

**McVAY DRILLING COMPANY**

P.O. Box 2450
Hobbs, New Mexico 88241
(575) 397-3311
FAX: 39-DRILL

SUR: A-03-15s-32e, 660/N & 175/E
BHL: D-03-15s-32e, 642/N & 4937/E
API # 30-025-39523

Well Name and Num: Red Raider 3 State #1H
Location: Sec 3, T15S, R32E
Operator: Manzano, LLC
Drilling Contractor: McVay Drilling Company

The undersigned certifies that he is an authorized representative of the drilling contractor who drilled the above described well and that he has conducted deviation tests and obtained the following results:

<u>Degrees @</u>	<u>Depth</u>	<u>Degrees @</u>	<u>Depth</u>	<u>Degrees @</u>	<u>Depth</u>	<u>Degrees @</u>	<u>Depth</u>
0.15	200	3.19	3992	2.50	8596	87.09	11398
0.21	435	3.42	4130	1.91	8601	88.58	11493
0.65	720	2.97	4225	5.28	8632	86.06	11685
0.53	1070	2.89	4379	13.51	8696	90.37	12005
0.59	1294	1.99	4565	39.29	8856	92.95	12260
0.88	1583	1.92	4842	60.73	8983	93.02	12356
0.66	1871	1.32	5121	81.99	9206	89.88	12580
2.50	2160	1.54	5400	92.41	9428	90.31	12738
2.85	2320	0.73	5710	92.96	9485	90.62	12962
2.28	2405	0.53	5988	92.78	9581	91.67	13153
1.53	2503	0.25	6484	86.21	9804	90.06	13533
1.29	2596	0.44	6978	91.48	10218	89.63	13563
1.49	2723	0.48	7466	92.92	10374	89.26	13595
1.11	2940	1.68	7964	87.41	10601		
0.80	3126	1.63	8119	90.08	10856		
2.13	3561	1.57	8619	92.01	10951		
3.11	3847	3.50	9143	89.01	11174		

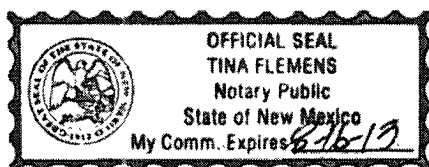
Drilling Contractor McVay Drilling Company

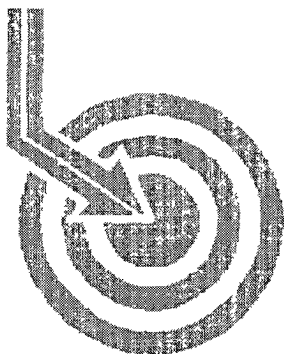
By: H. H. [Signature]

Subscribed and sworn to before me this 24th day of November, 2009

Tina Flemens
Notary Public

My Commission Expires: 8-16-12 Lea County, New Mexico





Scientific Drilling

MANZANO OIL CORP.

Field: Tulk
Site: Lea County, NM
Well: Red Raider 3 State #1H
Wellpath: VH - Job #32K1009463
Survey: 11/01/09

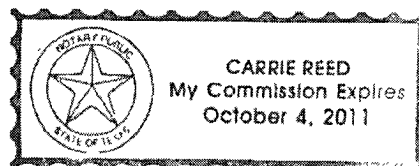
SUR: A-03-15s-32e, 660/N & 175/E
BHL: D-03-15s-32e, 642/N & 4937/E
API # 30-025-39523

This survey is correct to the best of my knowledge
and is supported by actual field data.

.....Leah Carter.....Company Representative

Notorized this date 5th of December, 2009.

Carrie Reed
Notary Signature
County of Midland
State of Texas





Scientific Drilling International Survey Report

Company: MANZANO OIL CORP. Date: 11/05/2009 Time: 15:26:29 Page: 1
Field: Tulk Co-ordinate(NE) Reference: Site: Lea County, NM, Grid North
Site: Lea County, NM Vertical (TVD) Reference: SITE 0.0
Well: Red Raider 3 State #1H Section (VS) Reference: Well (0.00N,0.00E,270.00Azi)
Wellpath: VH - Job #32K1009463 Survey Calculation Method: Minimum Curvature Db: Sybase

Survey: 11/01/09 Start Date: 11/01/2009
KSRG 0'-8876'
Company: Scientific Drilling Internatio Engineer: Melendez/Rowe/Williams
Tool: Keeper/Keeper Gyro Tied-to: From Surface

Survey

MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	Chd ft	Chs deg
0.00	0.00	359.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.41	296.20	100.00	0.32	0.16	-0.32	0.41	0.36	296.20
200.00	0.27	305.87	200.00	0.83	0.45	-0.83	0.15	0.95	298.59
300.00	0.70	308.56	299.99	1.50	0.97	-1.50	0.43	1.79	302.94
400.00	0.90	304.39	399.98	2.63	1.80	-2.63	0.21	3.18	304.37
500.00	1.06	314.67	499.97	3.93	2.89	-3.93	0.24	4.88	306.32
600.00	1.07	318.89	599.95	5.20	4.24	-5.20	0.08	6.72	309.20
700.00	1.08	328.12	699.93	6.32	5.75	-6.32	0.17	8.54	312.30
800.00	1.07	331.46	799.92	7.26	7.37	-7.26	0.06	10.34	315.43
900.00	1.03	326.35	899.90	8.20	6.94	-8.20	0.10	12.13	317.45
1000.00	1.04	325.17	999.88	9.22	10.43	-9.22	0.02	13.92	318.52
1100.00	0.96	315.81	1099.87	10.32	11.78	-10.32	0.18	15.66	318.76
1200.00	0.84	312.91	1199.86	11.44	12.88	-11.44	0.13	17.23	318.37
1300.00	0.75	307.92	1299.85	12.50	13.78	-12.50	0.11	18.60	317.79
1400.00	0.71	280.56	1399.84	13.62	14.29	-13.62	0.35	19.74	316.38
1500.00	0.88	285.91	1499.83	14.97	14.62	-14.97	0.19	20.92	314.32
1600.00	0.85	312.26	1599.82	16.26	15.33	-16.26	0.40	22.34	313.31
1700.00	0.92	306.90	1699.81	17.45	16.31	-17.45	0.11	23.88	313.06
1800.00	0.78	316.66	1799.80	18.56	17.28	-18.56	0.20	25.36	312.97
1900.00	0.85	48.31	1899.79	18.49	18.29	-18.49	1.15	26.01	314.69
2000.00	0.80	45.62	1999.78	17.45	19.29	-17.45	0.05	26.02	317.87
2100.00	2.04	48.63	2099.75	15.62	20.96	-15.62	1.24	26.14	323.30
2200.00	2.56	56.00	2199.66	12.43	23.38	-12.43	0.60	26.48	332.00
2300.00	2.91	61.28	2299.55	8.35	25.85	-8.35	0.43	27.17	342.09
2400.00	2.24	60.40	2399.45	4.43	28.04	-4.43	0.67	28.38	351.02
2500.00	1.59	55.89	2499.39	1.58	29.78	-1.58	0.67	29.82	356.96
2600.00	1.56	59.90	2599.36	-0.75	31.24	0.75	0.11	31.25	1.37
2700.00	1.56	55.07	2699.32	-3.04	32.70	3.04	0.13	32.84	5.31
2800.00	1.32	63.81	2799.29	-5.19	33.99	5.19	0.32	34.38	8.68
2900.00	1.07	58.80	2899.26	-7.02	34.98	7.02	0.27	35.68	11.35
3000.00	1.05	60.21	2999.25	-8.62	35.92	8.62	0.03	36.94	13.49
3100.00	1.17	68.36	3099.23	-10.36	36.75	10.36	0.20	38.18	15.74
3200.00	1.45	82.17	3199.20	-12.56	37.30	12.56	0.42	39.36	18.61
3300.00	1.81	93.09	3299.16	-15.39	37.39	15.39	0.47	40.43	22.38
3400.00	1.86	98.32	3399.11	-18.57	37.07	18.57	0.17	41.46	26.62
3500.00	1.87	104.33	3499.06	-21.76	36.43	21.76	0.20	42.43	30.85
3600.00	2.16	113.01	3599.00	-25.08	35.29	25.08	0.42	43.29	35.40
3700.00	2.45	114.84	3698.92	-28.75	33.65	28.75	0.30	44.26	40.51
3800.00	2.94	121.18	3798.81	-32.88	31.43	32.88	0.57	45.49	46.30
3900.00	3.41	130.36	3898.65	-37.35	28.18	37.35	0.69	46.78	52.97
4000.00	3.03	140.77	3998.49	-41.28	24.20	41.28	0.70	47.85	59.62
4100.00	2.72	144.80	4098.37	-44.32	20.22	44.32	0.37	48.71	65.48
4200.00	2.66	145.30	4198.26	-47.01	16.37	47.01	0.06	49.78	70.80
4300.00	2.65	150.86	4298.15	-49.48	12.44	49.48	0.26	51.00	75.88
4400.00	2.43	151.50	4398.05	-51.59	8.56	51.59	0.22	52.30	80.58
4500.00	2.28	159.04	4497.97	-53.32	4.84	53.32	0.34	53.54	84.81
4600.00	2.21	166.54	4597.89	-54.48	1.11	54.48	0.30	54.49	88.64
4700.00	1.97	175.25	4697.83	-55.07	-2.48	55.07	0.40	55.13	92.58
4800.00	1.77	179.69	4797.77	-55.22	-5.74	55.22	0.25	55.52	95.93



Scientific Drilling International Survey Report

Company: MANZANO OIL CORP.	Date: 11/05/2009	Time: 15:26:29	Page: 2
Field: Tulk.	Co-ordinate(NE) Reference:	Site: Lea County, NM, Grid North	
Site: Lea County, NM	Vertical (TVD) Reference:	SITE 0.0	
Well: Red Raider 3 State #1H	Section (VS) Reference:	Well (0.00N,0.00E,270.00Azi)	
Wellpath: VH - Job #32K1009463	Survey Calculation Method:	Minimum Curvature	Db: Sybase

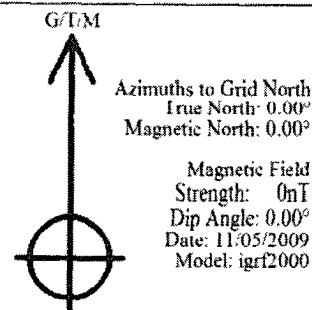
Survey

MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	ClsD ft	ClsA deg
4900.00	1.64	194.68	4897.73	-54.87	-8.67	54.87	0.46	55.55	98.98
5000.00	1.45	202.63	4997.69	-54.02	-11.22	54.02	0.29	55.17	101.73
5100.00	1.51	200.50	5097.66	-53.07	-13.62	53.07	0.08	54.79	104.40
5200.00	1.31	203.63	5197.63	-52.15	-15.90	52.15	0.21	54.52	106.96
5300.00	1.10	203.43	5297.61	-51.31	-17.83	51.31	0.21	54.32	109.16
5400.00	1.06	208.52	5397.59	-50.49	-19.52	50.49	0.10	54.13	111.14
5500.00	1.19	215.02	5497.57	-49.45	-21.19	49.45	0.18	53.80	113.19
5600.00	0.86	216.23	5597.55	-48.41	-22.64	48.41	0.33	53.44	115.07
5700.00	0.81	221.51	5697.54	-47.50	-23.78	47.50	0.09	53.12	116.59
5800.00	0.71	237.09	5797.53	-46.51	-24.64	46.51	0.23	52.63	117.92
5900.00	0.52	247.91	5897.53	-45.57	-25.15	45.57	0.22	52.05	118.90
6000.00	0.32	309.07	5997.53	-44.93	-25.15	44.93	0.46	51.49	119.23
6100.00	0.40	316.91	6097.52	-44.47	-24.71	44.47	0.09	50.88	119.06
6200.00	0.48	341.10	6197.52	-44.10	-24.06	44.10	0.20	50.24	118.62
6300.00	0.47	332.68	6297.52	-43.78	-23.30	43.78	0.07	49.59	118.03
6400.00	0.50	337.80	6397.51	-43.42	-22.53	43.42	0.05	48.92	117.43
6500.00	0.47	331.51	6497.51	-43.06	-21.77	43.06	0.06	48.25	116.82
6600.00	0.43	325.26	6597.51	-42.65	-21.10	42.65	0.06	47.59	116.32
6700.00	0.41	323.88	6697.51	-42.23	-20.50	42.23	0.02	46.94	115.90
6800.00	0.37	327.54	6797.50	-41.84	-19.94	41.84	0.05	46.35	115.48
6900.00	0.63	337.86	6897.50	-41.46	-19.16	41.46	0.27	45.68	114.80
7000.00	0.35	336.15	6997.50	-41.13	-18.37	41.13	0.28	45.05	114.07
7100.00	0.37	344.11	7097.49	-40.92	-17.78	40.92	0.05	44.62	113.49
7200.00	0.29	347.10	7197.49	-40.78	-17.22	40.78	0.08	44.27	112.90
7300.00	0.28	24.22	7297.49	-40.82	-16.75	40.82	0.18	44.12	112.32
7400.00	0.34	5.74	7397.49	-40.95	-16.24	40.95	0.12	44.05	111.83
7500.00	0.24	356.52	7497.49	-40.97	-15.73	40.97	0.11	43.88	111.01
7600.00	0.45	61.55	7597.49	-41.30	-15.34	41.30	0.41	44.06	110.37
7700.00	0.78	71.69	7697.48	-42.29	-14.94	42.29	0.35	44.85	109.45
7800.00	0.99	80.60	7797.47	-43.79	-14.58	43.79	0.25	46.15	108.42
7900.00	1.23	76.85	7897.45	-45.73	-14.19	45.73	0.30	47.88	107.23
8000.00	1.56	90.08	7997.42	-48.18	-13.93	48.18	0.43	50.15	106.13
8100.00	1.72	102.17	8097.38	-51.01	-14.25	51.01	0.38	52.86	105.61
8200.00	1.83	103.23	8197.33	-54.03	-14.93	54.03	0.11	56.05	105.45
8300.00	1.61	103.80	8297.28	-56.95	-15.63	56.95	0.22	59.05	105.35
8400.00	1.66	103.85	8397.24	-59.72	-16.32	59.72	0.05	61.91	105.28
8500.00	2.17	110.47	8497.19	-62.90	-17.32	62.90	0.56	65.24	105.40
8600.00	3.03	97.00	8597.08	-67.29	-18.31	67.29	1.05	69.74	105.22
8700.00	3.24	98.32	8696.93	-72.71	-19.04	72.71	0.22	75.16	104.67
8800.00	2.32	100.08	8796.82	-77.50	-19.80	77.50	0.92	79.99	104.33

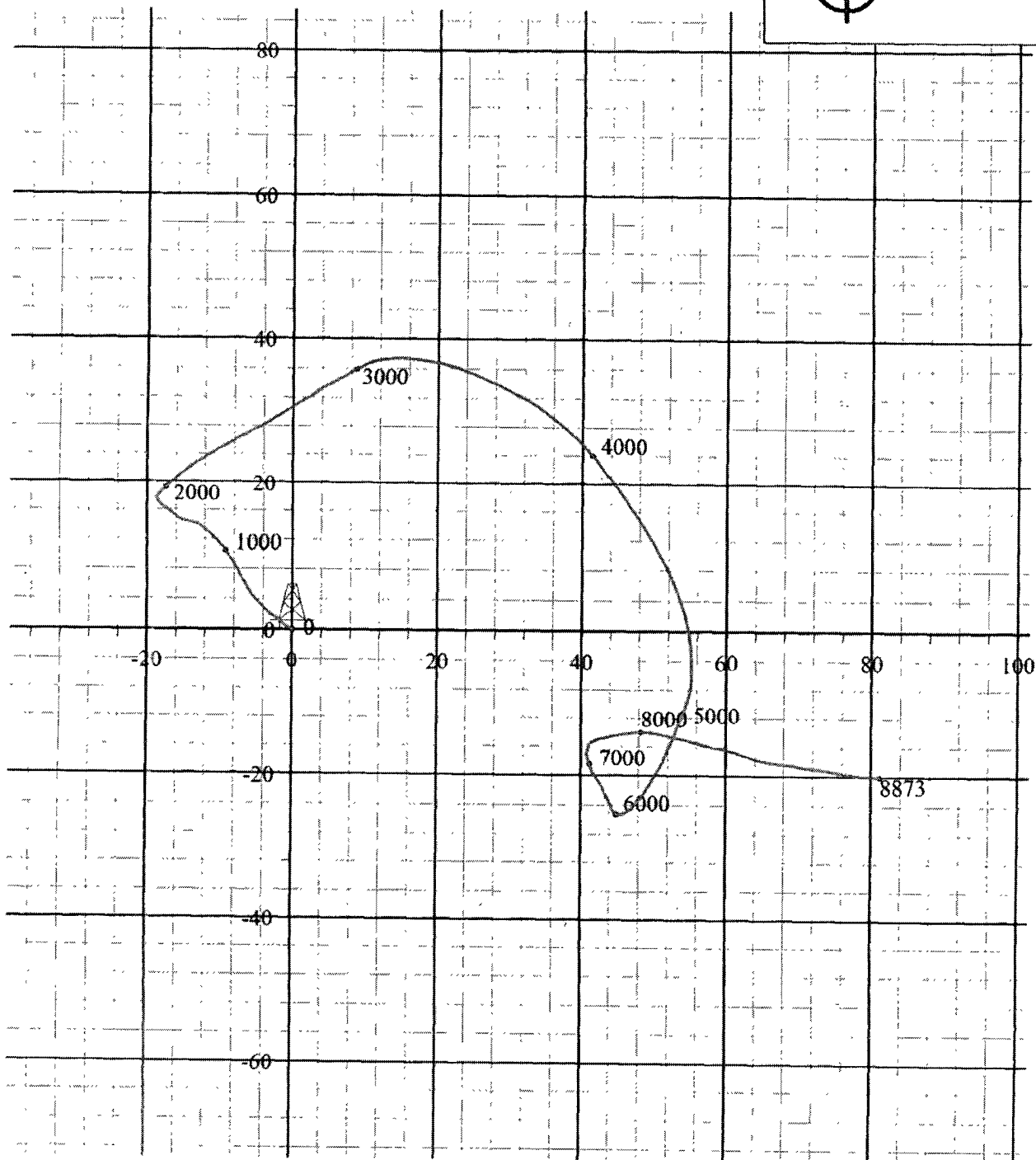


Scientific
Drilling

Field: Tulk
Site: Lea County, NM
Well: Red Raider 3 State #1H
Wellpath: VH - Job #32K1009463
Survey: 11/01/09



South(-)/North(+) [20ft/in]



West(-)/East(+) [20ft/in]

MANZANO, LLC

Red Raider State 3 #1H
Lea County, New Mexico

RECEIVED

MAR 18 2010

HOBBSOCD

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	8577.34	2.82	99.33	8574.45	-18.15	66.15	0.00	0.00	-66.05	
2	9198.58	90.40	269.94	8974.97	-21.80	-318.03	15.00	170.60	318.15	
3	13655.66	90.40	269.94	8943.85	-26.59	-4775.00	0.00	0.00	4775.07	P6

WELL DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
#1H	0.00	0.00	746981.60	694976.20	33°03'06.803N	103°41'49.204W	N/A

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
P6	8943.85	-26.59	-4775.00	746955.01	690201.20	33°03'06.822N	103°42'45.305W	Point

SITE DETAILS

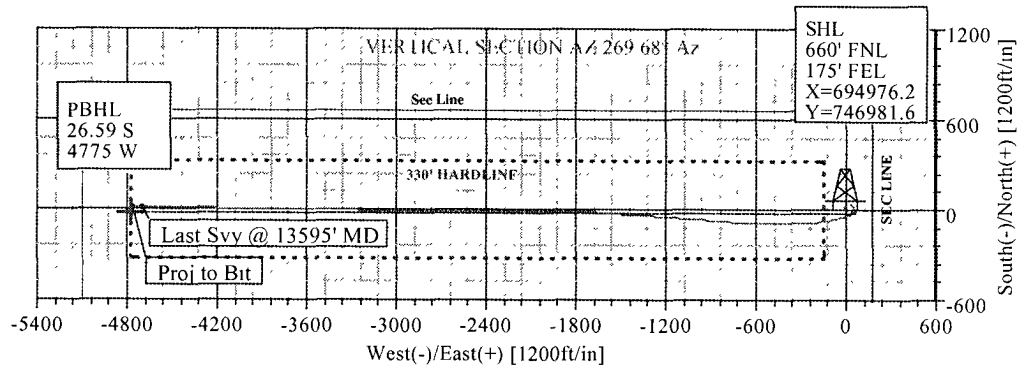
Red Raider State-3 #1H
660' FNL & 175' FEL
Site Centre Northing: 746981.60
Easting: 694976.20
Ground Level: 4293.00
Positional Uncertainty: 0.00
Convergence: 0.35

FIELD DETAILS

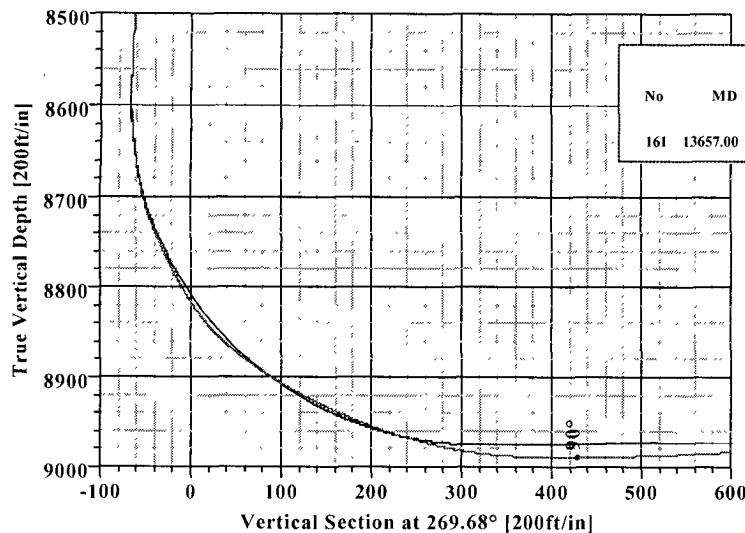
LEA CO. NM
Geodetic System: US State Plane Coordinate System 1927
Ellipsoid: NAD27 (Clarke 1866)
Zone: New Mexico, Eastern Zone
Magnetic Model: mgrf200510
System Datum: Mean Sea Level
Local North: Grid North

LEGEND

#1H, I Plan #6
WFT Svy

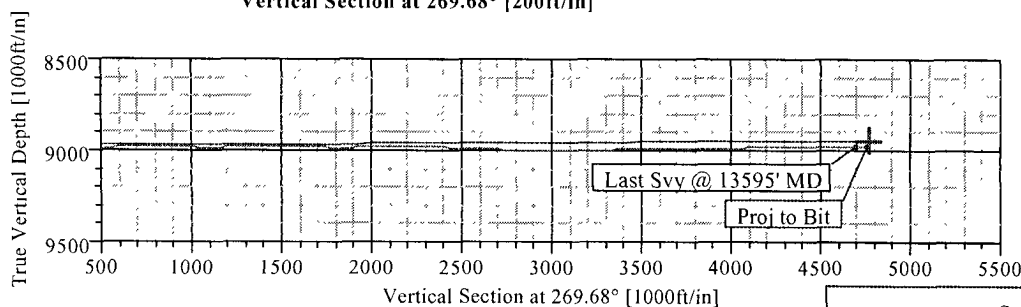
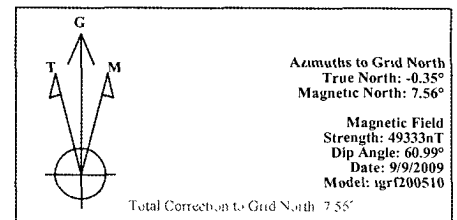


KB ELEV: 4312'
GR ELEV: 4293'



Proj to Bit Survey: WFT Svy (#1H/I)

No	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec
161	13657.00	90.06	271.91	8980.13	18.54	-4762.46	0.00	0.00	4762.28



Weatherford®

Survey: WFT Svy (#1H/I)

Created By: Lindsey Maddux

Date: 11/16/2009

Company: Manzano **Date:** 11/16/2009 **Time:** 08:06:41 **Page:** 1
Field: LEA CO. NM **Co-ordinate(NE) Reference:** Well: #1H, Grid.North
Site: Red Raider State-3 #1H **Vertical(FVD) Reference:** SITE 4312'0
Well: #1H **Section (VS) Reference:** Well (0.00N,0.00E;269 68Azi)
Wellpath: 1 **Survey Calculation Method:** Minimum Curvature **Db:** Sybase

Map System: US State Plane Coordinate System 1927
Geo Datum: NAD27 (Clarke 1866)
Sys Datum: Mean Sea Level

Map Zone: New Mexico, Eastern Zone
Coordinate System: Well Centre
Geomagnetic Model: iqr200510

Site Position:	Northing:	746981.60 ft	Latitude:	33	3	6 803 N
From: Map	Easting:	694976.20 ft	Longitude:	103	41	49.204 W
Position Uncertainty:	0.00 ft		North Reference:			Grid
Ground Level:	4293.00 ft		Grid Convergence:			0.35 deg

Well Position:	+N/-S	0.00 ft	Northing:	746981.60 ft	Latitude:	33	3	6 803 N
	+E/-W	0.00 ft	Easting :	694976.20 ft	Longitude:	103	41	49 204 W
Position Uncertainty:		0.00 ft						

Drilled From:	Surface
Tie-on Depth:	0 00 ft
Above System Datum:	Mean Sea Level
Declination:	7.91 deg
Mag Dip Angle:	60 99 deg
+E/-W	Direction
ft	deg
0 00	269 68

Company: Weatherford International, Inc
Tool: MWD,MWD - Standard

Engineer: Lindsey Maddux
Tied-to: From SDI 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
8500.00	2 17	110.47	8497.19	-17.32	62.90	-62.80	0.00	0.00	0.00	Tie on Gyro
8569.00	2.51	97.24	8566.13	-17.97	65.62	-65.52	0.92	0.49	-19.17	MWD
8601.00	1.91	224.83	8598.12	-18.44	65.94	-65.84	12.42	-1.87	398.72	MWD
8633.00	5.28	241.46	8630.05	-19.52	64.27	-64.16	10.92	10.53	51.97	MWD
8665.00	9.63	244.57	8661.77	-21.37	60.56	-60.44	13.65	13.59	9.72	MWD
8696.00	14.51	248.46	8692.08	-23.91	54.60	-54.46	15.95	15.74	12.55	MWD
8728.00	20.56	251.32	8722.58	-27.19	45.54	-45.39	19.09	18.91	8.94	MWD
8760.00	24.36	252.19	8752.15	-31.01	33.93	-33.75	11.92	11.87	2.72	MWD
8792.00	27.47	249.73	8780.93	-35.59	20.72	-20.52	10.28	9.72	-7.69	MWD
8824.00	33.01	251.14	8808.56	-40.96	5.53	-5.30	17.45	17.31	4.41	MWD
8856.00	39.29	252.77	8834.39	-46.79	-12.41	12.67	19.85	19.62	5.09	MWD
8888.00	47.21	253.86	8857.68	-53.06	-33.40	33.70	24.86	24.75	3.41	MWD
8919.00	53.37	253.50	8877.47	-59.77	-56.28	56.61	19.89	19.87	-1.16	MWD
8951.00	57.26	256.19	8895.68	-66.63	-81.67	82.04	13.98	12.16	8.41	MWD
8983.00	60.73	258.74	8912.17	-72.57	-108.44	108.84	12.81	10.84	7.97	MWD
9015.00	63.82	261.31	8927.05	-77.47	-136.33	136.76	11.99	9.66	8.03	MWD
9047.00	65.98	264.46	8940.63	-81.05	-165.08	165.53	11.18	6.75	9.84	MWD
9079.00	69.13	266.77	8952.85	-83.30	-194.56	195.03	11.89	9.84	7.22	MWD
9111.00	72.31	268.35	8963.41	-84.58	-224.74	225.21	10.98	9.94	4.94	MWD
9142.00	75.53	270.18	8972.00	-84.96	-254.52	254.99	11.83	10.39	5.90	MWD
9174.00	78.46	270.78	8979.20	-84.70	-285.69	286.16	9.34	9.16	1.87	MWD
9206.00	81.99	269.48	8984.63	-84.63	-317.22	317.69	11.74	11.03	-4.06	MWD
9230.00	84.88	268.63	8987.38	-85.02	-341.06	341.53	12.55	12.04	-3.54	MWD
9262.00	88.89	268.97	8989.11	-85.69	-373.00	373.47	12.58	12.53	1.06	MWD

Weatherford International, Inc.

Survey Report



Weatherford

Company: Manzano
Field: LEA CO. NM
Site: Red Raider State-3 #1H
Well: #1H
Wellpath: 1

Date: 11/16/2009 Time: 08:06:41 Page: 2
Co-ordinate(NE) Reference: Well, #1H, Grid North
Vertical (TVD) Reference: SITE 4312.0
Section (VS) Reference: Well (0.00N,0.00E,269.68Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

Survey: WFT Svy

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
9294.00	89.20	268.83	8989.65	-86.31	-404.99	405.46	1.06	0.97	-0.44	MWD
9326.00	90.31	268.35	8989.78	-87.09	-436.97	437.45	3.78	3.47	-1.50	MWD
9358.00	91.60	267.89	8989.25	-88.14	-468.95	469.44	4.28	4.03	-1.44	MWD
9390.00	92.16	268.69	8988.20	-89.10	-500.92	501.41	3.05	1.75	2.50	MWD
9421.00	92.41	269.15	8986.96	-89.68	-531.89	532.38	1.69	0.81	1.48	MWD
9453.00	92.72	269.88	8985.53	-89.95	-563.86	564.35	2.48	0.97	2.28	MWD
9485.00	92.96	271.32	8983.95	-89.62	-595.81	596.31	4.56	0.75	4.50	MWD
9517.00	93.27	272.42	8982.21	-88.57	-627.75	628.23	3.57	0.97	3.44	MWD
9549.00	93.45	272.56	8980.33	-87.19	-659.66	660.14	0.71	0.56	0.44	MWD
9581.00	92.78	272.66	8978.59	-85.73	-691.58	692.05	2.12	-2.09	0.31	MWD
9613.00	90.93	273.27	8977.56	-84.08	-723.52	723.98	6.09	-5.78	1.91	MWD
9645.00	90.80	273.41	8977.07	-82.21	-755.47	755.91	0.60	-0.41	0.44	MWD
9677.00	91.29	273.18	8976.49	-80.37	-787.41	787.84	1.69	1.53	-0.72	MWD
9709.00	90.25	273.53	8976.06	-78.50	-819.35	819.77	3.43	-3.25	1.09	MWD
9741.00	88.52	274.35	8976.40	-76.30	-851.27	851.68	5.98	-5.41	2.56	MWD
9773.00	87.04	274.88	8977.64	-73.73	-883.14	883.54	4.91	-4.62	1.66	MWD
9805.00	86.21	274.70	8979.53	-71.06	-914.97	915.36	2.65	-2.59	-0.56	MWD
9837.00	86.66	274.76	8981.52	-68.43	-946.80	947.17	1.42	1.41	0.19	MWD
9869.00	87.78	274.33	8983.07	-65.90	-978.66	979.02	3.75	3.50	-1.34	MWD
9901.00	88.33	274.20	8984.16	-63.52	-1010.56	1010.90	1.77	1.72	-0.41	MWD
9933.00	88.52	274.19	8985.04	-61.18	-1042.46	1042.78	0.59	0.59	-0.03	MWD
9964.00	88.52	274.19	8985.84	-58.91	-1073.37	1073.68	0.00	0.00	0.00	MWD
9996.00	89.51	273.90	8986.39	-56.66	-1105.28	1105.58	3.22	3.09	-0.91	MWD
10027.00	91.05	274.24	8986.23	-54.46	-1136.20	1136.49	5.09	4.97	1.10	MWD
10059.00	91.91	274.50	8985.41	-52.02	-1168.10	1168.37	2.81	2.69	0.81	MWD
10091.00	92.10	274.83	8984.29	-49.42	-1199.97	1200.23	1.19	0.59	1.03	MWD
10123.00	92.03	274.52	8983.14	-46.81	-1231.84	1232.09	0.99	-0.22	-0.97	MWD
10155.00	91.11	273.60	8982.26	-44.55	-1263.75	1263.98	4.07	-2.87	-2.87	MWD
10187.00	91.11	273.04	8981.64	-42.70	-1295.69	1295.91	1.75	0.00	-1.75	MWD
10219.00	91.48	273.15	8980.92	-40.97	-1327.64	1327.85	1.21	1.16	0.34	MWD
10251.00	91.73	273.24	8980.02	-39.18	-1359.57	1359.77	0.83	0.78	0.28	MWD
10283.00	91.85	273.43	8979.02	-37.32	-1391.50	1391.69	0.70	0.37	0.59	MWD
10315.00	92.41	273.52	8977.83	-35.39	-1423.42	1423.60	1.77	1.75	0.28	MWD
10347.00	90.92	273.28	8976.90	-33.49	-1455.35	1455.52	4.72	-4.66	-0.75	MWD
10378.00	90.25	273.55	8976.58	-31.64	-1486.30	1486.45	2.33	-2.16	0.87	MWD
10410.00	89.94	273.93	8976.53	-29.56	-1518.23	1518.37	1.53	-0.97	1.19	MWD
10442.00	90.31	274.05	8976.46	-27.33	-1550.15	1550.28	1.22	1.16	0.37	MWD
10474.00	89.29	274.17	8976.57	-25.04	-1582.07	1582.18	3.21	-3.19	0.37	MWD
10506.00	87.78	274.34	8977.39	-22.66	-1613.97	1614.07	4.75	-4.72	0.53	MWD
10538.00	87.04	274.51	8978.84	-20.20	-1645.84	1645.93	2.37	-2.31	0.53	MWD
10569.00	87.10	274.42	8980.42	-17.79	-1676.71	1676.78	0.35	0.19	-0.29	MWD
10601.00	87.41	274.82	8981.95	-15.21	-1708.56	1708.62	1.58	0.97	1.25	MWD
10633.00	87.84	273.70	8983.28	-12.84	-1740.45	1740.49	3.75	1.34	-3.50	MWD
10663.00	87.84	271.79	8984.41	-11.40	-1770.39	1770.43	6.36	0.00	-6.37	MWD
10697.00	88.52	270.21	8985.49	-10.81	-1804.37	1804.40	5.06	2.00	-4.65	MWD
10729.00	90.25	269.61	8985.83	-10.86	-1836.36	1836.40	5.72	5.41	-1.87	MWD
10760.00	91.30	269.63	8985.42	-11.06	-1867.36	1867.39	3.39	3.39	0.06	MWD
10792.00	91.48	269.77	8984.64	-11.23	-1899.35	1899.38	0.71	0.56	0.44	MWD
10824.00	91.05	269.36	8983.93	-11.47	-1931.34	1931.38	1.86	-1.34	-1.28	MWD
10856.00	90.80	268.71	8983.42	-12.01	-1963.33	1963.37	2.18	-0.78	-2.03	MWD
10888.00	91.30	268.65	8982.83	-12.75	-1995.32	1995.36	1.57	1.56	-0.19	MWD
10919.00	91.79	268.58	8981.99	-13.50	-2026.30	2026.34	1.60	1.58	-0.23	MWD
10951.00	92.10	268.82	8980.91	-14.22	-2058.27	2058.32	1.22	0.97	0.75	MWD

Weatherford International, Inc.

Survey Report



Weatherford

Company: Manzano
Field: LEA CO. NM
Site: Red Raider State-3 #1H
Well: #1H
Wellpath: 1

Date: 11/16/2009
Co-ordinate(NE) Reference: Well: #1H, Grid:North
Vertical (TVD) Reference: SITE 4312 0
Section (VS) Reference: Well (0.00N,0.00E,269.68Azi)
Survey Calculation Method: Minimum Curvature
Db: Sybase

Time: 08 06:41
Page: 3

Survey: WFT Svy

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
10983.00	91.91	268.85	8979.79	-14.87	-2090.25	2090.30	0.60	-0.59	0.09	MWD
11015.00	90.74	268.98	8979.05	-15.48	-2122.23	2122.28	3.68	-3.66	0.41	MWD
11047.00	90.80	269.44	8978.62	-15.92	-2154.22	2154.28	1.45	0.19	1.44	MWD
11079.00	91.23	269.47	8978.05	-16.23	-2186.22	2186.27	1.35	1.34	0.09	MWD
11111.00	90.86	269.97	8977.47	-16.38	-2218.21	2218.27	1.94	-1.16	1.56	MWD
11143.00	89.32	270.58	8977.42	-16.23	-2250.21	2250.27	5.18	-4.81	1.91	MWD
11174.00	89.01	270.54	8977.87	-15.93	-2281.21	2281.26	1.01	-1.00	-0.13	MWD
11207.00	88.52	270.43	8978.58	-15.65	-2314.20	2314.25	1.52	-1.48	-0.33	MWD
11239.00	86.98	270.65	8979.84	-15.34	-2346.17	2346.22	4.86	-4.81	0.69	MWD
11271.00	85.44	270.65	8981.95	-14.98	-2378.10	2378.14	4.81	-4.81	0.00	MWD
11302.00	85.68	270.90	8984.35	-14.56	-2409.00	2409.04	1.12	0.77	0.81	MWD
11334.00	86.30	271.25	8986.59	-13.97	-2440.92	2440.96	2.22	1.94	1.09	MWD
11366.00	87.22	271.45	8988.40	-13.21	-2472.86	2472.89	2.94	2.87	0.62	MWD
11398.00	87.90	270.99	8989.76	-12.53	-2504.82	2504.85	2.56	2.12	-1.44	MWD
11430.00	88.33	270.64	8990.81	-12.08	-2536.80	2536.83	1.73	1.34	-1.09	MWD
11461.00	88.64	270.78	8991.63	-11.69	-2567.79	2567.81	1.10	1.00	0.45	MWD
11493.00	88.58	270.88	8992.41	-11.23	-2599.77	2599.80	0.36	-0.19	0.31	MWD
11525.00	88.58	271.05	8993.20	-10.69	-2631.76	2631.78	0.53	0.00	0.53	MWD
11557.00	89.03	271.18	8993.87	-10.07	-2663.75	2663.76	1.46	1.41	0.41	MWD
11589.00	88.34	271.01	8994.60	-9.46	-2695.73	2695.74	2.22	-2.16	-0.53	MWD
11621.00	86.92	270.53	8995.93	-9.03	-2727.70	2727.71	4.68	-4.44	-1.50	MWD
11653.00	86.49	270.11	8997.77	-8.85	-2759.65	2759.65	1.88	-1.34	-1.31	MWD
11685.00	86.60	270.33	8999.69	-8.73	-2791.59	2791.59	0.77	0.34	0.69	MWD
11717.00	87.35	269.98	9001.38	-8.64	-2823.54	2823.55	2.59	2.34	-1.09	MWD
11749.00	88.95	269.71	9002.42	-8.73	-2855.52	2855.53	5.07	5.00	-0.84	MWD
11781.00	89.30	269.64	9002.91	-8.91	-2887.52	2887.53	1.12	1.09	-0.22	MWD
11813.00	89.44	269.62	9003.26	-9.11	-2919.52	2919.52	0.44	0.44	-0.06	MWD
11845.00	89.75	269.63	9003.48	-9.32	-2951.52	2951.52	0.97	0.97	0.03	MWD
11877.00	90.06	269.44	9003.54	-9.58	-2983.52	2983.52	1.14	0.97	-0.59	MWD
11909.00	90.31	269.54	9003.43	-9.87	-3015.51	3015.52	0.84	0.78	0.31	MWD
11941.00	89.88	269.64	9003.38	-10.10	-3047.51	3047.52	1.38	-1.34	0.31	MWD
11973.00	89.81	269.92	9003.47	-10.22	-3079.51	3079.52	0.90	-0.22	0.87	MWD
12005.00	90.37	270.47	9003.42	-10.11	-3111.51	3111.52	2.45	1.75	1.72	MWD
12037.00	90.80	270.77	9003.09	-9.77	-3143.51	3143.51	1.64	1.34	0.94	MWD
12069.00	91.42	270.95	9002.47	-9.29	-3175.50	3175.50	2.02	1.94	0.56	MWD
12101.00	91.17	271.63	9001.75	-8.56	-3207.48	3207.48	2.26	-0.78	2.12	MWD
12133.00	91.61	272.26	9000.97	-7.48	-3239.45	3239.45	2.40	1.37	1.97	MWD
12164.00	92.90	272.90	8999.75	-6.08	-3270.40	3270.38	4.64	4.16	2.06	MWD
12196.00	93.58	273.37	8997.94	-4.34	-3302.30	3302.27	2.58	2.12	1.47	MWD
12228.00	93.95	273.47	8995.84	-2.43	-3334.17	3334.13	1.20	1.16	0.31	MWD
12260.00	93.58	273.01	8993.74	-0.63	-3366.05	3366.00	1.84	-1.16	-1.44	MWD
12292.00	92.54	271.28	8992.03	0.57	-3397.98	3397.93	6.30	-3.25	-5.41	MWD
12324.00	92.97	270.54	8990.49	1.08	-3429.94	3429.88	2.67	1.34	-2.31	MWD
12356.00	93.02	270.29	8988.82	1.31	-3461.90	3461.84	0.80	0.16	-0.78	MWD
12388.00	92.28	269.92	8987.34	1.37	-3493.86	3493.80	2.58	-2.31	-1.16	MWD
12420.00	89.88	270.23	8986.74	1.41	-3525.85	3525.79	7.56	-7.50	0.97	MWD
12452.00	89.69	270.48	8986.86	1.61	-3557.85	3557.79	0.98	-0.59	0.78	MWD
12484.00	89.63	270.16	8987.05	1.78	-3589.85	3589.79	1.02	-0.19	-1.00	MWD
12516.00	89.44	269.86	8987.31	1.79	-3621.85	3621.78	1.11	-0.59	-0.94	MWD
12548.00	89.44	269.62	8987.62	1.64	-3653.85	3653.78	0.75	0.00	-0.75	MWD
12580.00	89.88	269.66	8987.81	1.44	-3685.85	3685.78	1.38	1.37	0.12	MWD
12611.00	90.25	269.75	8987.78	1.28	-3716.85	3716.78	1.23	1.19	0.29	MWD
12643.00	90.12	269.90	8987.67	1.19	-3748.85	3748.78	0.62	-0.41	0.47	MWD

Weatherford International, Inc.

Survey Report



Weatherford

Company: Manzano	Date: 11/16/2009	Time: 08:06:41	Page: 4
Field: LEA CO. NM	Co-ordinate(NE) Reference:	Well: #1H, Grid North	
Site: Red Raider State-3 #1H	Vertical (TVD) Reference:	SITE 4312.0	
Well: #1H	Section (VS) Reference:	Well (0.00N,0.00E,269.68Azi)	
Wellpath: 1	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Survey: WFT Svy

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
12675.00	90.06	269.98	8987.62	1.15	-3780.85	3780.78	0.31	-0.19	0.25	MWD
12707.00	90.12	269.74	8987.57	1.07	-3812.85	3812.78	0.77	0.19	-0.75	MWD
12738.00	90.31	269.88	8987.46	0.97	-3843.85	3843.78	0.76	0.61	0.45	MWD
12770.00	90.43	269.92	8987.25	0.92	-3875.85	3875.78	0.40	0.37	0.12	MWD
12802.00	90.86	269.92	8986.89	0.87	-3907.84	3907.78	1.34	1.34	0.00	MWD
12834.00	91.54	270.06	8986.22	0.87	-3939.84	3939.77	2.17	2.12	0.44	MWD
12866.00	91.17	270.32	8985.46	0.97	-3971.83	3971.76	1.41	-1.16	0.81	MWD
12898.00	90.19	271.00	8985.08	1.34	-4003.82	4003.75	3.73	-3.06	2.12	MWD
12930.00	90.12	272.00	8985.00	2.18	-4035.81	4035.74	3.13	-0.22	3.12	MWD
12962.00	90.62	271.40	8984.79	3.13	-4067.80	4067.71	2.44	1.56	-1.87	MWD
12993.00	91.05	271.07	8984.34	3.80	-4098.79	4098.70	1.75	1.39	-1.06	MWD
13025.00	91.73	271.34	8983.56	4.47	-4130.77	4130.68	2.29	2.12	0.84	MWD
13057.00	92.28	271.38	8982.44	5.23	-4162.74	4162.65	1.72	1.72	0.12	MWD
13089.00	92.16	271.15	8981.20	5.93	-4194.71	4194.61	0.81	-0.37	-0.72	MWD
13121.00	91.60	271.12	8980.15	6.57	-4226.68	4226.58	1.75	-1.75	-0.09	MWD
13153.00	91.67	270.87	8979.24	7.12	-4258.67	4258.56	0.81	0.22	-0.78	MWD
13184.00	91.54	270.61	8978.37	7.52	-4289.65	4289.54	0.94	-0.42	-0.84	MWD
13216.00	91.30	270.36	8977.58	7.79	-4321.64	4321.53	1.08	-0.75	-0.78	MWD
13248.00	90.37	270.73	8977.11	8.10	-4353.64	4353.52	3.13	-2.91	1.16	MWD
13280.00	90.31	271.02	8976.92	8.59	-4385.63	4385.51	0.93	-0.19	0.91	MWD
13311.00	90.74	271.42	8976.64	9.25	-4416.62	4416.50	1.89	1.39	1.29	MWD
13343.00	90.06	271.68	8976.41	10.11	-4448.61	4448.48	2.28	-2.12	0.81	MWD
13374.00	89.32	270.93	8976.58	10.82	-4479.60	4479.47	3.40	-2.39	-2.42	MWD
13405.00	88.95	271.18	8977.05	11.39	-4510.59	4510.46	1.44	-1.19	0.81	MWD
13437.00	88.46	271.44	8977.77	12.12	-4542.58	4542.44	1.73	-1.53	0.81	MWD
13469.00	88.58	271.46	8978.60	12.93	-4574.55	4574.41	0.38	0.37	0.06	MWD
13501.00	88.89	271.49	8979.31	13.75	-4606.54	4606.39	0.97	0.97	0.09	MWD
13533.00	89.26	271.59	8979.82	14.61	-4638.52	4638.37	1.20	1.16	0.31	MWD
13563.00	89.63	271.69	8980.11	15.47	-4668.51	4668.35	1.28	1.23	0.33	MWD
13595.00	90.06	271.91	8980.20	16.48	-4700.49	4700.33	1.51	1.34	0.69	Last Svy @ 13595' MD
13657.00	90.06	271.91	8980.13	18.54	-4762.46	4762.28	0.00	0.00	0.00	Proj to Bit

Annotation

MD ft	TVD ft	
8500.00	8497.19	Tie on Gyro
13595.00	8980.20	Last Svy @ 13595' MD
13657.00	8980.13	Proj to Bit