01	-8.85	2142896.73	2837121.09	
4978.00	3.25	254.91	4976.32	-7.60	-10.83	4.44	-10.15	2142896.34	2837119.76	
5009.00	4.69	250.41	5007.24	-8.25	-12.87	4.75	-12.13	2142895.68	2837117.72	
5040.00	5.50	252.16	5038.12	-9.13	-15.48	2.66	-14.65	2142894.79	2837115.11	
5071.00	6.68	250.62	5068.94	-10.18	-18.60	3.84	-17.67	2142893.72	2837112.00	
5102.00	8.06	249.16	5099.69	-11.55	-22.33	4.49	-21.27	2142892.34	2837108.27	
5133.00	9.63	251.62	5130.32	-13.15	-26.82	5.21	-25.61	2142890.73	2837103.79	
5164.00	11.88	250.41	5160.77	-15.03	-32.29	7.29	-30.90	2142888.82	2837098.33	
5195.00	14.13	249.04	5190.97	-17.46	-38.83	7.33	-37.21	2142886.37	2837091.80	
5226.00	16.75	249.04	5220.85	-20.41	-46.54	8.45	-44.64	2142883.38	2837084.10	
5257.00	19.12	250.94	5250.34	-23.66	-55.51	7.87	-53.30	2142880.09	2837075.15	
5288.00	20.88	248.66	5279.47	-27.33	-65.45	6.21	-62.90	2142876.38	2837065.22	
5319.00	22.31	246.16	5308.30	-31.72	-75.98	5.48	-73.02	2142871.95	2837054.70	
5350.00	24.09	244.39	5336.79	-36.84	-87.07	6.17	-83.63	2142866.79	2837043.64	
5381.00	26.39	243.31	5364.83	-42.67	-98.93	7.57	-94.96	2142860.91	2837031.80	
5412.00	28.81	242.91	5392.30	-49.16	-111.74	7.83	-107.17	2142854.36	2837019.02	
5443.00	30.69	243.29	5419.21	-56.12	-125.46	6.09	-120.25	2142847.35	2837005.33	
5474.00	31.81	242.54	5445.71	-63.44	-139.77	3.82	-133.89	2142839.97	2836991.04	
5505.00	32.91	242.79	5471.90	-71.06	-154.51	3.57	-147.93	2142832.29	2836976.33	
5536.00	31.81	240.16	5498.08	-78.98	-169.09	5.76	-161.79	2142824.31	2836961.79	
5567.00	30.38	237.04	5524.63	-87.31	-182.76	6.95	-174.70	2142815.93	2836948.16	
5598.00	30.39	233.42	5551.38	-96.25	-195.63	5.91	-186.77	2142806.93	2836935.32	
5629.00	31.63	232.66	5577.94	-105.85	-208.39	4.19	-198.67	2142797.28	2836922.60	
5660.00	32.94	233.91	5604.15	-115.75	-221.67	4.74	-211.05	2142787.33	2836909.36	
5691.00	33.13	235.41	5630.14	-125.52	-235.45	2.71	-223.96	2142777.50	2836895.62	
5722.00	33.56	236.41	5656.04	-135.07	-249.56	2.25	-237.21	2142767.89	2836881.55	
5753.00	32.19	232.91	5682.07	-144.79	-263.29	7.55	-250.06	2142758.11	2836867.86	
5784.00	30.55	229.12	5708.54	-154.93	-275.84	8.27	-261.70	2142747.92	2836855.36	
5816.00	29.00	226.11	5736.32	-165.63	-287.58	6.73	-272.50	2142737.18	2836843.66	
5847.00	26.88	220.54	5763.71	-176.17	-297.55	10.84	-281.54	2142726.60	2836833.73	
5878.00	24.75	216.04	5791.62	-186.75	-305.92	9.33	-288.99	2142715.99	2836825.40	
5909.00	23.00	210.04	5819.97	-197.24	-312.78	9.65	-294.92	2142705.47	2836818.59	
5940.00	21.75	204.66	5848.64	-207.70	-318.20	7.74	-299.45	2142694.98	2836813.20	
5971.00	20.44	199.70	5877.56	-218.02	-322.43	7.14	-302.78	2142684.65	2836809.02	
6002.00	18.69	193.66	5906.77	-227.94	-325.42	8.62	-304.92	2142674.71	2836806.07	
6034.00	17.63	186.04	5937.18	-237.75	-327.15	8.12	-305.81	2142664.90	2836804.38	
6057.00	16.52	182.79	5959.17	-244.48	-327.67	6.36	-305.76	2142658.17	2836803.89	
6096.00	15.27	174.16	5996.68	-255.13	-327.42	6.85	-304.61	2142647.52	2836804.18	
6104.00	14.96	172.96	6004.41	-257.20	-327.18	5.47	-304.20	2142645.45	2836804.42	9 5/8"
6127.00	14.12	169.24	6026.67	-262.90	-326.30	5.47	-302.83	2142639.75	2836805.34	
6159.00	14.03	155.95	6057.72	-270.28	-323.99	10.08	-299.90	2142632.38	2836807.68	
6189.00	14.07	144.97	6086.83	-276.59	-320.41	8.87	-295.80	2142626.09	2836811.28	
6221.00	14.75	138.41	6117.82	-282.82	-315.47	5.52	-290.36	2142619.87	2836816.24	
6252.00	15.00	139.29	6147.78	-288.81	-310.24	1.09	-284.63	2142613.90	2836821.50	
6283.00	14.69	135.79	6177.75	-294.67	-304.88	3.06	-278.79	2142608.07	2836826.88	
6314.00	14.44	130.54	6207.75	-300.00	-299.20	4.33	-272.68	2142602.76	2836832.58	
6346.00	14.88	123.16	6238.71	-304.84	-292.73	5.99	-265.83	2142597.94	2836839.07	
6377.00	15.25	122.79	6268.65	-309.23	-285.97	1.23	-258.72	2142593.59	2836845.85	
6408.00	16.56	119.79	6298.46	-313.63	-278.71	4.99	-251.11	2142589.21	2836853.13	
6439.00	17.83	118.06	6328.08	-318.06	-270.69	4.42	-242.74	2142584.82	2836861.17	
6470.00	18.50	115.04	6357.53	-322.37	-262.04	3.73	-233.76	2142580.54	2836869.83	
6501.00	20.00	113.91	6386.80	-326.61	-252.74	4.99	-224.13	2142576.35	2836879.15	
6532.00	21.69	112.29	6415.77	-330.93	-242.59	5.76	-213.66	2142572.07	2836889.32	



Weatherford International Ltd.

WFT Survey Report X & Y's



Weatherford

Company: WILLIAMS PRODUCTION	Date: 7/20/2010	Time: 15:27:16	Page: 4
Field: RIO ARRIBA CO. NM (NAD 83 NM W Zone)	Co-ordinate(NE) Reference:	Well: Rosa Unit 634B, True North	
Site: Rosa Unit 634B	Vertical (TVD) Reference:	SITE 6278.5	
Well: Rosa Unit 634B	Section (VS) Reference:	Well (0.00N,0.00E,94.86Azi)	
Wellpath: 1	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	DLS deg/100ft	VS ft	MapN ft	MapE ft	Comment
6563.00	23.94	109.66	6444.34	-335.22	-231.37	7.97	-202.11	2142567.82	2836900.56	
6594.00	25.44	109.54	6472.51	-339.56	-219.17	4.84	-189.58	2142563.53	2836912.78	
6625.00	27.00	109.04	6500.31	-344.08	-206.24	5.08	-176.32	2142559.06	2836925.72	
6656.00	29.22	107.29	6527.66	-348.63	-192.36	7.64	-162.11	2142554.57	2836939.62	
6687.00	31.63	106.66	6554.39	-353.21	-177.35	7.84	-146.76	2142550.05	2836954.65	
6718.00	31.94	105.66	6580.74	-357.75	-161.66	1.97	-130.74	2142545.57	2836970.36	
6749.00	32.94	104.29	6606.90	-362.05	-145.60	4.00	-114.37	2142541.34	2836986.44	
6780.00	34.49	102.39	6632.69	-366.01	-128.86	6.05	-97.36	2142537.45	2837003.19	
6811.00	37.75	101.79	6657.72	-369.83	-110.99	10.58	-79.23	2142533.70	2837021.08	
6842.00	42.06	103.66	6681.50	-374.23	-91.60	14.43	-59.54	2142529.38	2837040.48	
6873.00	46.38	104.04	6703.71	-379.40	-70.62	13.96	-38.19	2142524.29	2837061.49	
6904.00	51.26	105.45	6724.12	-385.35	-48.06	16.11	-15.21	2142518.44	2837084.07	
6936.00	55.92	106.20	6743.11	-392.38	-23.30	14.68	10.06	2142511.51	2837108.86	
6967.00	59.31	107.04	6759.71	-399.87	1.78	11.17	35.69	2142504.13	2837133.97	
6997.00	61.19	106.54	6774.59	-407.39	26.72	6.43	61.17	2142496.71	2837158.94	
7028.00	62.88	105.91	6789.13	-415.04	53.01	5.74	88.01	2142489.17	2837185.26	
7060.00	64.15	104.45	6803.40	-422.53	80.65	5.69	116.19	2142481.78	2837212.93	
7091.00	65.44	103.16	6816.60	-429.22	107.89	5.61	143.90	2142475.20	2837240.20	
7122.00	66.38	101.79	6829.26	-435.34	135.52	5.05	171.94	2142469.20	2837267.85	
7153.00	67.31	100.54	6841.45	-440.85	163.48	4.77	200.27	2142463.80	2837295.84	
7184.00	68.44	99.41	6853.12	-445.83	191.76	4.97	228.88	2142458.94	2837324.14	
7215.00	70.25	98.29	6864.06	-450.29	220.42	6.75	257.81	2142454.60	2837352.82	
7246.00	71.63	97.13	6874.18	-454.22	249.46	5.69	287.08	2142450.79	2837381.87	
7277.00	73.00	96.54	6883.60	-457.73	278.78	4.78	316.59	2142447.39	2837411.21	
7346.00	75.60	97.41	6902.27	-465.80	344.71	3.96	382.97	2142439.59	2837477.17	Btm Liner 7"
7374.00	76.66	97.76	6908.98	-469.39	371.65	3.96	410.12	2142436.11	2837504.13	
7405.00	76.48	95.96	6916.18	-472.99	401.59	5.68	440.25	2142432.63	2837534.07	
7436.00	77.28	94.81	6923.21	-475.83	431.65	4.44	470.44	2142429.92	2837564.14	
7467.00	78.00	94.29	6929.85	-478.23	461.83	2.84	500.72	2142427.65	2837594.34	
7498.00	79.13	93.41	6936.00	-480.27	492.15	4.59	531.10	2142425.73	2837624.66	
7529.00	80.25	92.41	6941.54	-481.81	522.61	4.81	561.58	2142424.31	2837655.13	
7560.00	81.97	91.82	6946.33	-482.94	553.21	5.86	592.17	2142423.30	2837685.74	
7591.00	86.44	90.91	6949.46	-483.68	584.04	14.71	622.95	2142422.69	2837716.56	
7647.00	95.11	91.37	6948.71	-484.79	639.97	15.50	678.77	2142421.81	2837772.50	
7679.00	95.44	91.54	6945.77	-485.60	671.82	1.16	710.58	2142421.13	2837804.36	
7710.00	95.44	91.91	6942.83	-486.53	702.67	1.19	741.39	2142420.33	2837835.21	
7742.00	95.13	92.79	6939.88	-487.84	734.50	2.90	773.23	2142419.15	2837867.05	
7773.00	95.00	93.04	6937.14	-489.41	765.34	0.91	804.09	2142417.71	2837897.89	
7804.00	94.23	93.68	6934.65	-491.22	796.19	3.23	834.98	2142416.02	2837928.75	
7835.00	93.06	93.79	6932.68	-493.23	827.06	3.79	865.91	2142414.13	2837959.62	
7866.00	92.19	94.04	6931.26	-495.35	857.96	2.92	896.87	2142412.14	2837990.53	
7897.00	91.13	93.66	6930.36	-497.43	888.87	3.63	927.85	2142410.19	2838021.45	
7928.00	89.75	93.41	6930.12	-499.34	919.81	4.52	958.84	2142408.41	2838052.40	
7959.00	89.54	93.32	6930.31	-501.16	950.76	0.74	989.83	2142406.71	2838083.35	
7990.00	89.31	93.16	6930.62	-502.91	981.71	0.90	1020.82	2142405.09	2838114.31	
8017.00	89.24	94.10	6930.97	-504.62	1008.65	3.49	1047.81	2142403.49	2838141.26	
8048.00	89.94	91.04	6931.19	-506.01	1039.61	10.13	1078.78	2142402.22	2838172.23	
8079.00	89.13	87.16	6931.44	-505.52	1070.60	12.79	1109.61	2142402.84	2838203.22	
8111.00	89.00	86.54	6931.96	-503.76	1102.55	1.98	1141.30	2142404.73	2838235.15	
8142.00	91.88	87.79	6931.72	-502.23	1133.51	10.13	1172.01	2142406.39	2838266.11	
8173.00	93.44	88.04	6930.29	-501.10	1164.45	5.10	1202.75	2142407.64	2838297.05	
8204.00	93.41	87.98	6928.43	-500.03	1195.38	0.22	1233.47	2142408.84	2838327.97	



Weatherford International Ltd.

WFT Survey Report X & Y's



Weatherford

Company: WILLIAMS PRODUCTION Date: 7/20/2010 Time: 15:27:16 Page: 5
Field: RIO ARRIBA CO. NM (NAD 83 NM W/Zone) Co-ordinate(NE) Reference: Well: Rosa Unit 634B; True North
Site: Rosa Unit 634B Vertical (TVD) Reference: SITE 6278.5
Well: Rosa Unit 634B Section (VS) Reference: Well (0.00N,0.00E,94.86Azi)
Wellpath: 1 Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	DLS deg/100ft	VS ft	MapN ft	MapE ft	Comment
8236.00	93.31	88.04	6926.56	-498.92	1227.30	0.36	1265.19	2142410.08	2838359.89	
8267.00	92.63	89.54	6924.95	-498.27	1258.25	5.31	1295.97	2142410.86	2838390.84	
8298.00	92.69	89.79	6923.51	-498.09	1289.22	0.83	1326.81	2142411.17	2838421.80	
8329.00	90.31	89.79	6922.70	-497.97	1320.21	7.68	1357.68	2142411.41	2838452.79	
8392.00	91.50	89.18	6921.71	-497.41	1383.20	2.12	1420.39	2142412.23	2838515.77	
8454.00	91.00	88.66	6920.35	-496.24	1445.17	1.16	1482.04	2142413.65	2838577.74	
8516.00	91.94	88.41	6918.76	-494.65	1507.13	1.57	1543.64	2142415.49	2838639.69	
8578.00	91.51	88.09	6916.90	-492.76	1569.07	0.86	1605.20	2142417.64	2838701.63	
8640.00	93.06	88.91	6914.42	-491.14	1631.00	2.83	1666.77	2142419.51	2838763.55	
8702.00	93.06	92.66	6911.11	-491.99	1692.89	6.04	1728.51	2142418.92	2838825.44	
8764.00	91.69	92.41	6908.54	-494.73	1754.78	2.25	1790.41	2142416.43	2838887.34	
8826.00	90.48	91.17	6907.37	-496.66	1816.73	2.79	1852.31	2142414.75	2838949.30	
8888.00	91.88	89.79	6906.09	-497.18	1878.71	3.17	1914.11	2142414.48	2839011.29	
8950.00	91.31	89.41	6904.37	-496.75	1940.69	1.10	1975.82	2142415.17	2839073.26	
9012.00	90.16	89.27	6903.57	-496.04	2002.68	1.87	2037.53	2142416.13	2839135.24	
9074.00	90.50	89.54	6903.22	-495.39	2064.67	0.70	2099.25	2142417.03	2839197.24	
9136.00	90.47	88.73	6902.69	-494.46	2126.66	1.31	2160.93	2142418.22	2839259.22	
9199.00	90.50	88.91	6902.16	-493.16	2189.65	0.29	2223.58	2142419.77	2839322.20	
9261.00	91.06	88.79	6901.31	-491.91	2251.63	0.92	2285.23	2142421.27	2839384.18	
9322.00	91.44	89.29	6899.98	-490.89	2312.61	1.03	2345.90	2142422.54	2839445.15	
9384.00	91.44	89.12	6898.43	-490.03	2374.58	0.27	2407.58	2142423.66	2839507.12	
9446.00	92.00	89.54	6896.56	-489.31	2436.55	1.13	2469.26	2142424.63	2839569.08	
9508.00	90.56	89.41	6895.18	-488.74	2498.53	2.33	2530.97	2142425.45	2839631.06	
9570.00	90.63	87.66	6894.54	-487.15	2560.50	2.82	2592.59	2142427.29	2839693.03	
9633.00	92.95	87.28	6892.57	-484.38	2623.41	3.73	2655.03	2142430.33	2839755.92	
9695.00	93.25	87.66	6889.21	-481.64	2685.26	0.78	2716.43	2142433.31	2839817.76	
9758.00	93.56	89.16	6885.47	-479.90	2748.12	2.43	2778.91	2142435.32	2839880.61	
9821.00	93.50	89.29	6881.59	-479.05	2810.99	0.23	2841.49	2142436.42	2839943.48	
9883.00	94.38	91.79	6877.33	-479.63	2872.84	4.27	2903.16	2142436.09	2840005.33	
9945.00	93.82	93.42	6872.90	-482.44	2934.61	2.77	2964.95	2142433.54	2840067.12	
9990.00	93.51	92.46	6870.02	-484.74	2979.46	2.24	3009.83	2142431.42	2840111.97	
10052.00	92.50	93.54	6866.77	-487.98	3041.29	2.38	3071.71	2142428.43	2840173.81	
10114.00	91.50	93.41	6864.61	-491.74	3103.14	1.63	3133.66	2142424.92	2840235.68	
10176.00	91.34	93.45	6863.07	-495.45	3165.01	0.27	3195.62	2142421.47	2840297.56	
10238.00	89.25	91.29	6862.75	-498.01	3226.95	4.85	3257.55	2142419.16	2840359.51	
10300.00	89.31	90.04	6863.53	-498.73	3288.94	2.02	3319.38	2142418.69	2840421.50	
10362.00	91.18	90.43	6863.27	-498.99	3350.93	3.08	3381.17	2142418.69	2840483.50	
10423.00	90.19	89.41	6862.54	-498.90	3411.93	2.33	3441.94	2142419.03	2840544.49	
10485.00	90.75	87.54	6862.03	-497.25	3473.90	3.15	3503.55	2142420.93	2840606.46	
10547.00	91.06	90.04	6861.05	-495.94	3535.87	4.06	3565.19	2142422.49	2840668.42	
10609.00	90.65	89.65	6860.13	-495.77	3597.86	0.91	3626.95	2142422.91	2840730.42	
10671.00	90.25	90.29	6859.64	-495.74	3659.86	1.22	3688.72	2142423.20	2840792.41	
10734.00	91.56	89.79	6858.64	-495.78	3722.85	2.23	3751.48	2142423.41	2840855.40	
10796.00	91.06	88.91	6857.23	-495.08	3784.83	1.63	3813.18	2142424.37	2840917.38	
10859.00	91.47	88.78	6855.83	-493.81	3847.80	0.68	3875.82	2142425.89	2840980.34	
10921.00	90.00	88.91	6855.04	-492.56	3909.78	2.38	3937.47	2142427.40	2841042.32	
10983.00	90.63	92.66	6854.70	-493.41	3971.77	6.13	3999.30	2142426.80	2841104.30	
11045.00	90.97	91.64	6853.83	-495.74	4033.72	1.73	4061.22	2142424.73	2841166.26	
11107.00	91.56	91.41	6852.46	-497.39	4095.68	1.02	4123.10	2142423.33	2841228.23	
11169.00	90.95	90.25	6851.11	-498.28	4157.65	2.11	4184.93	2142422.69	2841290.21	
11231.00	90.31	88.91	6850.42	-497.83	4219.65	2.40	4246.66	2142423.40	2841352.20	
11293.00	91.88	87.91	6849.24	-496.11	4281.61	3.00	4308.26	2142425.37	2841414.16	
11355.00	92.88	88.91	6846.66	-494.39	4343.53	2.28	4369.81	2142427.34	2841476.07	



Weatherford International Ltd.

WFT Survey Report X & Y's

**Weatherford**

Company: WILLIAMS PRODUCTION	Date: 7/20/2010	Time: 15:27:16	Page: 6
Field: RIO ARriba CO NM (NAD 83 NM W Zone)	Co-ordinate(NE) Reference: Well: Rosa Unit 634B, True North		
Site: Rosa Unit 634B	Vertical (TVD) Reference: SITE 6278.5		
Well: Rosa Unit 634B	Section (VS) Reference: Well (0.00N,0.00E,94.86Azi)		
Wellpath: 1	Survey Calculation Method: Minimum Curvature	Db: Sybase	

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	DLS deg/100ft	VS ft	MapN ft	MapE ft	Comment
11417.00	92.58	88.67	6843.71	-493.08	4405.45	0.62	4431.39	2142428.90	2841537.98	
11479.00	95.13	87.91	6839.54	-491.24	4467.27	4.29	4492.84	2142431.00	2841599.80	
11534.00	95.56	87.79	6834.42	-489.18	4522.00	0.81	4547.19	2142433.28	2841654.51	
11596.00	95.56	87.79	6828.41	-486.80	4583.66	0.00	4608.43	2142435.91	2841716.16	
11658.00	94.13	90.18	6823.18	-485.71	4645.42	4.48	4669.88	2142437.25	2841777.92	
11720.00	94.00	91.04	6818.78	-486.37	4707.26	1.40	4731.55	2142436.85	2841839.76	
11782.00	90.50	91.29	6816.35	-487.63	4769.19	5.66	4793.36	2142435.84	2841901.70	
11844.00	89.76	91.19	6816.21	-488.97	4831.18	1.20	4855.24	2142434.75	2841963.69	
11906.00	89.44	90.16	6816.64	-489.70	4893.17	1.74	4917.07	2142434.28	2842025.68	
11968.00	89.00	89.04	6817.48	-489.27	4955.16	1.94	4978.80	2142434.96	2842087.67	
12031.00	89.20	89.66	6818.47	-488.55	5018.15	1.03	5041.50	2142435.93	2842150.66	
12093.00	90.50	88.79	6818.64	-487.72	5080.14	2.52	5103.20	2142437.03	2842212.65	
12155.00	92.44	87.54	6817.04	-485.73	5142.08	3.72	5164.75	2142439.26	2842274.58	
12217.00	92.70	90.02	6814.26	-484.41	5204.00	4.02	5226.34	2142440.83	2842336.49	
12280.00	91.94	90.16	6811.71	-484.51	5266.95	1.23	5289.07	2142440.99	2842399.44	
12342.00	93.13	91.54	6808.97	-485.43	5328.88	2.94	5350.85	2142440.33	2842461.38	
12404.00	92.84	91.30	6805.74	-486.96	5390.78	0.61	5412.65	2142439.05	2842523.28	
12466.00	92.13	91.16	6803.05	-488.29	5452.70	1.17	5474.47	2142437.97	2842585.21	
12528.00	92.06	91.16	6800.79	-489.55	5514.65	0.11	5536.30	2142436.97	2842647.16	
12590.00	91.96	91.29	6798.61	-490.87	5576.60	0.26	5598.14	2142435.90	2842709.11	
12653.00	91.94	91.04	6796.47	-492.15	5639.55	0.40	5660.97	2142434.87	2842772.07	
12715.00	91.50	91.91	6794.61	-493.75	5701.50	1.57	5722.83	2142433.53	2842834.02	
12776.00	91.31	91.91	6793.11	-495.78	5762.45	0.31	5783.73	2142431.75	2842894.98	
12838.00	91.31	91.91	6791.70	-497.85	5824.40	0.00	5845.63	2142429.94	2842956.94	
12865.00	91.29	91.54	6791.08	-498.66	5851.38	1.37	5872.59	2142429.23	2842983.92	Last Wft Svy
12913.00	91.29	91.54	6790.00	-499.95	5899.35	0.00	5920.49	2142428.14	2843031.90	Proj. To Blt

Annotation

MD ft	TVD ft	
546.00	545.85	First Wft Svy
12865.00	6791.08	Last Wft Svy
12913.00	6790.00	Proj. To Blt