

WELL LOGS

K Z

API number:	30-025-38601		
OGRID:		Operator:	CIMAREX ENERGY CO
		Property:	HURON 13 FEE # 4

surface	ULSTR:	C	13	T	15S	R	37E
			430	FNL	1750	FWL	

BH Loc	ULSTR:	F	13	T	15S	R	37E
			2210	FNL	1750	FWL	

Ground Level:	3778	DF:	3800	KB:	3801	
Datum:	KB			TD:	11100	

Land: FEE

Completion Date: (1) 1/31/2008
 Date Logs Received: 6/12/2008 ***LATE***
 Date Logs Due in: (2) 2/20/2008

Confidential:	NO			Date out:	
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Confidential period: 90 Days for State & Fee, 1 Year for federal
 Date Due In (1) is equal to Completion Date (1) + 20 days

Logs	Depth interval		
	200	9742	Spectral Gamma Ray
DLL/MGRD	4452	9763	Dual Laterolog Micro Guard Log

K Z

OCD TOPS

Rustler		Strawn		
Tansill		Atoka		
Yates		Morrow		
7R				
T. Bowers Sd				
B. Bowers Sd				
Queen	3952			
Penrose				
Grayburg				
San Andres	4457			
Glorieta	6793			
Tubb	7554			
Drinkard	7766			
Abo	8268			
Wolfcamp	9420			

Results of Directional Survey

API number:	30-025-38601		
OGRID:		Operator:	CIMAREX ENERGY CO
		Property:	HURON 13 FEE # 4

surface	ULSTR:	C	13	T	15S	R	37E
			430	FNL	1750	FWL	

BH Loc	ULSTR:	F	13	T	15S	R	37E
			2224	FNL	1676	FWL	

	MD	N/S	E/W	VD
	9661	-355.98	-18.71	9239.49
TOP PERFS/OH	9665	-359.98	-18.48	9420.00
	9665	-359.98	-18.48	9420.00
	11116	-1810.31	17.07	9419.83
BOT PERFS/OH	11167	-2243.73	20.98	9419.83
	11122	-1861.30	17.53	9419.83

NEXT TO LAST	11116	-1810.31	17.07	9419.83
LAST READING	9614.59	-291.18	-60.10	9420.00
TD	11100	-1794.12	16.25	9419.83

Surface Location	430	FN	1750	FW
Projected BHL	2224	FN	1766	FW
Location of				
Top Perfs/OH	790	FN	1732	FW
Bottom Perfs/OH	2674	FN	1771	FW

SUMMARY of Subsurface Locations

Surface Location	C-13-15S-37E	430	FN	1750	FW	Vert. Depth
Top Perfs/OH	C-13-15S-37E	790	FN	1732	FW	9420.00
Bottom Perfs/OH	F-13-15S-37E	2674	FN	1771	FW	9419.83
Projected TD	F-13-15S-37E	2224	FN	1766	FW	9419.83

OPERATOR
WELL/LEASE
COUNTY

CIMAREX ENERGY CO.
HURON 13 FEE 4
LEA

075-0058

STATE OF NEW MEXICO
DEVIATION REPORT

301	0.75
453	0.50
949	0.50
1,277	0.75
1,807	0.50
2,389	1.50
2,868	0.50
3,406	1.50
3,885	1.50
4,460	1.50
4,916	1.00
5,396	0.50
5,870	1.00
6,287	0.75
6,792	0.75
7,269	1.00
7,748	2.50
8,253	2.75
8,698	2.25
9,082	3.00
9,542	3.00
9,825	3.00

RECEIVED

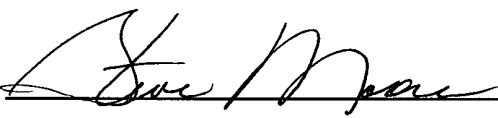
JUN 12 2009

HOBBS OCD

SUR: C-13-15s-37e, 430/N & 1750/W
BHL: F-13-15s-37e, 2224/N & 1766/W
API # 30-025-38601

STATE OF TEXAS

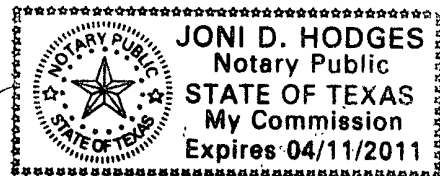
COUNTY OF MIDLAND

BY: 

The foregoing instrument was acknowledged before me on
Moore on behalf of Patterson-UTI Drilling Company LLC.

December 12, 2007, by Steve


Notary Public for Midland County, Texas
My Commission Expires: 4/11/11





HURON 13 FEE #4 LEA COUNTY, NEW MEXICO



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	9065 26	2 60	281 56	9063 54	46 56	-72 47	0 00	0 00	-46 56	
2	9076 00	1 33	232 67	9074 28	46 53	-72 81	18 62	-150 00	-46 53	
3	9083 83	0 00	232 67	9082 10	46 47	-72 88	16 96	180 00	-46 47	
4	9614 59	90 00	177 83	9420 00	-291 18	-60 10	16 96	-54 84	291 18	
5	11204 55	90 00	177 83	9420 00	-1880 00	0 00	0 00	0 00	1880 00	PBHL P4

WELL DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
#4	0 00	0 00	738078 00	902022 50	33°01'24 317N	103°09'23 651W	N/A

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
PBHL P4	9420 00	-1880 00	0 00	736198 12	902043.55	Point

FIELD DETAILS

Lea Co., NM (NAD 83)

Geodetic System US State Plane Coordinate System 1983
 Ellipsoid GRS 1980
 Zone New Mexico, Eastern Zone
 Magnetic Model bggm2006
 System Datum Mean Sea Level
 Local North True North

SITE DETAILS

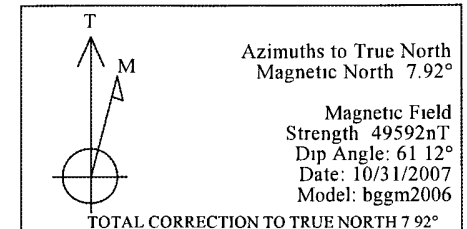
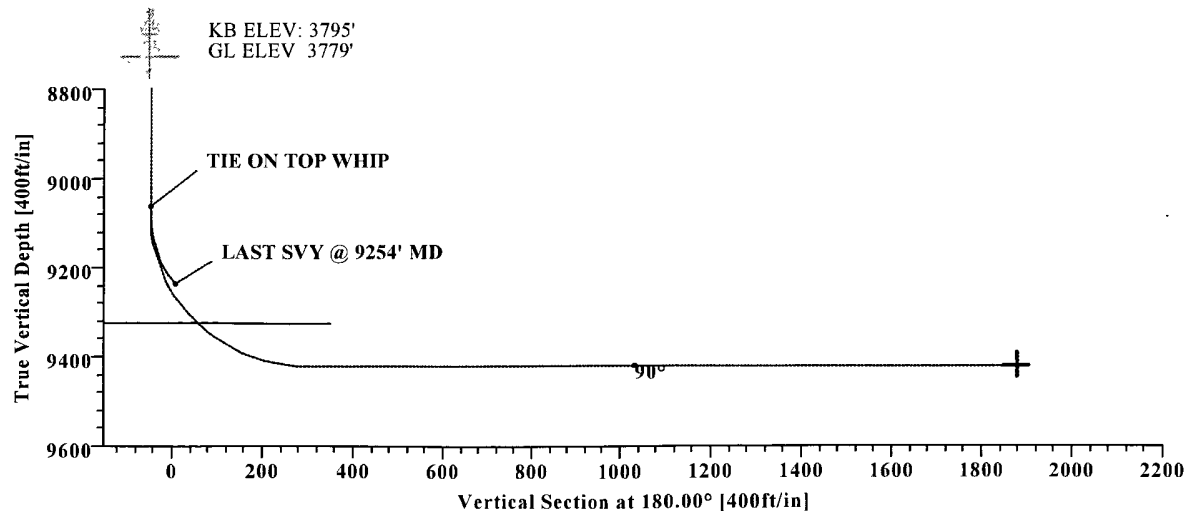
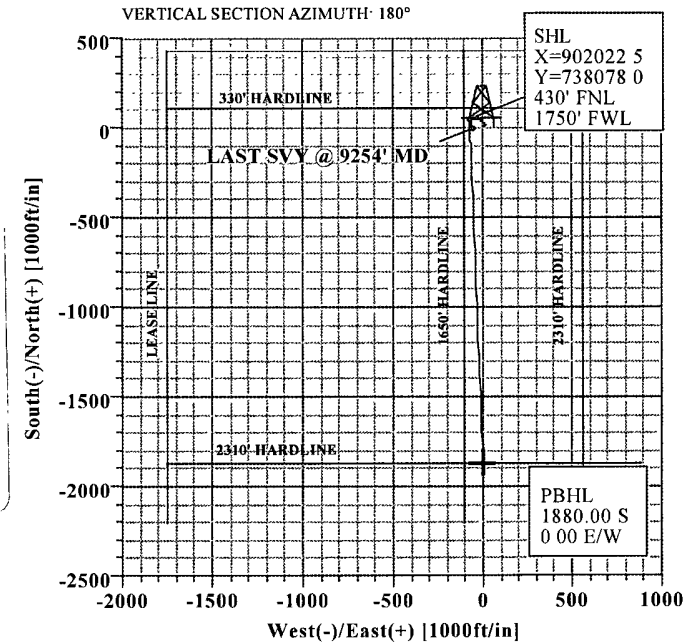
HURON 13 FEE #4
 430' FNL 1750' FWL of SEC 13 T-15-S R-37-E

Site Centre Northing 738078 00
 Easting 902022 50
 Ground Level 3779 00
 Positional Uncertainty 0 00
 Convergence 0 64

SUR: C-13-15s-37e, 430/N & 1750/M
 BHL: F-13-15s-37e, 2224/N & 1766/M
 API # 30-025-38601

LEGEND

#4, Lateral, Plan #6
 WFT SVY



Survey WFT SVY (#4/Lateral)
 Created By Lindsey Maddux Date 1/7/2008



Weatherford International, Inc.

Survey Report



Company: Cimarex
Field: Lea Co., NM (NAD 83)
Site: HURON 13 FEE #4
Well: #4
Wellpath: Lateral

Date: 1/7/2008
Co-ordinate(NE) Reference: Site: HURON 13 FEE #4; True North
Vertical (TVD) Reference: SITE 3795.0
Section (VS) Reference: Well (0.00N,0.00E,180.00Azi)
Survey Calculation Method: Minimum Curvature
Db: Sybase

Page: 1

Field: Lea Co., NM (NAD 83)

Map System: US State Plane Coordinate System 1983
Geo Datum: GRS 1980
Sys Datum: Mean Sea Level

Map Zone: New Mexico, Eastern Zone
Coordinate System: Site Centre
Geomagnetic Model: bggm2006

Site: HURON 13 FEE #4

430' FNL 1750' FWL of SEC 13 T-15-S R-37-E

Site Position: Northing: 738078.00 ft Latitude: 33 1 24.317 N
From: Map Easting: 902022.50 ft Longitude: 103 9 23.651 W
Position Uncertainty: 0.00 ft North Reference: True
Ground Level: 3779.00 ft Grid Convergence: 0.64 deg

Well: #4

Slot Name:

Well Position: +N/-S 0.00 ft Northing: 738078.00 ft Latitude: 33 1 24.317 N
 +E/-W 0.00 ft Easting: 902022.50 ft Longitude: 103 9 23.651 W
Position Uncertainty: 0.00 ft

Wellpath: Lateral

Current Datum: SITE
Magnetic Data: 10/31/2007
Field Strength: 49592 nT
Vertical Section: Depth From (TVD) ft
 Height 3795.00 ft
Drilled From: Gyro
Tie-on Depth: 9065.26 ft
Above System Datum: Mean Sea Level
Declination: 7.92 deg
Mag Dip Angle: 61.12 deg
+E/-W ft
Direction deg
 0.00 0.00 0.00 180.00

Survey: WFT SVY.

Start Date: 1/7/2008

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

Engineer: Lindsey Maddux
Tied-to: From: Definitive Path

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
9065.26	2.60	281.56	9063.54	46.56	-72.47	-46.56	0.00	0.00	0.00	TIE ON TOP WHIP
9099.00	3.80	151.40	9097.26	45.73	-72.68	-45.73	17.28	3.54	-385.77	MWD
9131.00	11.40	146.30	9128.96	42.16	-70.42	-42.16	23.82	23.75	-15.94	MWD
9162.00	20.00	154.20	9158.77	34.82	-66.40	-34.82	28.52	27.74	25.48	MWD
9193.00	26.60	165.20	9187.24	23.32	-62.32	-23.32	25.42	21.29	35.48	MWD
9225.00	31.10	170.90	9215.27	8.23	-59.18	-8.23	16.47	14.06	17.81	MWD
9254.00	35.60	171.20	9239.49	-7.52	-56.70	7.52	15.53	15.52	1.03	LAST SVY @ 9254' MD

Annotation

MD ft	TVD ft	
9065.26	9063.54	TIE ON TOP WHIP
9254.00	9239.49	LAST SVY @ 9254' MD



HURON 13 FEE #4
LEA COUNTY, NEW MEXICO



Weatherford

SECTION DETAILS

Sec	MD	Inc	A/I	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	9065.26	2.60	281.56	9063.54	46.56	-72.47	0.00	0.00	-46.56	
2	9076.00	1.33	232.67	9074.28	46.53	-72.81	18.62	-150.00	-46.53	
3	9083.83	0.00	232.67	9082.10	46.47	-72.88	16.96	180.00	-46.47	
4	9614.59	90.00	177.83	9420.00	-291.18	-60.10	16.96	-54.84	291.18	
5	11204.55	90.00	177.83	9420.00	-1880.00	0.00	0.00	0.00	1880.00	PBHL P4

WELL DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
#4	0.00	0.00	738078.00	902022.50	33°01'24.317N	103°09'23.651W	N/A

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
PBHL P4	9420.00	-1880.00	0.00	736198.12	902043.55	Point

FIELD DETAILS

Lea Co., NM (NAD 83)

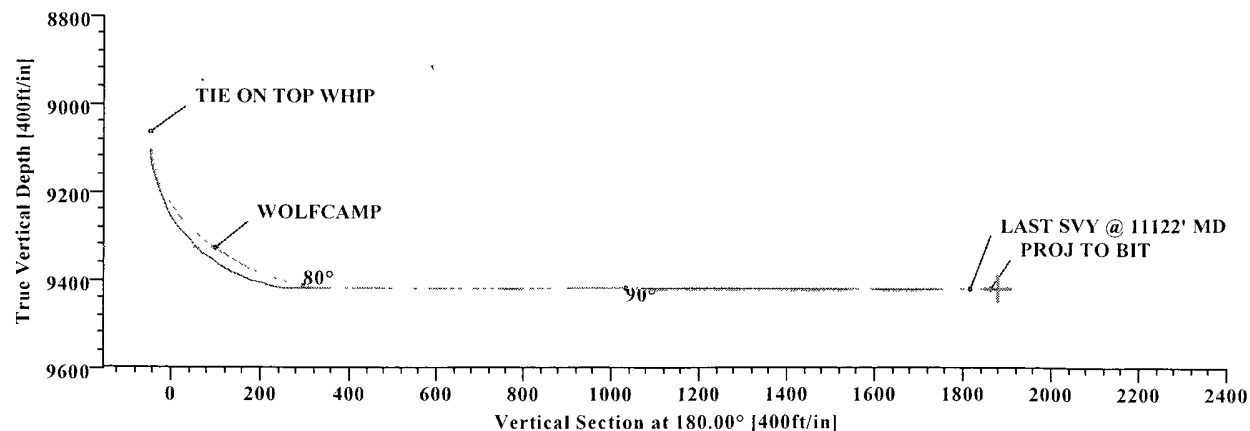
Geodetic System US State Plane Coordinate System 1983
Ellipsoid GRS 1980
Zone New Mexico, Eastern Zone
Magnetic Model bggm2006
System Datum Mean Sea Level
Local North True North

SITE DETAILS

HURON 13 FEE #4
430' FNL 1750' FWL of SEC 13 T-15-S R-37-E

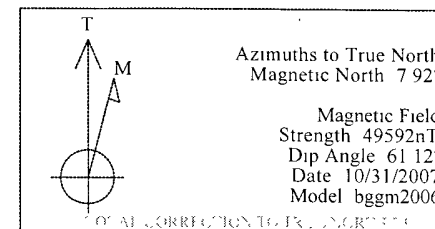
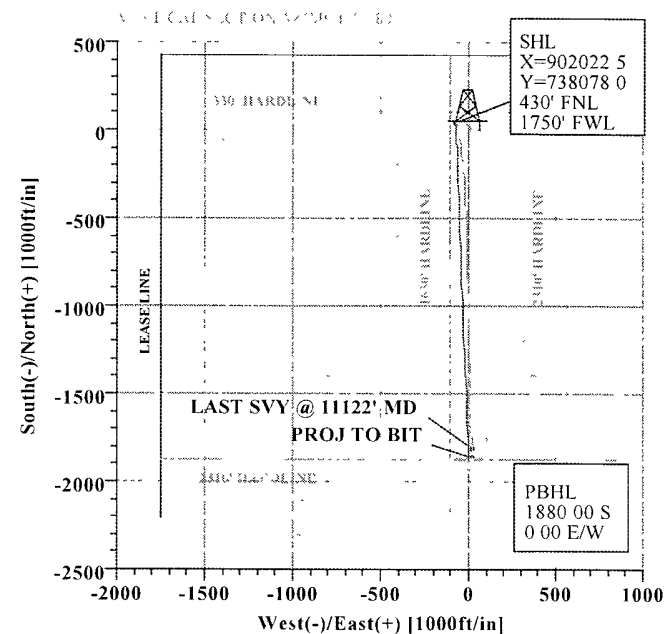
Site Centre Northing 738078.00
Easting 902022.50
Ground Level 3779.00
Positional Uncertainty 0.00
Convergence 0.64

KB ELEV 3795'
GL ELEV 3779'



LEGEND

#4 Lateral, Plan #6
WFT SVY



Survey WFT SVY (#4/Lateral)

Created By Lindsey Maddux

Date 1/14/2008



Weatherford International, Inc.

Survey Report



Weatherford

Company: Cimarex Date: 1/14/2008 Time: 10 03 52 Page: 1
Field: Lea Co, NM (NAD 83) Co-ordinate(NE) Reference: Site HURON 13 FEE #4, True North
Site: HURON 13 FEE #4 Vertical (TVD) Reference: SITE 3795 0
Well: #4 Section (VS) Reference: Well (0.00N,0.00E,180.00Azi)
Wellpath: Lateral Survey Calculation Method: Minimum Curvature Db: Sybase

Field: Lea Co, NM (NAD 83)

Map System: US State Plane Coordinate System 1983
Geo Datum: GRS 1980
Sys Datum: Mean Sea Level

Map Zone: New Mexico, Eastern Zone
Coordinate System: Site Centre
Geomagnetic Model: bggm2006

Site: HURON 13 FEE #4

430' FNL 1750' FWL of SEC 13 T-15-S R-37-E

Site Position: Northing: 738078 00 ft Latitude: 33 1 24 317 N
From: Map Easting: 902022 50 ft Longitude: 103 9 23 651 W
Position Uncertainty: 0 00 ft North Reference: True
Ground Level: 3779.00 ft Grid Convergence: 0.64 deg

Well: #4

Slot Name:

Well Position: +N/-S 0 00 ft Northing: 738078.00 ft Latitude: 33 1 24 317 N
+E/-W 0 00 ft Easting: 902022 50 ft Longitude: 103 9 23 651 W
Position Uncertainty: 0 00 ft

Wellpath: Lateral

Drilled From: Gyro

Current Datum: SITE Height 3795 00 ft Tie-on Depth: 9065 26 ft
Magnetic Data: 10/31/2007 Above System Datum: Mean Sea Level
Field Strength: 49592 nT Declination: 7 92 deg
Vertical Section: Depth From (TVD) +N/-S Mag Dip Angle: 61 12 deg
ft ft +E/-W Direction
deg
0 00 0 00 0.00 180 00

Survey: WFT SVY

Start Date: 1/7/2008

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

Engineer: Lindsey Maddux
Tied-to: From Definitive Path

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
9065.26	2.60	281.56	9063.54	46.56	-72.47	-46.56	0.00	0.00	0.00	TIE ON TOP WHIP
9099.00	3.80	151.40	9097.26	45.73	-72.68	-45.73	17.28	3.54	-385.77	MWD
9131.00	11.40	146.30	9128.96	42.16	-70.42	-42.16	23.82	23.75	-15.94	MWD
9162.00	20.00	154.20	9158.77	34.82	-66.40	-34.82	28.52	27.74	25.48	MWD
9193.00	26.60	165.20	9187.24	23.32	-62.32	-23.32	25.42	21.29	35.48	MWD
9225.00	31.10	170.90	9215.27	8.23	-59.18	-8.23	16.47	14.06	17.81	MWD
9254.00	35.60	171.20	9239.49	-7.52	-56.70	7.52	15.53	15.52	1.03	MWD
9286.00	40.90	169.50	9264.61	-27.04	-53.36	27.04	16.88	16.56	-5.31	MWD
9316.00	46.60	168.40	9286.27	-47.39	-49.38	47.39	19.17	19.00	-3.67	MWD
9348.00	52.70	171.20	9306.98	-71.38	-45.09	71.38	20.19	19.06	8.75	MWD
9380.00	56.70	175.30	9325.48	-97.30	-42.04	97.30	16.29	12.50	12.81	MWD
9412.00	57.20	176.30	9342.93	-124.05	-40.08	124.05	3.05	1.56	3.12	MWD
9443.00	57.50	175.80	9359.65	-150.09	-38.28	150.09	1.67	0.97	-1.61	MWD
9475.00	62.50	174.60	9375.65	-177.70	-35.96	177.70	15.96	15.62	-3.75	MWD
9507.00	68.30	172.10	9388.97	-206.58	-32.57	206.58	19.47	18.12	-7.81	MWD
9538.00	72.70	173.50	9399.31	-235.56	-28.92	235.56	14.82	14.19	4.52	MWD
9570.00	75.90	174.40	9407.97	-266.19	-25.67	266.19	10.36	10.00	2.81	MWD
9602.00	80.40	175.40	9414.54	-297.38	-22.89	297.38	14.39	14.06	3.12	MWD
9634.00	86.30	175.80	9418.24	-329.06	-20.46	329.06	18.48	18.44	1.25	MWD
9661.00	90.13	176.76	9419.08	-355.98	-18.71	355.98	14.62	14.19	3.56	MWD
9665.00	90.70	176.90	9419.06	-359.98	-18.48	359.98	14.67	14.25	3.50	MWD
9697.00	91.40	177.60	9418.47	-391.93	-16.95	391.93	3.09	2.19	2.19	MWD
9728.00	90.40	177.70	9417.98	-422.90	-15.68	422.90	3.24	-3.23	0.32	MWD
9760.00	90.60	177.20	9417.70	-454.87	-14.25	454.87	1.68	0.62	-1.56	MWD



Weatherford International, Inc.

Survey Report



Weatherford

Company: Cimarex Date: 1/14/2008 Time: 10 03 52 Page: 2
Field: Lea Co, NM (NAD 83) Co-ordinate(NE) Reference: Site HURON 13 FEE #4 True North
Site: HURON 13 FEE #4 Vertical (TVD) Reference: SITE 3795.0
Well: #4 Section (VS) Reference: Well (0 00N, 0 00E, 180.00Azi)
Wellpath: Lateral 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
9792.00	89.40	178.10	9417.70	-486.84	-12.94	486.84	4.69	-3.75	2.81	MWD
9823.00	89.80	178.10	9417.92	-517.82	-11.91	517.82	1.29	1.29	0.00	MWD
9855.00	90.10	178.40	9417.95	-549.81	-10.94	549.81	1.33	0.94	0.94	MWD
9886.00	88.40	179.30	9418.35	-580.80	-10.32	580.80	6.20	-5.48	2.90	MWD
9918.00	89.40	179.10	9418.97	-612.79	-9.87	612.79	3.19	3.12	-0.62	MWD
9950.00	89.50	178.80	9419.27	-644.78	-9.28	644.78	0.99	0.31	-0.94	MWD
9982.00	89.30	179.00	9419.61	-676.78	-8.67	676.78	0.88	-0.62	0.62	MWD
10014.00	89.00	178.40	9420.08	-708.76	-7.94	708.76	2.10	-0.94	-1.87	MWD
10045.00	89.10	179.00	9420.60	-739.75	-7.24	739.75	1.96	0.32	1.94	MWD
10077.00	89.90	179.00	9420.88	-771.74	-6.68	771.74	2.50	2.50	0.00	MWD
10108.00	90.70	179.00	9420.72	-802.74	-6.14	802.74	2.58	2.58	0.00	MWD
10139.00	90.80	178.60	9420.31	-833.73	-5.49	833.73	1.33	0.32	-1.29	MWD
10170.00	90.80	178.60	9419.88	-864.72	-4.73	864.72	0.00	0.00	0.00	MWD
10202.00	90.80	178.40	9419.43	-896.70	-3.90	896.70	0.62	0.00	-0.62	MWD
10234.00	91.00	178.80	9418.93	-928.69	-3.11	928.69	1.40	0.62	1.25	MWD
10266.00	91.20	179.30	9418.31	-960.68	-2.58	960.68	1.68	0.62	1.56	MWD
10297.00	89.00	179.50	9418.26	-991.68	-2.26	991.68	7.13	-7.10	0.65	MWD
10329.00	88.30	179.50	9419.01	-1023.67	-1.98	1023.67	2.19	-2.19	0.00	MWD
10361.00	87.90	179.50	9420.07	-1055.65	-1.70	1055.65	1.25	-1.25	0.00	MWD
10392.00	88.90	179.30	9420.94	-1086.63	-1.38	1086.63	3.29	3.23	-0.65	MWD
10424.00	88.60	179.10	9421.64	-1118.62	-0.93	1118.62	1.13	-0.94	-0.62	MWD
10456.00	90.00	178.80	9422.03	-1150.61	-0.34	1150.61	4.47	4.37	-0.94	MWD
10488.00	89.80	178.60	9422.08	-1182.60	0.38	1182.60	0.88	-0.62	-0.62	MWD
10519.00	90.00	178.40	9422.14	-1213.59	1.19	1213.59	0.91	0.65	-0.65	MWD
10550.00	90.40	178.40	9422.03	-1244.58	2.06	1244.58	1.29	1.29	0.00	MWD
10580.00	90.70	177.60	9421.74	-1274.56	3.11	1274.56	2.85	1.00	-2.67	MWD
10612.00	90.80	177.20	9421.32	-1306.53	4.56	1306.53	1.29	0.31	-1.25	MWD
10644.00	90.00	177.90	9421.10	-1338.50	5.93	1338.50	3.32	-2.50	2.19	MWD
10675.00	89.60	179.00	9421.21	-1369.48	6.76	1369.48	3.78	-1.29	3.55	MWD
10706.00	89.90	179.30	9421.34	-1400.48	7.22	1400.48	1.37	0.97	0.97	MWD
10737.00	90.00	179.10	9421.37	-1431.48	7.66	1431.48	0.72	0.32	-0.65	MWD
10769.00	90.20	179.10	9421.31	-1463.47	8.16	1463.47	0.62	0.62	0.00	MWD
10801.00	90.30	179.30	9421.17	-1495.47	8.61	1495.47	0.70	0.31	0.62	MWD
10832.00	90.50	178.60	9420.96	-1526.46	9.18	1526.46	2.35	0.65	-2.26	MWD
10864.00	90.60	178.30	9420.65	-1558.45	10.04	1558.45	0.99	0.31	-0.94	MWD
10896.00	88.90	178.40	9420.79	-1590.43	10.96	1590.43	5.32	-5.31	0.31	MWD
10927.00	88.90	178.30	9421.39	-1621.42	11.85	1621.42	0.32	0.00	-0.32	MWD
10959.00	89.30	177.70	9421.89	-1653.39	12.97	1653.39	2.25	1.25	-1.87	MWD
10990.00	90.40	178.40	9421.97	-1684.37	14.03	1684.37	4.21	3.55	2.26	MWD
11022.00	91.10	178.30	9421.55	-1716.36	14.95	1716.36	2.21	2.19	-0.31	MWD
11053.00	92.20	178.30	9420.66	-1747.33	15.87	1747.33	3.55	3.55	0.00	MWD
11084.00	90.70	179.00	9419.87	-1778.31	16.60	1778.31	5.34	-4.84	2.26	MWD
11116.00	89.60	179.30	9419.79	-1810.31	17.07	1810.31	3.56	-3.44	0.94	MWD
11122.00	89.60	179.50	9419.83	-1816.31	17.13	1816.31	3.33	0.00	3.33	LAST SVY @ 11122' MD
11167.00	89.60	179.50	9420.15	-1861.30	17.53	1861.30	0.00	0.00	0.00	PROJ TO BIT

Annotation

MD ft	TVD ft	
9065.26	9063.54	TIE ON TOP WHIP
11122.00	9419.83	LAST SVY @ 11122' MD
11167.00	9420.15	PROJ TO BIT