



Yates Petroleum Corp.

Eddy County
Haracz "AMO" Federal
#9H
OH

Survey: MWD #1

Pathfinder X & Y Survey Report

15 September, 2009

PATHFINDER



Pathfinder Energy Services
Pathfinder X & Y Survey Report



Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #9H
Project:	Eddy County	TVD Reference:	WELL @ 3567.00ft (18' KB Silver Oak #10)
Site:	Haracz "AMO" Federal	MD Reference:	WELL @ 3567.00ft (18' KB Silver Oak #10)
Well:	#9H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Midland Database

Project: Eddy 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:	Haracz "AMO" Federal
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Site Position:		Northing:	435,667.609 ft	Latitude:	32° 11' 46.845 N
From:	Map	Easting:	724,196.772 ft	Longitude:	103° 44' 31.860 W
Position Uncertainty:	0.00 ft	Slot Radius:	"	Grid Convergence:	0.32 °

Well:	#9H
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Well Position	+N/-S	0.00 ft	Northing:	435,667.609 ft	Latitude:	32° 11' 46.845 N
	+E/-W	0.00 ft	Easting:	724,196.772 ft	Longitude:	103° 44' 31.860 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	3,549.00 ft

Wellbore:	OH
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	08/15/2009	7.87	60.19	48,793

Design:	OH
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Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	359.62

Survey Program:	Date	09/15/2009
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From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
7,779.00	11,890.00	MWD #1 (OH)	MWD	MWD - Standard



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Survey											
MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V-Sec (ft)	DLog (°/100ft)	Northing (ft)	Easting (ft)	
7,740.00	0.50	206.56	7,739.26	4,172.26	17.07	-6.06	17.11	0.00	435,684.68	724,190.71	
7,779.00	0.62	214.39	7,778.26	4,211.26	16.75	-6.25	16.79	0.36	435,684.36	724,190.52	
7,811.00	1.85	52.03	7,810.26	4,243.26	16.92	-5.94	16.96	7.65	435,684.53	724,190.83	
7,843.00	6.24	21.25	7,842.17	4,275.17	18.86	-4.91	18.89	14.83	435,686.47	724,191.87	
7,875.00	11.52	10.85	7,873.78	4,306.78	23.63	-3.67	23.65	17.18	435,691.23	724,193.10	
7,907.00	16.88	5.34	7,904.79	4,337.79	31.40	-2.64	31.41	17.26	435,699.00	724,194.13	
7,939.00	21.63	2.51	7,935.00	4,368.00	41.92	-1.95	41.93	15.12	435,709.53	724,194.82	
7,970.00	26.20	0.50	7,963.33	4,396.33	54.48	-1.64	54.49	14.97	435,722.09	724,195.13	
8,002.00	30.51	358.85	7,991.48	4,424.48	69.67	-1.74	69.68	13.69	435,737.28	724,195.03	
8,033.00	34.91	358.90	8,017.56	4,450.56	86.41	-2.07	86.43	14.19	435,754.02	724,194.70	
8,065.00	37.64	359.80	8,043.35	4,476.35	105.34	-2.28	105.36	8.69	435,772.95	724,194.49	
8,098.00	41.68	359.34	8,068.75	4,501.75	126.40	-2.44	126.41	12.27	435,794.01	724,194.33	
8,130.00	44.93	359.41	8,092.04	4,525.04	148.34	-2.68	148.36	10.16	435,815.95	724,194.09	
8,162.00	46.17	1.60	8,114.45	4,547.45	171.18	-2.47	171.20	6.24	435,838.79	724,194.30	
8,194.00	45.90	1.85	8,136.66	4,569.66	194.21	-1.78	194.21	1.01	435,861.82	724,194.99	
8,225.00	47.92	1.80	8,157.84	4,590.84	216.83	-1.06	216.83	6.52	435,884.44	724,195.71	
8,257.00	51.53	1.74	8,178.52	4,611.52	241.23	-0.30	241.23	11.28	435,908.84	724,196.47	
8,288.00	54.26	1.66	8,197.22	4,630.22	265.94	0.43	265.93	8.81	435,933.55	724,197.20	
8,319.00	55.66	0.84	8,215.02	4,648.02	291.32	0.98	291.30	5.01	435,958.92	724,197.75	
8,349.00	57.68	0.35	8,231.50	4,664.50	316.38	1.24	316.36	6.87	435,983.99	724,198.01	
8,380.00	60.76	359.67	8,247.37	4,680.37	343.01	1.24	342.99	10.11	436,010.62	724,198.01	
8,412.00	63.05	359.59	8,262.43	4,695.43	371.24	1.06	371.22	7.16	436,038.84	724,197.83	
8,444.00	65.51	359.67	8,276.32	4,709.32	400.06	0.87	400.05	7.69	436,067.67	724,197.65	
8,475.00	67.97	358.93	8,288.56	4,721.56	428.54	0.52	428.52	8.23	436,096.15	724,197.30	
8,507.00	70.61	357.96	8,299.88	4,732.88	458.46	-0.29	458.45	8.72	436,126.06	724,196.48	
8,539.00	72.81	358.04	8,309.92	4,742.92	488.82	-1.35	488.82	6.88	436,156.43	724,195.42	
8,570.00	75.27	358.13	8,318.44	4,751.44	518.61	-2.35	518.61	7.94	436,186.21	724,194.43	



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Site:	Haracz "AMO" Federal	MD Reference:	WELL @ 3567.00ft (18' KB Silver Oak #10)
Well:	#9H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	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)	
8,602.00	77.38	357.98	8,326.01	4,759.01	549.68	-3.40	549.69	6.61	436,217.29	724,193.37	
8,634.00	78.61	357.28	8,332.66	4,765.66	580.95	-4.70	580.97	4.40	436,248.56	724,192.08	
8,666.00	80.81	357.23	8,338.38	4,771.38	612.40	-6.20	612.43	6.88	436,280.01	724,190.57	
8,698.00	84.59	357.45	8,342.44	4,775.44	644.10	-7.68	644.14	11.83	436,311.71	724,189.09	
8,760.00	90.57	0.31	8,345.06	4,778.06	706.00	-8.88	706.04	10.69	436,373.61	724,187.89	
8,853.00	91.36	1.35	8,343.50	4,776.50	798.97	-7.54	799.00	1.40	436,466.58	724,189.23	
8,948.00	91.36	3.59	8,341.24	4,774.24	893.85	-3.44	893.85	2.36	436,561.46	724,193.33	
9,042.00	89.69	3.42	8,340.38	4,773.38	987.67	2.30	987.63	1.79	436,655.28	724,199.07	
9,138.00	91.36	3.95	8,339.50	4,772.50	1,083.46	8.47	1,083.38	1.83	436,751.07	724,205.24	
9,233.00	89.69	0.09	8,338.63	4,771.63	1,178.38	11.82	1,178.27	4.43	436,845.99	724,208.59	
9,329.00	89.78	359.44	8,339.07	4,772.07	1,274.38	11.42	1,274.27	0.68	436,941.98	724,208.20	
9,423.00	90.92	359.99	8,338.50	4,771.50	1,368.37	10.96	1,368.27	1.35	437,035.98	724,207.73	
9,519.00	89.78	356.86	8,337.91	4,770.91	1,464.32	8.32	1,464.23	3.47	437,131.93	724,205.09	
9,614.00	90.66	355.96	8,337.55	4,770.55	1,559.13	2.37	1,559.08	1.32	437,226.74	724,199.14	
9,709.00	89.69	353.73	8,337.26	4,770.26	1,653.74	-6.16	1,653.74	2.56	437,321.35	724,190.61	
9,805.00	91.19	354.29	8,336.52	4,769.52	1,749.21	-16.18	1,749.28	1.67	437,416.82	724,180.59	
9,900.00	90.40	353.25	8,335.20	4,768.20	1,843.64	-26.49	1,843.77	1.37	437,511.24	724,170.28	
9,996.00	90.48	352.15	8,334.46	4,767.46	1,938.85	-38.69	1,939.07	1.15	437,606.46	724,158.08	
10,091.00	90.92	352.86	8,333.30	4,766.30	2,033.03	-51.08	2,033.33	0.88	437,700.64	724,145.69	
10,187.00	90.22	354.09	8,332.35	4,765.35	2,128.40	-61.99	2,128.77	1.47	437,796.01	724,134.79	
10,283.00	90.13	354.33	8,332.06	4,765.06	2,223.91	-71.67	2,224.34	0.27	437,891.52	724,125.10	
10,378.00	88.20	356.44	8,333.44	4,766.44	2,318.59	-79.31	2,319.06	3.01	437,986.20	724,117.46	
10,474.00	88.20	359.16	8,336.46	4,769.46	2,414.46	-83.00	2,414.96	2.83	438,082.07	724,113.77	
10,569.00	87.76	358.86	8,339.80	4,772.80	2,509.39	-84.64	2,509.89	0.56	438,176.99	724,112.13	
10,665.00	87.85	359.17	8,343.48	4,776.48	2,605.30	-86.29	2,605.82	0.34	438,272.91	724,110.49	
10,760.00	88.20	359.79	8,346.76	4,779.76	2,700.24	-87.15	2,700.76	0.75	438,367.85	724,109.62	
10,856.00	87.41	359.77	8,350.43	4,783.43	2,796.17	-87.52	2,796.69	0.82	438,463.78	724,109.26	



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Well:	#9H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Midland Database

Survey											
MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	D Leg. (°/100ft)	Northing (ft)	Easting (ft)	
10,951.00	88.20	0.64	8,354.07	4,787.07	2,891.10	-87.18	2,891.61	1.24	438,558.71	724,109.60	
11,047.00	88.46	0.89	8,356.87	4,789.87	2,987.05	-85.90	2,987.55	0.38	438,654.66	724,110.88	
11,142.00	90.04	0.78	8,358.11	4,791.11	3,082.03	-84.51	3,082.52	1.67	438,749.63	724,112.26	
11,238.00	93.03	1.07	8,355.54	4,788.54	3,177.97	-82.96	3,178.45	3.13	438,845.58	724,113.81	
11,333.00	91.63	1.37	8,351.68	4,784.68	3,272.86	-80.94	3,273.33	1.51	438,940.47	724,115.83	
11,429.00	91.98	1.55	8,348.66	4,781.66	3,368.79	-78.50	3,369.23	0.41	439,036.39	724,118.28	
11,523.00	91.28	0.99	8,345.98	4,778.98	3,462.72	-76.41	3,463.15	0.95	439,130.33	724,120.36	
11,614.00	91.01	359.76	8,344.16	4,777.16	3,553.70	-75.82	3,554.13	1.38	439,221.31	724,120.95	
11,703.00	91.71	0.61	8,342.05	4,775.05	3,642.68	-75.53	3,643.10	1.24	439,310.28	724,121.24	
11,795.00	93.12	0.58	8,338.17	4,771.17	3,734.59	-74.58	3,735.00	1.53	439,402.20	724,122.19	
11,845.00	92.77	0.40	8,335.61	4,768.61	3,784.52	-74.15	3,784.93	0.79	439,452.13	724,122.62	
11,890.00	92.77	0.40	8,333.43	4,766.43	3,829.46	-73.84	3,829.87	0.00	439,497.07	724,122.94	
Proj To Bit-11890.00'MD,92.77°INC,0.40°AZI, 8333.43'TVD, 3829.87'VS, 3829.46°N, -73.84°E											



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Site:	Haracz "AMO" Federal	MD Reference:	WELL @ 3567.00ft (18' KB Silver Oak #10)
Well:	#9H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	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(HZ#9H)	0.00	0.00	8,350.00	4,622.68	-30.88	440,290.289	724,165.890	32° 12' 32.591 N	103° 44' 31.924 W
- survey misses by 794.55ft at 11890 00ft MD (8333.43 TVD, 3829 46 N, -73 84 E)									
- Point									

Survey Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
11,890.00	8,333.43	3,829.46	-73.84	Proj To Bit-11890.00MD,92.77°INC,0.40°AZI, 8333.43°TVD, 3829 87°V

Checked By: _____	Approved By: _____	Date: _____
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