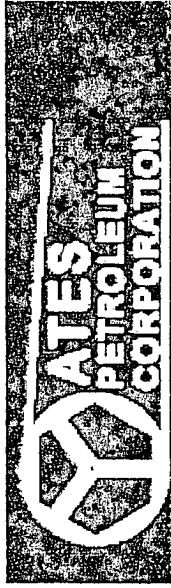


30-015-37511



Yates Petroleum Corp.

Eddy County
Martha AIK Federal
#13H
OH

Survey: MWD

Pathfinder X & Y Survey Report

27 September, 2010



A Schlumberger Company



Pathfinder
Pathfinder X & Y Survey Report



Company: Yates Petroleum Corp.
Project: Eddy County
Site: Martha AIK Federal
Well: #13H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #13H
TVD Reference: WELL @ 3568.00ft (19' KB Correction)
MD Reference: WELL @ 3568.00ft (19' KB Correction)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Midland Database

Project	Eddy County	System Datum:	Mean Sea Level
Map System:	US State Plane 1983		
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site Martha AIK Federal

Site Position: Northing: 512,888.500 ft Latitude: 32° 24' 32.986 N
From: Map Easting: 682,912.800 ft Longitude: 103° 52' 28.468 W
Position Uncertainty: 0.00 ft Slot Radius: Grid Convergence: 0.25 °

Well #13H
Well Position +N/-S 0.00 ft Latitude: 32° 24' 32.986 N
+E/-W 0.00 ft Longitude: 103° 52' 28.468 W
Position Uncertainty 0.00 ft Wellhead Elevation: Ground Level: 3,549.00 ft

Wellbore OH

Magnetics Model Name IGRF2010 Sample Date 08/05/10 Declination (°) 7.84 Dip Angle (°) 60.33 Field Strength (nT) 48,780

Design OH

Audit Notes:

Version: 1.0

Phase:

Tie On Depth:

0.00

Vertical Section:

Depth From (TVD)
(ft)

+N/-S
(ft)

+E/-W
(ft)

Direction
(°)

0.00

0.00

0.00

269.57



Pathfinder

Pathfinder X & Y Survey Report



Company: Yates Petroleum Corp.
Project: Eddy County
Site: Martha Aik Federal
Well: #13H
Wellbore: OH
Design: OH

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well #13H
WELL @ 3568.00ft (19' KB Correction)
WELL @ 3568.00ft (19' KB Correction)
Grid
Minimum Curvature
Midland Database

Survey Program Date 09/27/10

From (ft)	To (ft)	Survey (Wellbore)
200.00	7,650.00	GYRO (OH)
7,675.00	12,600.00	MWD (OH)

Survey

MD (ft)	Inc (")	Azi (")	TVD (ft)	TVDS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
7,650.00	0.50	219.31	7,648.80	4,080.80	-4.07	44.07	-44.04	0.00	512,884.43	682,956.87
KOP-7650.00°MD,0.50°INC,219.31°AZI,7648.80°TVD										
7,675.00	0.97	218.96	7,673.80	4,105.80	-4.32	43.87	-43.83	1.88	512,884.18	682,956.67
7,707.00	1.14	226.87	7,705.79	4,137.79	-4.75	43.47	-43.43	0.70	512,883.75	682,956.27
7,738.00	3.52	249.58	7,736.77	4,168.77	-5.29	42.35	-42.31	8.09	512,883.21	682,955.15
7,770.00	8.18	254.94	7,768.59	4,200.59	-6.23	39.23	-39.18	14.65	512,882.27	682,952.03
7,800.00	13.89	257.15	7,798.02	4,230.02	-7.58	33.65	-33.59	19.08	512,880.92	682,946.45
7,832.00	19.08	259.14	7,828.70	4,260.70	-9.42	24.76	-24.69	16.31	512,879.08	682,937.56
7,863.00	24.09	261.25	7,857.51	4,289.51	-11.34	13.53	-13.44	16.35	512,877.16	682,926.33
7,894.00	29.99	262.11	7,885.11	4,317.11	-13.37	-0.41	0.51	19.07	512,875.13	682,912.39
7,925.00	35.17	262.72	7,911.23	4,343.23	-15.57	-16.95	17.07	16.74	512,872.93	682,895.85
7,957.00	40.80	262.56	7,936.44	4,368.44	-18.09	-36.48	36.61	17.60	512,870.41	682,876.32
7,987.00	46.60	262.24	7,958.12	4,390.12	-20.83	-57.01	57.17	19.35	512,867.67	682,855.79
8,018.00	51.44	262.69	7,978.44	4,410.44	-23.90	-80.21	80.38	15.65	512,864.60	682,832.59
8,049.00	54.78	263.52	7,997.05	4,429.05	-26.87	-104.82	105.02	10.98	512,861.63	682,807.98
8,080.00	58.39	264.21	8,014.12	4,446.12	-29.63	-130.54	130.76	11.79	512,858.87	682,782.26
8,112.00	60.76	265.56	8,030.32	4,462.32	-32.09	-158.02	158.26	8.25	512,856.41	682,754.78
8,143.00	63.05	266.27	8,044.92	4,476.92	-34.03	-185.30	185.55	7.66	512,854.47	682,727.50
8,174.00	62.70	266.44	8,059.05	4,491.05	-35.79	-212.83	213.10	1.23	512,852.71	682,699.97
8,205.00	62.87	266.40	8,073.23	4,505.23	-37.51	-240.35	240.62	0.56	512,850.99	682,672.45
8,236.00	62.96	265.63	8,087.35	4,519.35	-39.43	-287.88	288.17	2.23	512,849.07	682,644.92



Pathfinder

Pathfinder X & Y Survey Report



Company: Yates Petroleum Corp.
Project: Eddy County
Site: Martha Aik Federal
Well: #13H
Wellbore: OH
Design: OH

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well #13H
WELL @ 3568.00ft (19' KB Correction)
WELL @ 3568.00ft (19' KB Correction)
Grid
Minimum Curvature
Midland Database

Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
8,267.00	63.05	265.77	8,101.42	4,533.42	-41.50	-295.43	295.73	0.50	512,847.00	682,617.37
8,298.00	63.14	265.64	8,115.45	4,547.45	-43.57	-322.99	323.31	0.47	512,844.93	682,589.81
8,330.00	63.22	265.66	8,129.88	4,561.88	-45.73	-351.47	351.80	0.26	512,842.77	682,561.33
8,361.00	63.14	265.12	8,143.87	4,575.87	-47.96	-379.04	379.39	1.58	512,840.54	682,533.76
8,393.00	63.49	265.20	8,158.24	4,590.24	-50.37	-407.53	407.90	1.12	512,838.13	682,505.27
8,424.00	63.66	264.98	8,172.04	4,604.04	-52.75	-435.19	435.58	0.84	512,835.75	682,477.61
8,456.00	63.49	264.25	8,186.28	4,618.28	-55.43	-463.72	464.12	2.11	512,833.07	682,449.08
8,487.00	63.49	264.51	8,200.11	4,632.11	-58.15	-491.33	491.75	0.75	512,830.35	682,421.47
8,517.00	63.75	264.58	8,213.44	4,645.44	-60.71	-518.08	518.52	0.89	512,827.79	682,394.72
8,548.00	65.77	265.07	8,226.66	4,658.66	-63.23	-546.01	546.47	6.67	512,825.27	682,366.79
8,579.00	68.06	265.46	8,238.82	4,670.82	-65.59	-574.43	574.90	7.48	512,822.91	682,338.37
8,610.00	70.79	266.52	8,249.71	4,681.71	-67.61	-603.37	603.87	9.37	512,820.89	682,309.43
8,641.00	71.93	267.17	8,259.62	4,691.62	-69.23	-632.70	633.21	4.18	512,819.27	682,280.10
8,672.00	73.42	267.17	8,268.85	4,700.85	-70.69	-662.26	662.77	4.81	512,817.81	682,250.54
8,703.00	75.80	267.39	8,277.08	4,709.08	-72.11	-692.11	692.63	7.71	512,816.39	682,220.69
8,734.00	78.70	267.84	8,283.92	4,715.92	-73.37	-722.32	722.85	9.46	512,815.13	682,190.48
8,765.00	81.43	268.08	8,289.26	4,721.26	-74.45	-752.83	753.37	8.84	512,814.05	682,159.97
8,797.00	83.62	268.52	8,293.43	4,725.43	-75.39	-784.54	785.09	6.98	512,813.11	682,128.26
8,828.00	86.70	268.99	8,296.04	4,728.04	-76.07	-815.42	815.97	10.05	512,812.43	682,097.38
8,891.00	92.68	268.55	8,296.38	4,728.38	-77.42	-878.38	878.93	9.52	512,811.08	682,034.42
EOC -8891.00' MD, 92.68' INC, 268.55' AZI, 8296.38' TVD, 9.52' DLS, 878.93' VS, -77.42' N, -878.38' E										
8,984.00	92.33	269.04	8,292.32	4,724.32	-79.37	-971.27	971.84	0.65	512,809.13	681,941.53
9,078.00	92.51	269.26	8,288.35	4,720.35	-80.76	-1,065.17	1,065.75	0.30	512,807.74	681,847.63
9,172.00	93.30	268.82	8,283.59	4,715.59	-82.34	-1,159.04	1,159.62	0.96	512,806.16	681,753.76
9,265.00	94.09	269.31	8,277.59	4,709.59	-83.85	-1,251.83	1,252.43	1.00	512,804.65	681,660.97
9,296.00	93.91	269.37	8,275.43	4,707.43	-84.21	-1,282.75	1,283.35	0.61	512,804.29	681,630.05
9,326.00	94.18	268.78	8,273.31	4,705.31	-84.69	-1,312.68	1,313.27	2.16	512,803.81	681,600.12



Pathfinder

Pathfinder X & Y Survey Report



Company: Yates Petroleum Corp.
Project: Eddy County
Site: Martha Aik Federal
Well: #13H
Wellbore: OH
Design: OH

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well #13H
WELL @ 3568.00ft (19' KB Correction)
WELL @ 3568.00ft (19' KB Correction)
Grid
Minimum Curvature
Midland Database

Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
9,356.00	93.56	268.82	8,271.29	4,703.29	-85.32	-1,342.60	1,343.20	2.07	512,803.18	681,570.20
9,388.00	91.89	269.20	8,269.77	4,701.77	-85.87	-1,374.56	1,375.16	5.35	512,802.63	681,538.24
9,418.00	90.40	269.11	8,269.17	4,701.17	-86.31	-1,404.55	1,405.16	4.98	512,802.19	681,508.25
9,449.00	89.43	269.35	8,269.21	4,701.21	-86.73	-1,435.55	1,436.16	3.22	512,801.77	681,477.25
9,480.00	89.87	270.16	8,269.40	4,701.40	-86.86	-1,466.54	1,467.15	2.97	512,801.64	681,446.26
9,511.00	89.96	269.98	8,269.45	4,701.45	-86.82	-1,497.54	1,498.15	0.65	512,801.68	681,415.26
9,541.00	89.96	270.02	8,269.47	4,701.47	-86.82	-1,527.54	1,528.15	0.13	512,801.68	681,385.26
9,572.00	90.13	270.33	8,269.45	4,701.45	-86.73	-1,558.54	1,559.15	1.14	512,801.77	681,354.26
9,634.00	90.40	270.35	8,269.16	4,701.16	-86.36	-1,620.54	1,621.14	0.44	512,802.14	681,292.26
9,695.00	90.22	270.73	8,268.83	4,700.83	-85.79	-1,681.54	1,682.13	0.69	512,802.71	681,231.26
9,727.00	89.96	270.61	8,268.78	4,700.78	-85.41	-1,713.54	1,714.13	0.89	512,803.09	681,199.26
9,820.00	89.96	270.20	8,268.84	4,700.84	-84.75	-1,806.53	1,807.12	0.44	512,803.75	681,106.27
9,913.00	90.13	270.24	8,268.77	4,700.77	-84.40	-1,899.53	1,900.11	0.19	512,804.10	681,013.27
10,006.00	90.66	269.62	8,268.13	4,700.13	-84.51	-1,992.53	1,993.11	0.88	512,803.99	680,920.27
10,099.00	89.69	270.02	8,267.85	4,699.85	-84.80	-2,085.53	2,086.11	1.13	512,803.70	680,827.27
10,192.00	89.87	269.94	8,268.20	4,700.20	-84.84	-2,178.53	2,179.10	0.21	512,803.66	680,734.27
10,285.00	89.25	269.55	8,268.92	4,700.92	-85.25	-2,271.52	2,272.10	0.79	512,803.25	680,641.28
10,379.00	89.52	269.68	8,269.93	4,701.93	-85.88	-2,365.51	2,366.09	0.32	512,802.62	680,547.29
10,472.00	89.87	269.54	8,270.42	4,702.42	-86.51	-2,458.51	2,459.09	0.41	512,801.99	680,454.29
10,565.00	89.87	269.95	8,270.63	4,702.63	-86.93	-2,551.51	2,552.09	0.44	512,801.57	680,361.29
10,659.00	90.57	269.93	8,270.27	4,702.27	-87.03	-2,645.51	2,646.09	0.74	512,801.47	680,267.29
10,752.00	90.22	270.38	8,269.63	4,701.63	-86.77	-2,738.51	2,739.08	0.61	512,801.73	680,174.29
10,845.00	90.48	270.30	8,269.06	4,701.06	-86.22	-2,831.50	2,832.07	0.29	512,802.28	680,081.30
10,938.00	90.31	270.50	8,268.42	4,700.42	-85.57	-2,924.50	2,925.06	0.28	512,802.93	679,988.30
11,032.00	90.22	269.88	8,267.99	4,699.99	-85.26	-3,018.50	3,019.05	0.67	512,803.24	679,894.30
11,125.00	90.31	269.93	8,267.56	4,699.56	-85.42	-3,111.49	3,112.05	0.11	512,803.08	679,801.31
11,219.00	90.31	269.86	8,267.05	4,699.05	-85.59	-3,205.49	3,206.05	0.07	512,802.91	679,707.31



Pathfinder

Pathfinder X & Y Survey Report



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Project: Eddy County
Site: Martha Aik Federal
Well: #13H
Wellbore: OH
Design: OH

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well #13H
WELL @ 3568.00ft (19' KB Correction)
WELL @ 3568.00ft (19' KB Correction)
Grid
Minimum Curvature
Midland Database

Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
11,313.00	92.51	270.49	8,264.73	4,696.73	-85.30	-3,299.46	3,300.01	2.43	512,803.20	679,613.34
11,406.00	91.89	270.60	8,261.16	4,693.16	-84.42	-3,392.38	3,392.92	0.68	512,804.08	679,520.42
11,498.00	92.42	270.42	8,257.71	4,689.71	-83.60	-3,484.32	3,484.84	0.61	512,804.90	679,428.48
11,591.00	92.24	270.68	8,253.92	4,685.92	-82.71	-3,577.23	3,577.75	0.34	512,805.79	679,335.57
11,684.00	91.01	270.50	8,251.29	4,683.29	-81.75	-3,670.19	3,670.70	1.34	512,806.75	679,242.61
11,715.00	90.57	270.00	8,250.86	4,682.86	-81.61	-3,701.19	3,701.69	2.15	512,806.89	679,211.61
11,777.00	91.80	270.79	8,249.58	4,681.58	-81.19	-3,763.17	3,763.67	2.36	512,807.31	679,149.63
11,809.00	91.89	270.92	8,248.55	4,680.55	-80.71	-3,795.15	3,795.65	0.49	512,807.79	679,117.65
11,840.00	91.54	270.81	8,247.62	4,679.62	-80.24	-3,826.13	3,826.63	1.18	512,808.26	679,086.67
11,871.00	91.98	270.66	8,246.67	4,678.67	-79.84	-3,857.12	3,857.61	1.50	512,808.66	679,055.68
11,891.00	91.80	271.56	8,246.01	4,678.01	-79.46	-3,877.10	3,877.59	4.59	512,809.04	679,035.70
11,922.00	91.71	271.13	8,245.06	4,677.06	-78.73	-3,908.08	3,908.56	1.42	512,809.77	679,004.72
11,954.00	91.63	271.25	8,244.13	4,676.13	-78.07	-3,940.06	3,940.53	0.45	512,810.43	678,972.74
11,985.00	90.84	271.72	8,243.46	4,675.46	-77.26	-3,971.04	3,971.51	2.97	512,811.24	678,941.76
12,079.00	90.04	271.49	8,242.74	4,674.74	-74.63	-4,065.00	4,065.44	0.89	512,813.87	678,847.80
12,171.00	89.60	272.11	8,243.02	4,675.02	-71.74	-4,156.95	4,157.37	0.83	512,816.76	678,755.85
12,265.00	89.34	271.85	8,243.89	4,675.89	-68.49	-4,250.89	4,251.29	0.39	512,820.01	678,661.91
12,358.00	89.60	271.99	8,244.75	4,676.75	-65.38	-4,343.84	4,344.20	0.32	512,823.12	678,568.96
12,451.00	89.96	272.25	8,245.11	4,677.11	-61.94	-4,436.77	4,437.11	0.48	512,826.56	678,476.03
12,518.00	90.31	271.81	8,244.95	4,676.95	-59.56	-4,503.73	4,504.05	0.84	512,828.94	678,409.07
12,600.00	90.31	271.81	8,244.51	4,676.51	-56.97	-4,585.69	4,585.98	0.00	512,831.53	678,327.11

BHL-12600.00'MD,90.31'INC,271.81'AZI, 8244.51'TVD, 4585.98'VS, -56.97'N, -4585.69'E



Pathfinder

Pathfinder X & Y Survey Report



A Schlumberger Company

Company: Yates Petroleum Corp.
Project: Eddy County
Site: Martha AIK Federal
Well: #13H
Wellbore: OH
Design: OH

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well #13H
WELL @ 3568.00ft (19' KB Correction)
WELL @ 3568.00ft (19' KB Correction)
Grid
Minimum Curvature
Midland Database

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL(M#13H)	0.00	0.00	8,232.00	-34.50	-4,618.60	512,854.000	678,294.200	32° 24' 32.838 N	103° 53' 22.346 W
- survey misses target center by 41.77ft at 12600.00ft MD (8244.51 TVD, -56.97 N, -4585.69 E)									
- Point									

Survey Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
7,650.00	7,648.80	-4.07	44.07	KOP-7650.00MD,0.50°INC,219.31°AZI,7648.80TVD
8,891.00	8,296.38	-77.42	-878.38	EOC-8891.00MD,92.68°INC,268.55°AZI,8296.38TVD,9.52°DLS, 878.5
12,600.00	8,244.51	-56.97	-4,585.69	BHL-12600.00MD,90.31°INC,271.81°AZI, 8244.51TVD, 4585.98VS, -;

Checked By: _____

Approved By: _____

Date: _____



A Schlumberger Company

Project: Eddy County
Site: Martha AIK Federz
Well: #13H
Wellbore: OH
Plan: Plan #5 (#13H/OH)

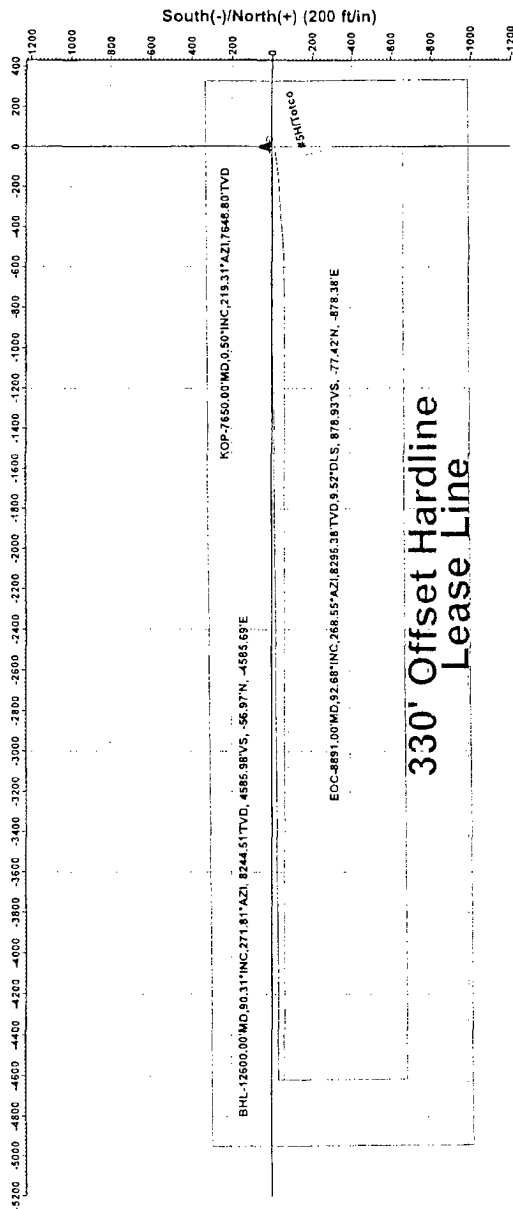
Azimuths to Grid North
True North: -0.25°
Magnetic North: 7.60°
Magnetic Field
Strength: 48779.6snT
Dip Angle: 60.33°
Date: 08/05/2010
Model: IGRF2010



PROJECT DETAILS: Eddy County
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level
Local North: Grid

SECTION DETAILS									
Sec	MD	Inc	Azi	TVD	+N/S	+E/W	DLog	TFace	VSec Target
1	8157.00	8289	286.35	8051.28	-34.84	-197.74	0.00	0.00	198.21
2	8157.00	8289	286.35	8051.28	-34.84	-197.74	0.00	0.00	198.21
3	8730.34	90.78	270.00	8231.73	-64.01	-775.14	11.53	727	773.95
4	12530.25	90.78	270.00	8231.73	-64.01	-4618.19	0.00	0.00	4618.63 PBHL(M#13H)

West(-)/East(+) (200 ft/in)



330' Offset Hardline
Lease Line

WELL DETAILS: #13H					
Ground Elevation:	3549.00				
RKB Elevation:	3558.00				
RKB Elevation:	3558.00				
Rig Name:	19 KB Correction				
+N/S	0.00	+E/W	0.00	East	682912.800
				Latitude	32° 24' 32.985 N
				Longitude	103° 52' 28.485 W
				Slot	

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)					
Name:	PBHL(M#13H)	TVD	8332.00	+N/S	-56.97
				+E/W	-4585.69
				East	572654.000
				North	578394.200
				Shape	Point

KOP-7650.00 MD, 0.50° INC, 219.31° AZI, 7648.80 TVD

EOC-8891.00 MD, 92.68° INC, 268.55° AZI, 8235.38 TVD, 9.52° DLS, 876.93° VS, -77.42° N, -878.38° E
BHL-7650.00 MD, 90.31° INC, 271.81° AZI, 8244.51 TVD, 4585.98° VS, -56.97° N, -4585.69° E

Vertical Section at 269.21° (200 ft/in)

Plan: Plan #5 (#13H/OH)
Created By: Nate Bingham
Checked: _____
Date: 9/11, September 27 2010

Martha AIK Fed. 13H TOC @ 560 Ft. Long String 9/30/10

Tina Nwarta

Temp Log on
5 1/2" casing

