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SUR: M-01-25s-32e, 330/S & 660/ W
BHL: D-01-25s-32e, 4859/S & 682/ W
API # 30-025-39525

Yates Petroleum Corp.

Lea County
Farber "BOB" Federal
#1H
OH

Survey: MWD #1

Pathfinder X & Y Survey Report

11 February, 2010

PATHFINDER



Pathfinder Energy Services
Pathfinder X & Y Survey Report



Company: Yates Petroleum Corp.
Project: Lea County
Site: Farber "BOB" Federal
Well: #1H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #1H
TVD Reference: WELL @ 3549.00ft (Silver Oak 10)
MD Reference: WELL @ 3549.00ft (Silver Oak 10)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Midland Database

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

Site	Farber "BOB" Federal				
Site Position:		Northing:	420,173.800 ft	Latitude:	32° 9' 11.552 N
From: Map		Easting:	757,485.300 ft	Longitude:	103° 38' 5.637 W
Position Uncertainty:	0.00 ft	Slot Radius:	"	Grid Convergence:	0.37 °

Well	#1H					
Well Position	+N/-S	0.00 ft	Northing:	420,173.800 ft	Latitude:	32° 9' 11.552 N
	+E/-W	0.00 ft	Easting:	757,485.300 ft	Longitude:	103° 38' 5.637 W
Position Uncertainty	0.00 ft		Wellhead Elevation:	ft	Ground Level:	3,531.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/08/2009	7.78	60.17	48,748

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	359.55	



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Survey Program Date 02/11/2010

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
100.00	8,700.00	GYRO (OH)	CB-GYRO-MS	Camera based gyro multishot
8,751.00	13,586.00	MWD #1 (OH)	MWD	MWD - Standard

Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
8,700.00	1.00	213.41	8,698.15	5,149.15	-30.44	35.67	-30.71	0.00	420,143.36	757,520.97
8,751.00	0.97	238.45	8,749.14	5,200.14	-31.03	35.05	-31.31	0.84	420,142.77	757,520.35
8,783.00	1.58	318.92	8,781.14	5,232.14	-30.84	34.53	-31.11	5.35	420,142.96	757,519.83
8,815.00	5.54	348.02	8,813.07	5,264.07	-29.00	33.92	-29.26	13.22	420,144.80	757,519.22
8,847.00	10.55	351.74	8,844.74	5,295.74	-24.58	33.18	-24.84	15.73	420,149.22	757,518.48
8,879.00	15.92	352.99	8,875.88	5,326.88	-17.32	32.22	-17.58	16.80	420,156.48	757,517.52
8,910.00	20.40	354.45	8,905.33	5,356.33	-7.72	31.18	-7.97	14.52	420,166.08	757,516.48
8,942.00	23.65	355.41	8,934.99	5,385.99	4.23	30.13	3.99	10.22	420,178.03	757,515.43
8,973.00	27.44	355.61	8,962.96	5,413.96	17.55	29.08	17.33	12.23	420,191.35	757,514.38
9,005.00	30.65	356.64	8,990.93	5,441.93	33.05	28.04	32.83	10.15	420,206.85	757,513.34
9,035.00	34.03	357.50	9,016.27	5,467.27	49.08	27.23	48.86	11.37	420,222.88	757,512.53
9,067.00	37.64	359.46	9,042.21	5,493.21	67.80	26.74	67.59	11.84	420,241.60	757,512.04
9,099.00	41.86	358.57	9,066.81	5,517.81	88.25	26.39	88.04	13.31	420,262.05	757,511.69
9,130.00	45.46	357.55	9,089.23	5,540.23	109.64	25.65	109.44	11.83	420,283.44	757,510.95
9,162.00	49.33	356.82	9,110.89	5,561.89	133.16	24.49	132.96	12.21	420,306.96	757,509.79
9,193.00	53.73	357.16	9,130.17	5,581.17	157.39	23.22	157.20	14.22	420,331.19	757,508.52
9,225.00	58.21	357.66	9,148.08	5,599.08	183.88	22.03	183.70	14.06	420,357.68	757,507.33
9,257.00	62.26	357.81	9,163.96	5,614.96	211.63	20.93	211.46	12.66	420,385.43	757,506.23
9,288.00	66.13	358.83	9,177.45	5,628.45	239.52	20.12	239.35	12.83	420,413.32	757,505.42
9,320.00	70.43	359.38	9,189.29	5,640.29	269.24	19.65	269.07	13.53	420,443.04	757,504.95
9,352.00	75.27	359.53	9,198.72	5,649.72	299.80	19.36	299.64	15.13	420,473.60	757,504.66



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MD Reference: WELL @ 3549.00ft (Silver Oak 10)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: 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)
9,384.00	79.67	358.99	9,205.66	5,656.66	331.03	18.96	330.87	13.85	420,504.83	757,504.26
9,416.00	83.36	358.30	9,210.38	5,661.38	362.67	18.21	362.51	11.73	420,536.47	757,503.51
9,447.00	86.44	358.00	9,213.14	5,664.14	393.52	17.21	393.38	9.98	420,567.32	757,502.51
9,479.00	88.29	358.18	9,214.61	5,665.61	425.47	16.15	425.33	5.81	420,599.27	757,501.45
9,510.00	88.64	357.50	9,215.44	5,666.44	456.44	14.98	456.31	2.47	420,630.24	757,500.28
9,574.00	88.55	357.13	9,217.01	5,668.01	520.35	11.98	520.24	0.59	420,694.15	757,497.28
9,668.00	90.40	359.86	9,217.87	5,668.87	614.30	9.51	614.20	3.51	420,788.10	757,494.81
9,763.00	91.01	359.88	9,216.70	5,667.70	709.29	9.30	709.20	0.64	420,883.09	757,494.60
9,857.00	91.80	0.01	9,214.40	5,665.40	803.26	9.21	803.16	0.85	420,977.06	757,494.51
9,952.00	89.69	0.50	9,213.16	5,664.16	898.25	9.63	898.14	2.28	421,072.05	757,494.93
10,048.00	88.55	359.46	9,214.64	5,665.64	994.23	9.60	994.13	1.61	421,168.03	757,494.90
10,142.00	89.25	359.34	9,216.44	5,667.44	1,088.21	8.61	1,088.11	0.76	421,262.01	757,493.91
10,236.00	89.34	358.90	9,217.60	5,668.60	1,182.19	7.17	1,182.10	0.48	421,355.99	757,492.47
10,331.00	89.16	359.07	9,218.84	5,669.84	1,277.17	5.49	1,277.09	0.26	421,450.97	757,490.79
10,425.00	89.43	358.97	9,220.00	5,671.00	1,371.15	3.88	1,371.07	0.31	421,544.95	757,489.18
10,519.00	89.69	358.82	9,220.72	5,671.72	1,465.13	2.07	1,465.06	0.32	421,638.93	757,487.37
10,615.00	86.44	357.42	9,223.96	5,674.96	1,561.00	-1.08	1,560.96	3.69	421,734.80	757,484.22
10,678.00	88.99	357.03	9,226.47	5,677.47	1,623.88	-4.13	1,623.86	4.09	421,797.68	757,481.17
10,742.00	90.92	356.59	9,226.52	5,677.52	1,687.77	-7.69	1,687.78	3.09	421,861.57	757,477.61
10,806.00	90.84	356.17	9,225.54	5,676.54	1,751.64	-11.73	1,751.68	0.67	421,925.44	757,473.57
10,869.00	88.99	356.62	9,225.63	5,676.63	1,814.51	-15.69	1,814.58	3.02	421,988.31	757,469.61
10,932.00	88.55	355.81	9,226.99	5,677.99	1,877.36	-19.85	1,877.46	1.46	422,051.16	757,465.45
10,996.00	88.90	355.56	9,228.41	5,679.41	1,941.16	-24.66	1,941.29	0.67	422,114.96	757,460.64
11,059.00	92.42	356.49	9,227.69	5,678.69	2,003.99	-29.03	2,004.16	5.78	422,177.79	757,456.27
11,123.00	94.79	358.58	9,223.66	5,674.66	2,067.80	-31.78	2,067.99	4.93	422,241.60	757,453.52
11,186.00	95.14	359.94	9,218.21	5,669.21	2,130.56	-32.59	2,130.75	2.22	422,304.36	757,452.71
11,280.00	92.15	2.69	9,212.23	5,663.23	2,224.32	-30.43	2,224.49	4.32	422,398.12	757,454.87



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Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #1H
TVD Reference: WELL @ 3549.00ft (Silver Oak 10)
MD Reference: WELL @ 3549.00ft (Silver Oak 10)
North Reference: Grd
Survey Calculation Method: Minimum Curvature
Database: 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)
11,374.00	89.96	2.20	9,210.50	5,661.50	2,318.21	-26.42	2,318.35	2.39	422,492.01	757,458.88
11,468.00	88.72	1.17	9,211.58	5,662.58	2,412.16	-23.66	2,412.28	1.71	422,585.96	757,461.64
11,564.00	88.20	0.90	9,214.16	5,665.16	2,508.11	-21.92	2,508.21	0.61	422,681.91	757,463.38
11,659.00	88.46	1.68	9,216.93	5,667.93	2,603.05	-19.79	2,603.12	0.87	422,776.85	757,465.51
11,752.00	91.01	1.53	9,217.36	5,668.36	2,696.00	-17.18	2,696.06	2.75	422,869.80	757,468.12
11,847.00	90.22	1.65	9,216.34	5,667.34	2,790.96	-14.55	2,790.99	0.84	422,964.76	757,470.75
11,941.00	89.78	1.42	9,216.34	5,667.34	2,884.93	-12.03	2,884.93	0.53	423,058.73	757,473.27
12,034.00	89.43	0.83	9,216.98	5,667.98	2,977.91	-10.20	2,977.89	0.74	423,151.71	757,475.10
12,130.00	89.25	0.17	9,218.09	5,669.09	3,073.90	-9.36	3,073.87	0.71	423,247.70	757,475.94
12,225.00	89.25	359.84	9,219.33	5,670.33	3,168.89	-9.36	3,168.86	0.35	423,342.69	757,475.94
12,315.00	91.19	0.80	9,218.99	5,669.99	3,258.88	-8.85	3,258.85	2.41	423,432.68	757,476.45
12,410.00	91.01	1.43	9,217.16	5,668.16	3,353.84	-7.01	3,353.80	0.69	423,527.64	757,478.29
12,504.00	90.84	1.32	9,215.65	5,666.65	3,447.80	-4.75	3,447.74	0.22	423,621.60	757,480.55
12,599.00	91.01	1.90	9,214.11	5,665.11	3,542.75	-2.08	3,542.66	0.64	423,716.55	757,483.22
12,694.00	89.78	2.03	9,213.46	5,664.46	3,637.69	1.18	3,637.57	1.30	423,811.49	757,486.48
12,789.00	91.10	2.07	9,212.73	5,663.73	3,732.63	4.57	3,732.48	1.39	423,906.43	757,489.87
12,884.00	89.09	1.96	9,212.57	5,663.57	3,827.56	7.91	3,827.38	2.12	424,001.36	757,493.21
12,978.00	88.37	1.42	9,214.65	5,665.65	3,921.50	10.69	3,921.29	0.96	424,095.30	757,495.99
13,073.00	89.43	1.21	9,216.48	5,667.48	4,016.46	12.87	4,016.23	1.14	424,190.26	757,498.17
13,166.00	88.37	0.04	9,218.26	5,669.26	4,109.43	13.88	4,109.19	1.70	424,283.23	757,499.18
13,261.00	90.40	0.38	9,219.28	5,670.28	4,204.42	14.23	4,204.18	2.17	424,378.22	757,499.53
13,355.00	91.63	1.19	9,217.62	5,668.62	4,298.39	15.52	4,298.14	1.57	424,472.19	757,500.82
13,450.00	91.54	1.67	9,214.99	5,665.99	4,393.33	17.89	4,393.05	0.51	424,567.13	757,503.19
13,542.00	93.47	1.72	9,210.97	5,661.97	4,485.19	20.60	4,484.89	2.10	424,658.99	757,505.90
13,586.00	93.47	1.72	9,208.31	5,659.31	4,529.09	21.92	4,528.78	0.00	424,702.89	757,507.22

PBHL(Farber#1)



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Company: Yates Petroleum Corp.
Project: Lea County
Site: Farber "BOB" Federal
Well: #1H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #1H
TVD Reference: WELL @ 3549 00ft (Silver Oak 10)
MD Reference: WELL @ 3549 00ft (Silver Oak 10)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Midland Database

Targets

Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
PBHL(Farber#1)	0.00	0.00	9,220.00	4,634.42	-37.01	424,808.225	757,448.292	32° 9' 57.414 N	103° 38' 5.718 W
- survey misses target center by 121.26ft at 13586 00ft MD (9208.31 TVD, 4529.09 N, 21.92 E)									
- Point									

Checked By: _____ Approved By: _____ Date: _____



Project: Lea County
Site: Farber "BOB" Feder
Well: #1H
Wellbore: OH
Plan: Plan #3 (#1H/OH)



Azimuths to Grid North
True North: -0.37°
Magnetic North: 7.41°

Magnetic Field
Strength: 48748.3snT
Dip Angle: 60.17°
Date: 12/08/2009
Model: IGRF200510

PATHFINDER

PROJECT DETAILS Lea 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	DLeg	TFace	VSec Target
1	8737.00	1.09	214.26	8735.14	-31.00	35.29	0.00	0.00	-31.28
2	9494.41	90.00	359.18	9220.00	448.26	23.15	12.00	144.91	448.06
3	13693.00	90.00	359.18	9220.00	4634.43	-36.30	0.00	0.00	4634.57 PBHL(Farber#1)

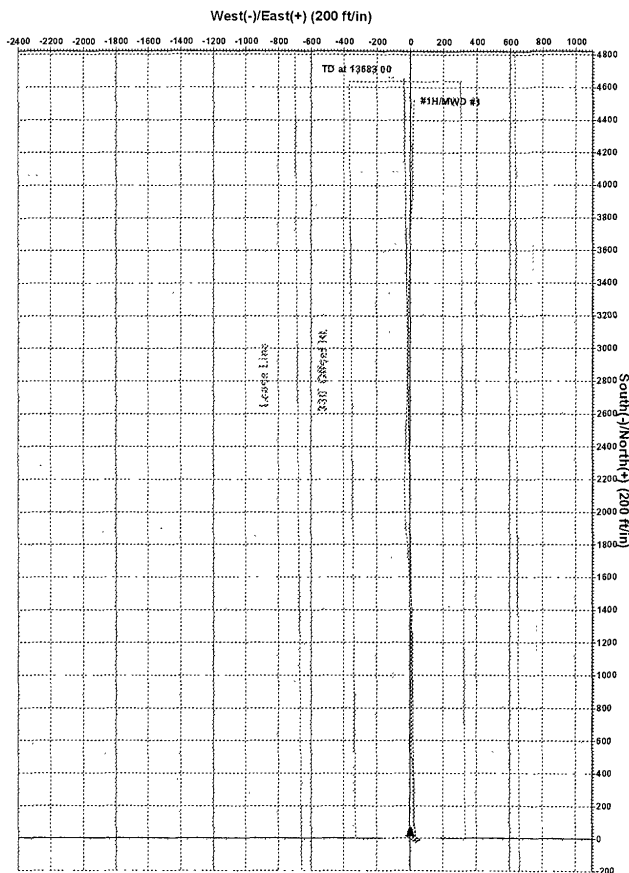
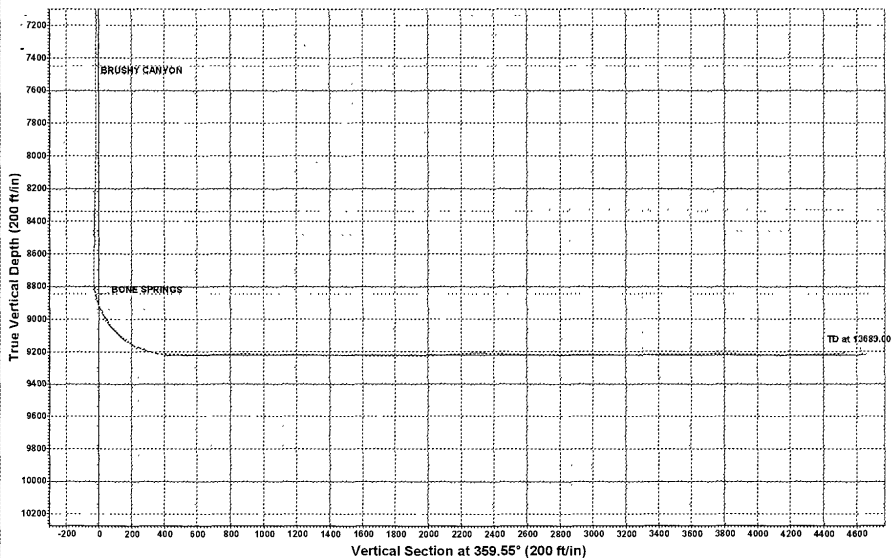
WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
PBHL(Farber#1)	9220.00	4634.42	-37.01	424908.225	757448.292	Point

WELL DETAILS #1H

Ground Elevation: 3531.00
RKB Elevation: WELL @ 3549.00ft (Silver Oak 10)
Rig Name: Silver Oak 10

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	420173.800	757485.300	32° 9' 11.552 N	103° 38' 5.837 W	



Plan Plan #3 (#1H/OH)

Created By: Nate Bingham Date: 8/24/February 11 2010
Checked: _____ Date: _____