

Results of Directional Survey

API number:	30-025-38101		
OGRID:		Operator:	YATES PETROLEUM CORP
		Property:	CAPER BFE FEDERAL # 16H

surface	ULSTR:	M	17	T 21S	R 32E
				330 FSL	990 FWL

BH Loc	ULSTR:	D	17	T 21S	R 32E
12800	MD	8393.6	TVD	4946 FSL	637 FWL

Top Perf/OH	ULSTR:	M	17	T 21S	R 32E
8715	MD	8386.4	TVD	875 FSL	939 FWL

Bot Perf/OH	ULSTR:	D	17	T 21S	R 32E
12740	MD	8393.9	TVD	4887 FSL	641 FWL

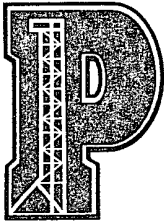
	MD	N/S	E/W	VD
	8670	500.20	-48.83	8384.37
TOP PERFS/OH	8715	545.08	-51.23	8386.41
	8732	562.03	-52.13	8387.18
	12694	4510.75	-345.07	8394.21
BOT PERFS/OH	12740	4556.62	-348.62	8393.93
	12732	4548.64	-348.00	8393.98

NEXT TO LAST	12694	4510.75	-345.07	8394.21
LAST READING	12732	4548.64	-348.00	8393.98
TD	12800	4616.44	-353.24	8393.57

Surface Location	330	FS	990	FW
Projected BHL	4946	FS	637	FW
Location of				
Top Perfs/OH	875	FS	939	FW
Bottom Perfs/OH	4887	FS	641	FW

SUMMARY of Subsurface Locations

Surface Location	M-17-21S-32E	330	FS	990	FW	Vert. Depth
Top Perfs/OH	M-17-21S-32E	875	FS	939	FW	8386.41
Bottom Perfs/OH	D-17-21S-32E	4887	FS	641	FW	8393.93
Projected TD	D-17-21S-32E	4946	FS	637	FW	8393.57



PATRIOT DRILLING, LLC

OPERATOR: Yates Petroleum Corp.
WELL/LEASE: Caper BFE Fed # 16 H
COUNTY: Lea County, New Mexico
Sec. 17, T21S, R32E

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JAN 11 2011
HOBBSOCD

**STATE OF NEW MEXICO
DEVIATION REPORT**

<u>Depth</u>	<u>Deviation</u>	<u>Depth</u>	<u>Deviation</u>
238	3/4	4,410	1 1/4
509	1/4	4,504	1 1/4
816	3/4	4,598	1 1/4
1,124	1	4,787	1
1,312	1 1/4	4,956	3/4
1,499	1 1/4	5,164	1/2
1,688	1 1/4	5,352	1/2
1,875	1 3/4	5,541	1
2,064	1 1/2	5,918	1 3/4
2,158	1	6,106	1
2,818	1 1/4	6,483	3/4
2,912	2 1/2	6,671	3/4
3,006	2 1/2	6,860	1 1/2
3,100	1 3/4	7,047	1 3/4
3,195	1/4	7,235	1 1/2
3,665	1 3/4	7,367	1 3/4
3,760	2	7,742	3 1/2
3,948	2 1/2		
4,042	1 1/4		
4,136	1		
4,230	1 1/4		

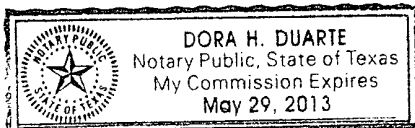
SUR @ M-17-21s-32e, 330/S & 990/W
BHL @ D-17-21s-32e, 4946/S & 637/W
API # 30-025-38101

Patriot Drilling, LLC

M. Leroy Peterson, Executive Vice-President

The foregoing instrument was acknowledged before me on this 4th day of August, 2010 by M. Leroy Peterson, Executive Vice-President of Patriot Drilling, LLC.

My Commission Expires: 5/29/2013



Dora H. Duarte
Notary Public for Midland Co., Texas

PATHFINDER

RECEIVED

An Operating Unit of Smith International, Inc.

JAN 11 2011
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SUR @ M-17-21s-32e, 330/S & 990/W
BHL @ D-17-21s-32e, 4946/S & 637/W
API # 30-025-38101

DIRECTIONAL SURVEY REPORT

YATES PETROLEUM
CAPER "BFE" FEDERAL #16H
LEA COUNTY, NEW MEXICO

PREPARED BY: FRANCISCO SINISTERRA

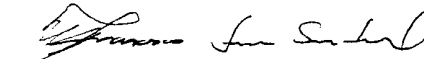
DIRECTIONAL SURVEY COMPANY REPORT:

1. NAME OF SURVEYING COMPANY: PATHFINDER ENERGY SERVICES
2. NAME OF PERSON(S) PERFORMING SURVEY:
A) PAUL FOREMAN
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 07-17-10 TO 07-30-10
5. STATE IN WHICH SURVEY WAS PERFORMED: NEW MEXICO
6. LOCATION OF WELL: LEA COUNTY
7. TYPE OF SURVEY(S) PERFORMED: MWD
8. COMPLETE IDENTIFICATION OF WELL:

YATES PETROLEUM
CAPER "BFE" FEDERAL #16H
LEA COUNTY, NM
RIG: PATRIOT 5

9. SURVEY CERTIFIED FROM: 1312 TO 12732 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE
DISPLACED AT 4629.93 FEET ON A BEARING OF 355.62 DEGREES FROM THE
CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 12800 FEET,
ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.



FRANCISCO SINISTERRA
MWD COORDINATOR

PathFinder Energy Services, Inc.

BHL Report

Page 01/01
Tie-in Date: 07/17/2010
Date Completed: 07/30/2010

YATES PETROLEUM CORPORATION
CAPER "BFE" FEDERAL #16H
LEA COUNTY, NEW MEXICO
Rig: PATRIOT #5
PathFinder Office Supervisor: FRANCISCO SINISTERRA
PathFinder Field Engineers: PAUL FOREMAN

Survey Horiz. Reference: WELLHEAD
Ref Coordinates: LAT: 32.28.20.4000 N LON: 103.42.8.1000 W
GRID Reference: NAD83 new mexico east Transverse Mercator
Ref GRID Coord: X: 735957.9630 Y: 536141.2080
North Aligned To: GRID NORTH
Total Magnetic Correction: 7.44° EAST TO GRID
Vertical Section Plane: 355.55
Survey Vert. Reference: 26.50' Rotary Table To Ground
Altitude: 3628.00' Ground To MSL

Measured Depth	12800.00	(feet)
Inclination	90.48	(deg)
Azimuth	355.52	(deg)
True Vertical Depth	8393.41	(feet)
Vertical Section	4629.92	(feet)
Survey X cord	735604.63	(feet)
Survey Y cord	540757.62	(feet)
Survey Lat	32.48502788 N	(deg)
Survey Lon	103.70330728 W	(deg)
Rectangular Corr. N/S	4616.43 N	(feet)
Rectangular Corr. E/W	353.31 W	(feet)
Closure Distance	4629.93	(feet)
Direction of Closure	355.62	(deg)
Dogleg Severity	0.00	(deg/100ft)

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION
CAPER "BFE" FEDERAL #16H
LEA COUNTY, NEW MEXICO
Rig: PATRIOT #5
PathFinder Office Supervisor: FRANCISCO SINISTERRA
PathFinder Field Engineers: PAUL FOREMAN

Page 01/06
Tie-in Date: 07/17/2010
Date Completed: 07/30/2010

Survey Horiz. Reference: WELLHEAD
Ref Coordinates: LAT: 32.28.20.4000 N LON: 103.42.8.1000 W
GRID Reference: NAD83 new mexico east Transverse Mercator
Ref GRID Coord: X: 735957.9630 Y: 536141.2080
North Aligned To: GRID NORTH
Total Magnetic Correction: 7.44° EAST TO GRID
Vertical Section Plane: 355.55
Survey Vert. Reference: 26.50' Rotary Table To Ground
Altitude: 3628.00' Ground To MSL

Survey Calculations by RX4 using Minimum Curvature

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
THE FOLLOWING ARE MULTISHOT GYRO MULTI-SHOT SURVEYS.										
200.00	0.25	38.34	200.00	0.00	0.32	0.34 N	0.27 E	0.43@	38.77	0.00
400.00	0.41	354.31	400.00	200.00	1.35	1.39 N	0.47 E	1.47@	18.70	0.14
600.00	0.40	348.75	599.99	200.00	2.76	2.79 N	0.26 E	2.80@	5.41	0.02
800.00	0.37	358.78	799.99	200.00	4.10	4.12 N	0.11 E	4.12@	1.59	0.04
1000.00	1.03	255.96	999.98	200.00	4.44	4.33 N	1.64 W	4.63@	339.21	0.59
** TIED INTO MULTISHOT GYRO MULTI-SHOT SURVEY AT 1200'MD.										
1200.00	0.81	238.29	1199.95	200.00	3.50	3.15 N	4.59 W	5.57@	304.46	0.18
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.										
1312.00	1.06	187.41	1311.94	112.00	2.12	1.71 N	5.40 W	5.66@	287.55	0.75
1499.00	1.06	155.81	1498.91	187.00	-1.20	1.59 S	4.91 W	5.16@	252.10	0.31
1688.00	1.14	133.44	1687.87	189.00	-4.24	4.47 S	2.83 W	5.29@	212.31	0.23
1875.00	1.58	73.55	1874.83	187.00	-5.09	5.02 S	0.99 E	5.12@	168.81	0.75
1970.00	1.14	49.03	1969.80	95.00	-4.25	4.03 S	2.96 E	5.00@	143.69	0.76
2064.00	1.49	57.71	2063.78	94.00	-3.12	2.77 S	4.70 E	5.46@	120.47	0.43
2158.00	1.76	29.13	2157.74	94.00	-1.35	0.85 S	6.44 E	6.49@	97.55	0.90
2252.00	1.14	46.93	2251.71	94.00	0.44	1.05 N	7.82 E	7.89@	82.38	0.81
2346.00	1.32	77.29	2345.69	94.00	1.18	1.92 N	9.56 E	9.75@	78.63	0.71
2440.00	1.85	68.14	2439.65	94.00	1.79	2.73 N	12.03 E	12.33@	77.23	0.62
2535.00	2.64	59.00	2534.58	95.00	3.22	4.42 N	15.33 E	15.95@	73.90	0.91
2629.00	2.55	59.43	2628.48	94.00	5.11	6.60 N	18.98 E	20.10@	70.82	0.10
2724.00	0.79	99.27	2723.44	95.00	5.89	7.57 N	21.45 E	22.75@	70.55	2.11
2818.00	1.23	31.38	2817.43	94.00	6.55	8.33 N	22.61 E	24.10@	69.78	1.26
2912.00	2.29	13.85	2911.38	94.00	9.15	11.01 N	23.59 E	26.03@	64.97	1.25
3006.00	2.46	8.73	3005.30	94.00	12.90	14.83 N	24.34 E	28.51@	58.65	0.29
3100.00	1.58	20.49	3099.25	94.00	16.04	18.04 N	25.10 E	30.91@	54.30	1.03

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION
CAPER "BFE" FEDERAL #16H
LEA COUNTY, NEW MEXICO
RIG: PATRIOT #5

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
3195.00	0.18	208.48	3194.23	95.00	17.10	19.14 N	25.49 E	31.87@	53.11	1.85
3289.00	1.32	236.30	3288.22	94.00	16.45	18.40 N	24.52 E	30.66@	53.11	1.24
3383.00	2.29	282.02	3382.18	94.00	16.45	18.20 N	21.78 E	28.38@	50.13	1.77
3496.00	1.85	264.69	3495.11	113.00	17.06	18.50 N	17.76 E	25.64@	43.83	0.67
3571.00	1.67	271.64	3570.07	75.00	17.16	18.42 N	15.46 E	24.04@	40.01	0.37
3665.00	1.58	241.46	3664.04	94.00	16.78	17.84 N	12.95 E	22.04@	35.99	0.90
3760.00	1.76	230.76	3759.00	95.00	15.41	16.29 N	10.67 E	19.47@	33.23	0.38
3854.00	1.76	234.48	3852.95	94.00	13.84	14.54 N	8.38 E	16.78@	29.96	0.12
3948.00	2.29	237.90	3946.89	94.00	12.22	12.70 N	5.61 E	13.88@	23.85	0.58
4042.00	1.23	224.87	4040.85	94.00	10.70	10.99 N	3.31 E	11.47@	16.77	1.20
4136.00	0.97	255.08	4134.83	94.00	9.89	10.07 N	1.83 E	10.23@	10.30	0.67
4230.00	1.14	256.17	4228.82	94.00	9.60	9.64 N	0.15 E	9.64@	0.91	0.18
4410.00	1.23	262.46	4408.78	180.00	9.20	8.96 N	3.50 W	9.62@	338.65	0.09
4504.00	1.14	263.37	4502.76	94.00	9.11	8.72 N	5.43 W	10.27@	328.08	0.10
4598.00	1.06	252.69	4596.74	94.00	8.88	8.35 N	7.19 W	11.02@	319.27	0.23
4787.00	0.97	246.09	4785.71	189.00	7.96	7.18 N	10.32 W	12.57@	304.83	0.08
4976.00	0.62	223.83	4974.69	189.00	6.75	5.79 N	12.49 W	13.77@	294.89	0.24
5164.00	0.53	229.82	5162.68	188.00	5.56	4.50 N	13.86 W	14.57@	287.99	0.06
5352.00	0.53	281.14	5350.68	188.00	5.29	4.11 N	15.38 W	15.92@	284.95	0.24
5541.00	0.88	294.71	5539.66	189.00	6.23	4.88 N	17.55 W	18.22@	285.54	0.20
5729.00	1.41	179.04	5727.64	188.00	4.62	3.17 N	18.83 W	19.09@	279.57	1.04
5918.00	1.67	105.91	5916.59	189.00	1.34	0.09 N	16.14 W	16.14@	270.33	0.98
6106.00	0.97	14.96	6104.55	188.00	1.89	0.88 N	13.09 W	13.12@	273.84	1.03
6294.00	0.44	149.18	6292.54	188.00	2.75	1.80 N	12.31 W	12.44@	278.30	0.70
6483.00	0.62	159.47	6481.54	189.00	1.11	0.22 N	11.58 W	11.58@	271.07	0.11
6671.00	0.53	199.63	6669.53	188.00	-0.66	1.56 S	11.52 W	11.62@	262.31	0.21

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION
CAPER "BFE" FEDERAL #16H
LEA COUNTY, NEW MEXICO
RIG: PATRIOT #5

Page 03/06

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
6860.00	1.49	125.02	6858.50	189.00	-3.02	3.79 S	9.80 W	10.51@	248.86	0.76
7047.00	1.58	127.28	7045.43	187.00	-6.28	6.75 S	5.76 W	8.87@	220.47	0.06
7235.00	1.32	143.87	7233.37	188.00	-9.85	10.07 S	2.42 W	10.35@	193.50	0.26
7367.00	1.58	156.61	7365.33	132.00	-12.86	12.96 S	0.80 W	12.99@	183.52	0.31
7554.00	1.23	231.51	7552.29	187.00	-16.42	16.58 S	1.35 W	16.63@	184.64	0.93
7742.00	3.52	335.14	7740.17	188.00	-12.14	12.60 S	5.35 W	13.69@	203.02	2.12
7836.00	4.04	345.55	7833.96	94.00	-6.18	6.77 S	7.39 W	10.02@	227.51	0.91
7898.00	6.07	353.18	7895.72	62.00	-0.75	1.40 S	8.33 W	8.44@	260.45	3.44
7929.00	8.97	357.24	7926.45	31.00	3.30	2.64 N	8.64 W	9.03@	287.00	9.50
7960.00	11.61	359.65	7956.95	31.00	8.83	8.18 N	8.77 W	11.99@	312.98	8.63
8023.00	16.71	0.85	8018.01	63.00	24.18	23.58 N	8.68 W	25.13@	339.80	8.11
8085.00	22.86	1.99	8076.33	62.00	45.05	44.55 N	8.13 W	45.28@	349.66	9.94
8116.00	25.85	2.54	8104.57	31.00	57.74	57.32 N	7.62 W	57.83@	352.43	9.67
8141.00	27.52	2.89	8126.90	25.00	68.88	68.54 N	7.08 W	68.90@	354.10	6.71
8178.00	29.63	2.16	8159.39	37.00	86.44	86.21 N	6.31 W	86.44@	355.81	5.78
8209.00	32.36	358.27	8185.97	31.00	102.35	102.17 N	6.27 W	102.36@	356.49	10.92
8240.00	38.51	351.47	8211.22	31.00	120.29	120.03 N	7.95 W	120.29@	356.21	23.54
8271.00	45.81	348.68	8234.19	31.00	140.98	140.50 N	11.57 W	140.98@	355.29	24.31
8302.00	51.09	348.20	8254.74	31.00	163.99	163.22 N	16.22 W	164.03@	354.32	17.07
8333.00	55.22	350.16	8273.33	31.00	188.64	187.58 N	20.87 W	188.74@	353.65	14.25
8365.00	58.21	350.60	8290.89	32.00	215.28	213.96 N	25.34 W	215.45@	353.25	9.41
8397.00	60.50	350.84	8307.20	32.00	242.71	241.12 N	29.78 W	242.96@	352.96	7.18
8428.00	63.49	352.25	8321.75	31.00	270.01	268.19 N	33.79 W	270.31@	352.82	10.45
8459.00	67.62	354.00	8334.58	31.00	298.20	296.20 N	37.16 W	298.53@	352.85	14.28
8482.00	70.87	354.18	8342.73	23.00	319.69	317.59 N	39.38 W	320.03@	352.93	14.15
8513.00	73.51	355.48	8352.21	31.00	349.20	346.99 N	42.04 W	349.52@	353.09	9.41

PathFinder Energy Services, Inc.

Survey Report

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LEA COUNTY, NEW MEXICO
RIG: PATRIOT #5

Page 04/06

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
8545.00	74.57	356.41	8361.01	32.00	379.97	377.67 N	44.21 W	380.25@	353.32	4.33
8576.00	76.41	357.78	8368.78	31.00	409.97	407.65 N	45.73 W	410.20@	353.60	7.32
8639.00	81.60	358.36	8380.79	63.00	471.73	469.43 N	47.81 W	471.86@	354.18	8.29
8670.00	85.12	357.83	8384.37	31.00	502.48	500.20 N	48.83 W	502.58@	354.42	11.48
8732.00	89.69	356.07	8387.18	62.00	564.38	562.03 N	52.13 W	564.45@	354.70	7.90
8763.00	89.78	356.21	8387.32	31.00	595.38	592.96 N	54.22 W	595.44@	354.78	0.54
8857.00	89.34	356.77	8388.04	94.00	689.36	686.78 N	59.97 W	689.40@	355.01	0.76
8950.00	91.28	354.03	8387.54	93.00	782.35	779.47 N	67.43 W	782.38@	355.06	3.61
9044.00	91.89	354.49	8384.94	94.00	876.29	872.96 N	76.83 W	876.33@	354.97	0.81
9137.00	90.31	353.03	8383.16	93.00	969.22	965.39 N	86.93 W	969.29@	354.85	2.31
9231.00	90.31	353.05	8382.65	94.00	1063.13	1058.69 N	98.32 W	1063.25@	354.69	0.02
9325.00	90.48	354.49	8382.00	94.00	1157.08	1152.13 N	108.52 W	1157.23@	354.62	1.54
9418.00	90.48	355.29	8381.22	93.00	1250.07	1244.76 N	116.81 W	1250.23@	354.64	0.86
9512.00	90.31	355.95	8380.57	94.00	1344.07	1338.48 N	123.98 W	1344.21@	354.71	0.72
9605.00	90.31	356.86	8380.07	93.00	1437.05	1431.30 N	129.82 W	1437.17@	354.82	0.98
9699.00	91.71	357.34	8378.41	94.00	1531.00	1525.16 N	134.57 W	1531.08@	354.96	1.58
9792.00	90.66	357.90	8376.49	93.00	1623.92	1618.06 N	138.43 W	1623.97@	355.11	1.28
9885.00	91.10	357.15	8375.06	93.00	1716.85	1710.96 N	142.45 W	1716.88@	355.24	0.93
9979.00	90.84	357.72	8373.47	94.00	1810.79	1804.85 N	146.65 W	1810.80@	355.35	0.67
10073.00	90.57	356.61	8372.31	94.00	1904.74	1898.73 N	151.30 W	1904.75@	355.44	1.22
10167.00	89.78	356.45	8372.02	94.00	1998.73	1992.55 N	156.99 W	1998.73@	355.50	0.86
10261.00	92.24	356.09	8370.37	94.00	2092.70	2086.33 N	163.11 W	2092.70@	355.53	2.65
10355.00	91.80	355.43	8367.05	94.00	2186.64	2180.02 N	170.05 W	2186.64@	355.54	0.84
10448.00	90.75	353.09	8364.99	93.00	2279.58	2272.52 N	179.35 W	2279.58@	355.49	2.76
10542.00	90.48	352.99	8363.98	94.00	2373.49	2365.82 N	190.74 W	2373.50@	355.39	0.31
10635.00	89.87	353.38	8363.69	93.00	2466.41	2458.16 N	201.78 W	2466.43@	355.31	0.78

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION
CAPER "BFE" FEDERAL #16H
LEA COUNTY, NEW MEXICO
RIG: PATRIOT #5

Page 05/06

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets		Closure Dist Dir		DLS (dg/100ft)
						(ft)	(ft)	(ft)	(deg)	
10728.00	87.85	353.13	8365.54	93.00	2559.31	2550.50 N	212.70 W	2559.35@	355.23	2.19
10822.00	89.60	353.31	8367.63	94.00	2653.21	2643.81 N	223.79 W	2653.27@	355.16	1.87
10915.00	91.36	354.13	8366.85	93.00	2746.15	2736.25 N	233.96 W	2746.23@	355.11	2.09
11009.00	90.57	354.34	8365.27	94.00	2840.11	2829.76 N	243.40 W	2840.21@	355.08	0.87
11102.00	90.04	354.49	8364.78	93.00	2933.09	2922.31 N	252.45 W	2933.20@	355.06	0.59
11195.00	90.22	355.55	8364.57	93.00	3026.09	3014.96 N	260.53 W	3026.20@	355.06	1.16
11288.00	89.69	356.19	8364.64	93.00	3119.08	3107.72 N	267.22 W	3119.19@	355.09	0.89
11382.00	90.57	355.87	8364.43	94.00	3213.08	3201.49 N	273.73 W	3213.17@	355.11	1.00
11476.00	90.31	356.43	8363.70	94.00	3307.07	3295.28 N	280.04 W	3307.15@	355.14	0.66
11569.00	89.60	356.55	8363.78	93.00	3400.06	3388.10 N	285.74 W	3400.13@	355.18	0.77
11664.00	89.16	356.85	8364.80	95.00	3495.03	3482.94 N	291.21 W	3495.09@	355.22	0.56
11757.00	89.52	358.60	8365.88	93.00	3587.96	3575.85 N	294.90 W	3587.99@	355.29	1.92
11850.00	89.60	358.54	8366.59	93.00	3680.82	3668.82 N	297.22 W	3680.84@	355.37	0.11
11944.00	89.69	357.35	8367.17	94.00	3774.74	3762.76 N	300.59 W	3774.75@	355.43	1.27
12038.00	87.85	357.67	8369.19	94.00	3868.66	3856.64 N	304.67 W	3868.66@	355.48	1.99
12132.00	87.41	357.76	8373.08	94.00	3962.51	3950.49 N	308.42 W	3962.51@	355.54	0.48
12225.00	86.88	358.00	8377.71	93.00	4055.32	4043.31 N	311.85 W	4055.32@	355.59	0.63
12319.00	87.14	355.81	8382.61	94.00	4149.16	4137.04 N	316.92 W	4149.16@	355.62	2.34
12413.00	86.97	355.62	8387.44	94.00	4243.03	4230.65 N	323.93 W	4243.04@	355.62	0.27
12507.00	88.81	355.40	8390.90	94.00	4336.96	4324.30 N	331.29 W	4336.97@	355.62	1.97
12601.00	88.46	356.02	8393.14	94.00	4430.94	4418.00 N	338.32 W	4430.94@	355.62	0.76
12694.00	90.22	355.65	8394.21	93.00	4523.93	4510.75 N	345.07 W	4523.93@	355.63	1.93
12732.00	90.48	355.52	8393.98	38.00	4561.92	4548.64 N	348.00 W	4561.93@	355.63	0.76
STRAIGHT LINE PROJECTION TO BIT AT 12800' MD.										
12800.00	90.48	355.52	8393.41	68.00	4629.92	4616.43 N	353.31 W	4629.93@	355.62	0.00

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION
CAPER "BFE" FEDERAL #16H
LEA COUNTY, NEW MEXICO
RIG:PATRIOT #5

Page 06/06

** The survey data at tie-in point was furnished by a recognized survey company and entered as submitted. Survey stations above the tie-in point represent recalculated data by PathFinder Energy Services, Inc. and may reflect minor changes due to rounding differences between survey programs. Only survey stations taken by qualified PathFinder personnel are subject to certification.

FINDER

ENERGY SERVICES

TIE-IN SURVEY INFORMATION SHEET

CLIENT INFORMATION

CLIENT:	YATES PETROLEUM CORPORATION		
LEASE / WELL No.:	CAPER "BFE" FEDERAL	16H	
WELL LOCATION:	LEA COUNTY		
COUNTY / STATE / COUNTRY:	LEA	NEW MEXICO	USA
RIG:	PATRIOT # 5		
API WELL No:	30-025-38101		
JOB No:	101010942 WT-WT		
P.O. / AFE No.			
DIRECTIONAL COMPANY:	PATHFINDER ENERGY		

WELL SITE INFORMATION

MAGNETIC DECLINATION:			
On Wall Plat:	LWD Calculated:	7.44	Agreed Upon: 7.44
X = 735957.963000	Feet	Y = 536141.208000	Feet
SITE LATITUDE: 32.472333	SITE LONGITUDE: 103.70225		
GRID SYSTEM: TRUE ☐ UTM ☒ LAMBERT ☐	ZONE: New Mexico East		
PROPOSED DRIFT DIRECTION:	0		
KELLY BUSHING ELEVATION:	26.5		
ALTITUDE: 3628	Feet	WATER DEPTH:	Feet

TIE-IN SURVEY

MEASURED DEPTH:	1200	0	
DRIFT ANGLE:	0.81	0	
DRIFT DIRECTION:	238.29	0	
TRUE VERTICAL DEPTH:	1199.95	0	
VERTICAL SECTION:	3.5	0	
RECTANGULAR COORDINATE (N / S):	3.15	0	
RECTANGULAR COORDINATE (E / W):	4.59	0	
CLOSURE DISTANCE / DIRECTION:	0 5.57	0 304.46	
SURVEY CALCULATION METHOD:	AA ☐	MC ☒	RC ☐ BT ☐
SOURCE OF TIE-IN DATA (COMPANY):	multishot GYRO.		
COPY OF TIE-IN SURVEY REPORT	☒ YES ☐ NO		

WELL PLAN

KICKOFF DEPTH: /	TOTAL DEPTH: /
KICKOFF ANGLE: /	MAX ANGLE: /

PES Engineers: Paul Foreman
Jeremy Snow

**Signature of both field engineers required if applicable

Directional Driller: Irby LeJune

DATE: 17-Jul-2010



Company: YATES PETROLEUM CORPORATION	Operator: JOE SABA
Lease / Well: CAPER "BFE" FEDERAL # 16H	Job #: SVCO100600
County/Parish: LEA COUNTY	Probe Serial #: 426
State: NEW MEXICO	Proposed Direction: 355.55
Date: 7/18/2010	Mag. Declination: 7.44 EAST TO GRID
RKB: 26.5 FT	Comments: PATRIOT DRILLING RIG # 5

FIELD USE ONLY, DEFINITIVE SURVEY WILL COME FROM MS Survey OFFICES

TIE-IN Survey					
Measured Depth (ft.)	Inclination	Azimuth	Vertical	Coordinates	
		Bearing	Depth	(+N/-S)	(+E/-W)
0	0.00	0.00	0.00	0.00	0.00

Rate Gyro Survey Report									
Measured Depth (ft.)	Inclination	Azimuth Bearing	Vertical Depth	Vertical Section	Coordinates (+N/-S)	Coordinates (+E/-W)	Dog-Leg / 100 ft.	Closure Distance	Closure Direction
200	0.25	38.34	200.00	0.32	0.34	0.27	0.12	0.44	38.34°
400	0.41	354.31	400.00	1.36	1.40	0.47	0.14	1.47	18.62°
600	0.40	348.75	599.99	2.76	2.79	0.26	0.02	2.81	5.38°
800	0.37	358.78	799.99	4.10	4.12	0.11	0.04	4.13	1.57°
1000	1.03	255.96	999.98	4.45	4.33	-1.64	0.58	4.63	339.22°
1200	0.81	238.29	1199.95	3.50	3.15	-4.59	0.18	5.57	304.49°

PathFinder Energy Services, Inc.

Magnetic & Grid Calculations

YATES PETROLEUM
CAPER BFE FED COM #16H
LEA COUNTY, NEW MEXICO
Rig: PATRIOT #5

Wed Jul 14 14:15:48 2010

Coordinates

Latitude: 32.472333 N (32 deg. 28 min. 20.4000 sec.)
Longitude: 103.702250 W (-103 deg. 42 min. 8.1000 sec.)
Elevation: 3654.50 feet.
Calculation Date: Jul/14/2010

Magnetic Calculations

Model: IGRF2010
Dip Angle: 60.4179 degrees
Total Magnetic Field: 0.48843 gauss
Magnetic Declination: 7.777361 degrees
Horizontal Intensity: 0.241123 gauss
To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.777361 Degr.

Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east
Ellipsoid: GRS80
X: 735957.9630 feet
Y: 536141.2080 feet
True to Grid: (convergence) -0.338834 degrees
Magnetic to Grid: 7.438527 degrees
To Convert a Magnetic Dir. to a GRID dir. Add 7.438527 Degr.

PathFinder Energy Services, Inc.

Magnetic & Grid Calculations

Field
Calculations

YATES PETROLEUM CORPORATION
CAPER "BFE" FEDERAL #16H
LEA COUNTY
Rig: PATROT #5

Sat Jul 17 11:24:52 2010

Coordinates

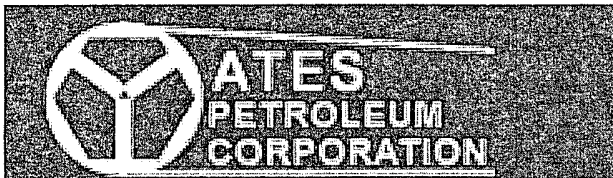
Latitude: 32.472333 N (32 deg. 28 min. 20.4000 sec.)
Longitude: 103.702250 W (-103 deg. 42 min. 8.1000 sec.)
Elevation: 3654.50 feet.
Calculation Date: Jul/17/2010

Magnetic Calculations

Model: IGRF2010
Dip Angle: 60.4177 degrees
Total Magnetic Field: 0.48842 gauss
Magnetic Declination: 7.776357 degrees
Horizontal Intensity: 0.241119 gauss
To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.776357 Degr

Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east
Ellipsoid: GRS80
X: 735957.9630 feet
Y: 536141.2080 feet
True to Grid: (convergence) -0.338834 degrees
Magnetic to Grid: 7.437523 degrees
To Convert a Magnetic Dir. to a GRID dir. Add 7.437523 Degr.



Yates Petroleum Corp.

Lea County
Caper "BFE" Federal
#16H
OH

Survey: MWD #1

Yates Planning Report

29 September, 2010

PATHFINDER®
A Schlumberger Company

SUR @ M-17-21s-32e, 330/S & 990/W
BHL @ D-17-21s-32e, 4946/S & 637/W
API # 30-025-38101



Pathfinder Yates Planning Report

PATHFINDER
A Schlumberger Company

Company: Yates Petroleum Corp.
Project: Lea County
Site: Capex "BFE" Federal
Well: #16H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #16H
TVD Reference: Patriot #5 @ 3654.50ft (26.5' KB Correction)
MD Reference: Patriot #5 @ 3654.50ft (26.5' KB Correction)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Midland Database

Project: Lea County

Map System: US State Plane 1983
Geo Datum: North American Datum 1983
Map Zone: New Mexico Eastern Zone

System Datum: Mean Sea Level

Site: Capex "BFE" Federal

Site Position: Northing: 540,809.186 ft Latitude: 32° 29' 6.357 N
From: Map Easting: 739,905.599 ft Longitude: 103° 41' 21.691 W
Position Uncertainty: 0.00 ft Slot Radius: " Grid Convergence: 0.35 °

Well: #16H

Well Position +N/-S 0.00 ft Northing: 536,141.208 ft Latitude: 32° 28' 20.400 N
+E/-W 0.00 ft Easting: 735,957.963 ft Longitude: 103° 42' 8.100 W
Position Uncertainty 0.00 ft Wellhead Elevation: ft Ground Level: 3,628.00 ft

Wellbore: OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	07/15/10	7.76	60.44	48,875

Design: OH

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	355.55

Survey Program: Date 09/29/10

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
200.00	12,800.00	MWD #1 (OH)	MWD	MWD - Standard



Pathfinder Yates Planning Report

PATHFINDER
A Schlumberger Company

Company: Yates Petroleum Corp.
Project: Lea County
Site: Caper "BRE" Federal
Well: #16H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #16H
TVD Reference: Patriot #5 @ 3654.50ft (26.5' KB Correction)
MD Reference: Patriot #5 @ 3654.50ft (26.5' KB Correction)
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)	
0.00	0.00	0.00	0.00	-3,654.50	0.00	0.00	0.00	0.00	536,141.21	735,957.96	
200.00	0.25	38.34	200.00	-3,454.50	0.34	0.27	0.32	0.12	536,141.55	735,958.23	
400.00	0.41	354.31	400.00	-3,254.50	1.40	0.47	1.36	0.14	536,142.60	735,958.43	
600.00	0.40	348.75	599.99	-3,054.51	2.79	0.26	2.76	0.02	536,144.00	735,958.23	
800.00	0.37	358.78	799.99	-2,854.51	4.12	0.11	4.10	0.04	536,145.33	735,958.08	
1,000.00	1.03	255.96	999.98	-2,654.52	4.33	-1.64	4.45	0.58	536,145.54	735,956.32	
1,200.00	0.81	238.29	1,199.95	-2,454.55	3.15	-4.59	3.50	0.18	536,144.36	735,953.37	
1,312.00	1.06	187.41	1,311.94	-2,342.56	1.71	-5.40	2.12	0.74	536,142.92	735,952.56	
1,397.78	1.02	172.95	1,397.70	-2,256.80	0.17	-5.41	0.58	0.31	536,141.37	735,952.56	
Crosses Into H.L. -1397.78'MD,1.02°INC,172.95°AZI, 1397.70'TVD, 0.58°VS, 0.17°N, -5.41°E											
1,499.00	1.06	155.81	1,498.91	-2,155.59	-1.58	-4.91	-1.20	0.31	536,139.63	735,953.05	
1,688.00	1.14	133.44	1,687.87	-1,966.63	-4.47	-2.83	-4.24	0.23	536,136.74	735,955.13	
1,875.00	1.58	73.55	1,874.83	-1,779.67	-5.02	0.99	-5.08	0.75	536,136.19	735,958.96	
1,970.00	1.14	49.03	1,969.80	-1,684.70	-4.03	2.96	-4.25	0.76	536,137.18	735,960.93	
2,064.00	1.49	57.71	2,063.78	-1,590.72	-2.76	4.70	-3.12	0.43	536,138.45	735,962.66	
2,158.00	1.76	29.13	2,157.74	-1,496.76	-0.85	6.44	-1.35	0.90	536,140.36	735,964.40	
2,252.00	1.14	46.93	2,251.71	-1,402.79	1.05	7.82	0.44	0.81	536,142.26	735,965.79	
2,346.00	1.32	77.29	2,345.69	-1,308.81	1.93	9.56	1.18	0.71	536,143.14	735,967.53	
2,440.00	1.85	68.14	2,439.65	-1,214.85	2.73	12.03	1.79	0.62	536,143.94	735,969.99	
2,535.00	2.64	59.00	2,534.58	-1,119.92	4.43	15.33	3.23	0.91	536,145.64	735,973.29	
2,629.00	2.55	59.47	2,628.48	-1,026.02	6.61	18.98	5.11	0.10	536,147.81	735,976.95	
2,724.00	0.79	99.27	2,723.44	-931.06	7.57	21.45	5.89	2.11	536,148.78	735,979.41	
2,818.00	1.23	31.38	2,817.43	-837.07	8.33	22.61	6.55	1.26	536,149.54	735,980.58	
2,912.00	2.29	13.85	2,911.38	-743.12	11.02	23.59	9.15	1.25	536,152.22	735,981.55	
3,006.00	2.46	8.73	3,005.30	-649.20	14.83	24.34	12.90	0.29	536,156.04	735,982.31	
3,100.00	1.58	20.49	3,099.25	-555.25	18.04	25.10	16.04	1.03	536,159.25	735,983.07	
3,195.00	0.18	208.48	3,194.23	-460.27	19.14	25.49	17.10	1.85	536,160.34	735,983.45	



Pathfinder Yates Planning Report

PATHFINDER
A Schlumberger Company

Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #16H
Project:	Lea County	TVD Reference:	Patriot #5 @ 3654.50ft (26.5' KB Correction)
Site:	Caper "BFE" Federal	MD Reference:	Patriot #5 @ 3654.50ft (26.5' KB Correction)
Well:	#16H	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)	
3,289.00	1.32	236.30	3,288.22	-366.28	18.41	24.52	16.45	1.24	536,159.61	735,982.48	
3,383.00	2.29	282.02	3,382.18	-272.32	18.20	21.78	16.45	1.77	536,159.40	735,979.75	
3,496.00	1.85	264.64	3,495.11	-159.39	18.50	17.76	17.06	0.67	536,159.70	735,975.72	
3,571.00	1.67	271.64	3,570.07	-84.43	18.41	15.46	17.16	0.37	536,159.62	735,973.42	
3,665.00	1.58	241.46	3,664.04	9.54	17.83	12.95	16.78	0.90	536,159.04	735,970.92	
3,760.00	1.76	230.76	3,759.00	104.50	16.29	10.67	15.41	0.38	536,157.49	735,968.64	
3,854.00	1.76	234.48	3,852.95	198.45	14.53	8.38	13.84	0.12	536,155.74	735,966.34	
3,948.00	2.29	237.90	3,946.89	292.39	12.70	5.61	12.22	0.58	536,153.91	735,963.58	
4,005.73	1.63	231.90	4,004.59	350.09	11.58	3.99	11.23	1.20	536,152.79	735,961.95	
Crosses Out of H.L. -4005.73°MD,1.63°INC,231.90°AZI, 4004.59°TVD, 11.23°VS, 11.58°N, 3.99°E											
4,042.00	1.23	224.87	4,040.85	386.35	10.98	3.31	10.69	1.20	536,152.19	735,961.27	
4,136.00	0.97	255.08	4,134.83	480.33	10.06	1.83	9.89	0.67	536,151.27	735,959.79	
4,230.00	1.14	256.17	4,228.82	574.32	9.64	0.15	9.60	0.18	536,150.84	735,958.12	
4,410.00	1.23	262.46	4,408.78	754.28	8.95	-3.50	9.20	0.09	536,150.16	735,954.46	
4,504.00	1.14	263.37	4,502.76	848.26	8.71	-5.43	9.11	0.10	536,149.92	735,952.53	
4,598.00	1.06	252.69	4,596.74	942.24	8.35	-7.19	8.88	0.23	536,149.56	735,950.78	
4,787.00	0.97	246.09	4,785.71	1,131.21	7.18	-10.32	7.96	0.08	536,148.39	735,947.64	
4,976.00	0.62	223.83	4,974.69	1,320.19	5.79	-12.49	6.74	0.24	536,147.00	735,945.47	
5,164.00	0.53	229.82	5,162.68	1,508.18	4.50	-13.86	5.56	0.06	536,145.71	735,944.10	
5,352.00	0.53	281.14	5,350.68	1,696.18	4.11	-15.38	5.29	0.24	536,145.31	735,942.59	
5,541.00	0.88	294.71	5,539.66	1,885.16	4.88	-17.55	6.23	0.20	536,146.09	735,940.41	
5,729.00	1.41	179.04	5,727.64	2,073.14	3.17	-18.83	4.62	1.04	536,144.38	735,939.14	
5,911.33	1.63	107.59	5,909.92	2,255.42	0.15	-16.32	1.41	0.98	536,141.35	735,941.64	
Crosses Into H.L. -5911.33°MD,1.63°INC,107.59°AZI, 5909.92°TVD, 1.41°VS, 0.15°N, -16.32°E											
5,918.00	1.67	105.91	5,916.59	2,262.09	0.09	-16.14	1.34	0.98	536,141.30	735,941.83	
6,106.00	0.97	14.96	6,104.55	2,450.05	0.88	-13.09	1.89	1.03	536,142.09	735,944.87	
6,294.00	0.44	149.18	6,292.54	2,638.04	1.80	-12.31	2.75	0.70	536,143.00	735,945.65	



Pathfinder Yates Planning Report

PATHFINDER
A Schlumberger Company

Company: Yates Petroleum Corp.
Project: Lea County
Site: Caper "BFE" Federal
Well: #16H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #16H
TVD Reference: Patriot #5 @ 3654.50ft (26.5' KB Correction)
MD Reference: Patriot #5 @ 3654.50ft (26.5' KB Correction)
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)
6,483.00	0.62	159.47	6,481.54	2,827.04	0.21	-11.58	1.11	0.11	536,141.42	735,946.38
6,671.00	0.53	199.63	6,669.53	3,015.03	-1.56	-11.52	-0.66	0.21	536,139.65	735,946.45
6,860.00	1.49	125.02	6,858.50	3,204.00	-3.79	-9.80	-3.02	0.76	536,137.42	735,948.17
7,047.00	1.58	127.28	7,045.43	3,390.93	-6.75	-5.76	-6.28	0.06	536,134.46	735,952.21
7,235.00	1.32	143.87	7,233.37	3,578.87	-10.07	-2.42	-9.85	0.26	536,131.14	735,955.55
7,367.00	1.58	156.61	7,365.33	3,710.83	-12.96	-0.80	-12.86	0.31	536,128.24	735,957.17
7,554.00	1.23	231.51	7,552.29	3,897.79	-16.58	-1.34	-16.43	0.93	536,124.63	735,956.62
7,742.00	3.52	335.14	7,740.17	4,085.67	-12.60	-5.35	-12.14	2.12	536,128.61	735,952.61
7,836.00	4.04	345.55	7,833.96	4,179.46	-6.77	-7.39	-6.18	0.91	536,134.44	735,950.57
7,898.00	6.07	353.18	7,895.72	4,241.22	-1.40	-8.33	-0.75	3.44	536,139.81	735,949.64
7,913.33	7.50	355.58	7,910.94	4,256.44	0.40	-8.50	1.06	9.50	536,141.61	735,949.46
Crosses Out of H.L. -7913.33'MD,7.50°INC,355.58°AZI, 7910.94'TVD, 1.06°VS, 0.40°N, -8.50°E										
7,929.00	8.97	357.24	7,926.45	4,271.95	2.64	-8.64	3.30	9.50	536,143.85	735,949.33
7,960.00	11.61	359.65	7,956.95	4,302.45	8.17	-8.77	8.83	8.63	536,149.38	735,949.19
8,023.00	16.71	0.85	8,018.01	4,363.51	23.58	-8.68	24.18	8.11	536,164.79	735,949.29
8,085.00	22.86	1.99	8,076.33	4,421.83	44.55	-8.13	45.04	9.94	536,185.76	735,949.84
8,116.00	25.85	2.54	8,104.56	4,450.06	57.32	-7.62	57.74	9.67	536,198.53	735,950.35
8,141.00	27.52	2.89	8,126.90	4,472.40	68.53	-7.08	68.88	6.71	536,209.74	735,950.88
8,178.00	29.63	2.16	8,159.39	4,504.89	86.21	-6.31	86.44	5.78	536,227.42	735,951.65
8,209.00	32.36	358.27	8,185.97	4,531.47	102.17	-6.27	102.35	10.92	536,243.38	735,951.69
8,240.00	38.51	351.47	8,211.22	4,556.72	120.03	-7.95	120.28	23.54	536,261.24	735,950.01
8,271.00	45.81	348.68	8,234.19	4,579.69	140.50	-11.57	140.97	24.31	536,281.71	735,946.39
8,302.00	51.09	348.20	8,254.74	4,600.24	163.22	-16.22	163.99	17.07	536,304.43	735,941.74
8,333.00	55.22	350.16	8,273.33	4,618.83	187.58	-20.87	188.64	14.25	536,328.79	735,937.09
8,365.00	58.21	350.60	8,290.89	4,636.39	213.95	-25.34	215.27	9.41	536,355.16	735,932.63
8,397.00	60.50	350.84	8,307.20	4,652.70	241.12	-29.77	242.71	7.19	536,382.33	735,928.19
8,428.00	63.49	352.25	8,321.75	4,667.25	268.19	-33.79	270.01	10.45	536,409.40	735,924.17



Pathfinder Yates Planning Report

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Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
8,459.00	67.62	354.00	8,334.58	4,680.08	296.20	-37.16	298.19	14.28	536,437.41	735,920.80
8,482.00	70.87	354.18	8,342.73	4,688.23	317.59	-39.38	319.69	14.15	536,458.80	735,918.58
8,513.00	73.51	355.48	8,352.21	4,697.71	346.99	-42.03	349.20	9.41	536,488.19	735,915.93
8,545.00	74.57	356.41	8,361.01	4,706.51	377.67	-44.21	379.97	4.33	536,518.88	735,913.75
8,576.00	76.41	357.78	8,368.78	4,714.28	407.64	-45.73	409.96	7.32	536,548.85	735,912.23
8,639.00	81.60	358.36	8,380.79	4,726.29	469.43	-47.81	471.73	8.29	536,610.64	735,910.15
8,670.00	85.12	357.83	8,384.37	4,729.87	500.20	-48.83	502.48	11.48	536,641.41	735,909.13
8,732.00	89.69	356.07	8,387.18	4,732.68	562.03	-52.13	564.38	7.90	536,703.24	735,905.83
8,763.00	89.78	356.21	8,387.32	4,732.82	592.96	-54.22	595.38	0.54	536,734.17	735,903.75
8,857.00	89.34	356.77	8,388.04	4,733.54	686.78	-59.97	689.36	0.76	536,827.99	735,897.99
8,950.00	91.28	354.03	8,387.54	4,733.04	779.47	-67.43	782.35	3.61	536,920.67	735,890.54
9,044.00	91.89	354.49	8,384.94	4,730.44	872.96	-76.83	876.29	0.81	537,014.17	735,881.14
9,137.00	90.31	353.03	8,383.16	4,728.66	965.39	-86.93	969.22	2.31	537,106.59	735,871.03
9,231.00	90.31	353.05	8,382.65	4,728.15	1,058.69	-98.32	1,063.13	0.02	537,199.90	735,859.64
9,325.00	90.48	354.49	8,382.00	4,727.50	1,152.13	-108.52	1,157.08	1.54	537,293.34	735,849.44
9,418.00	90.48	355.29	8,381.22	4,726.72	1,244.76	-116.81	1,250.07	0.86	537,385.97	735,841.16
9,512.00	90.31	355.95	8,380.57	4,726.07	1,338.48	-123.98	1,344.07	0.73	537,479.69	735,833.98
9,605.00	90.31	356.86	8,380.07	4,725.57	1,431.30	-129.82	1,437.05	0.98	537,572.50	735,828.15
9,699.00	91.71	357.34	8,378.41	4,723.91	1,525.16	-134.57	1,531.00	1.57	537,666.37	735,823.39
9,792.00	90.66	357.90	8,376.49	4,721.99	1,618.06	-138.43	1,623.92	1.28	537,759.26	735,819.53
9,885.00	91.10	357.15	8,375.06	4,720.56	1,710.96	-142.45	1,716.85	0.93	537,852.17	735,815.52
9,979.00	90.84	357.72	8,373.47	4,718.97	1,804.85	-146.65	1,810.79	0.67	537,946.06	735,811.31
10,073.00	90.57	356.61	8,372.31	4,717.81	1,898.73	-151.30	1,904.74	1.22	538,039.93	735,806.66
10,167.00	89.78	356.45	8,372.02	4,717.52	1,992.55	-156.99	1,998.73	0.86	538,133.76	735,800.97
10,261.00	92.24	356.09	8,370.37	4,715.87	2,086.33	-163.10	2,092.70	2.64	538,227.54	735,794.86
10,355.00	91.80	355.43	8,367.05	4,712.55	2,180.01	-170.05	2,186.64	0.84	538,321.22	735,787.91
10,448.00	90.75	353.09	8,364.98	4,710.48	2,272.52	-179.35	2,279.58	2.76	538,413.73	735,778.61



Pathfinder Yates Planning Report

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Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
10,542.00	90.48	352.99	8,363.98	4,709.48	2,365.82	-190.74	2,373.49	0.31	538,507.03	735,767.22
10,635.00	89.87	353.38	8,363.69	4,709.19	2,458.16	-201.77	2,466.41	0.78	538,599.37	735,756.19
10,728.00	87.85	353.13	8,365.54	4,711.04	2,550.49	-212.69	2,559.31	2.19	538,691.70	735,745.27
10,822.00	89.60	353.31	8,367.63	4,713.13	2,643.81	-223.79	2,653.20	1.87	538,785.02	735,734.17
10,915.00	91.36	354.13	8,366.85	4,712.35	2,736.24	-233.96	2,746.15	2.09	538,877.45	735,724.00
11,009.00	90.57	354.34	8,365.27	4,710.77	2,829.76	-243.40	2,840.11	0.87	538,970.96	735,714.56
11,102.00	90.04	354.49	8,364.78	4,710.28	2,922.31	-252.45	2,933.09	0.59	539,063.52	735,705.51
11,195.00	90.22	355.55	8,364.57	4,710.07	3,014.96	-260.53	3,026.08	1.16	539,156.17	735,697.44
11,288.00	89.69	356.19	8,364.64	4,710.14	3,107.72	-267.22	3,119.08	0.89	539,248.93	735,690.74
11,382.00	90.57	355.87	8,364.43	4,709.93	3,201.49	-273.73	3,213.08	1.00	539,342.70	735,684.23
11,476.00	90.31	356.43	8,363.70	4,709.20	3,295.27	-280.04	3,307.07	0.66	539,436.48	735,677.92
11,569.00	89.60	356.55	8,363.78	4,709.28	3,388.10	-285.74	3,400.06	0.77	539,529.31	735,672.23
11,664.00	89.16	356.85	8,364.80	4,710.30	3,482.94	-291.20	3,495.03	0.56	539,624.14	735,666.76
11,757.00	89.52	358.60	8,365.88	4,711.38	3,575.85	-294.90	3,587.95	1.92	539,717.06	735,663.07
11,850.00	89.60	358.54	8,366.59	4,712.09	3,668.82	-297.22	3,680.82	0.11	539,810.03	735,660.75
11,944.00	89.69	357.35	8,367.17	4,712.67	3,762.76	-300.59	3,774.74	1.27	539,903.97	735,657.38
12,038.00	87.85	357.67	8,369.19	4,714.69	3,856.64	-304.67	3,868.66	1.99	539,997.85	735,653.29
12,132.00	87.41	357.76	8,373.08	4,718.58	3,950.49	-308.41	3,962.51	0.48	540,091.70	735,649.55
12,225.00	86.88	358.00	8,377.71	4,723.21	4,043.31	-311.85	4,055.32	0.63	540,184.52	735,646.11
12,319.00	87.14	355.81	8,382.61	4,728.11	4,137.04	-316.92	4,149.16	2.34	540,278.25	735,641.04
12,413.00	86.97	355.62	8,387.44	4,732.94	4,230.65	-323.93	4,243.03	0.27	540,371.86	735,634.03
12,507.00	88.81	355.40	8,390.90	4,736.40	4,324.29	-331.29	4,336.96	1.97	540,465.50	735,626.68
12,601.00	88.46	356.02	8,393.14	4,738.64	4,418.00	-338.32	4,430.94	0.76	540,559.21	735,619.65
12,694.00	90.22	355.65	8,394.21	4,739.71	4,510.75	-345.07	4,523.92	1.93	540,651.96	735,612.89
12,732.00	90.48	355.52	8,393.98	4,739.48	4,548.64	-348.00	4,561.92	0.76	540,689.84	735,609.97
12,800.00	90.48	355.52	8,393.41	4,738.91	4,616.43	-353.31	4,629.92	0.00	540,757.63	735,604.66

BHL-12800.00°MD,90.48°INC,355.52°AZI, 8393.41°TVD, 4629.92°VS, 4616.43°N, -353.31°E - PBHL(Caper#16)



Pathfinder
Yates Planning Report

PATHFINDER
A Schlumberger Company

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Project: Lea County
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Wellbore: OH
Design: OH

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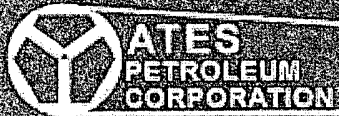
Targets

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(Caper#16)	0.00	0.00	8,390.00	4,617.89	-359.74	540,759.100	735,598.221	32° 29' 6.115 N	103° 42' 11.981 W
- survey misses target center by 7.43ft at 12800.00ft MD (8393.41 TVD, 4616.43 N, -353.31 E)									
- Point									

Survey Annotations

Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
1,397.78	1,397.70	0.17	-5.41	Crosses Into H.L. -1397.78'MD,1.02°INC,172.95°AZI, 1397.70'TVD, 0.5
4,005.73	4,004.59	11.58	3.99	Crosses Out of H.L. -4005.73'MD,1.63°INC,231.90°AZI, 4004.59'TVD, .
5,911.33	5,909.92	0.15	-16.32	Crosses Into H.L. -5911.33'MD,1.63°INC,107.59°AZI, 5909.92'TVD, 1.4
7,913.33	7,910.94	0.40	-8.50	Crosses Out of H.L. -7913.33'MD,7.50°INC,355.58°AZI, 7910.94'TVD, .
12,800.00	8,393.41	4,616.43	-353.31	BHL-12800.00'MD,90.48°INC,355.52°AZI, 8393.41'TVD, 4629.92'VS, 4

Checked By: _____ Approved By: _____ Date: _____



Project: Lea County
Site: Caper "BFE" Feder
Well: #16H
Wellbore: OH
Plan: Plan #2 (#16H/OH)



Azimuths to Grid North
True North: -0.34°
Magnetic North: 7.42°

Magnetic Field
Strength: 48874.9snT
Dip Angle: 60.44°
Date: 07/15/2010
Model: IGRF200510

EOW

PATHFINDER

A Schlumberger Company

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

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	8459.00	67.52	354.00	8334.58	296.20	-37.16	0.00	0.00	298.20	
2	8746.38	90.00	355.75	8390.00	575.21	-62.02	7.81	4.59	578.30	
3	12799.99	90.00	355.75	8390.00	4617.68	-362.43	0.00	0.00	4631.88	PBHL(Caper#16)

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
PBHL(Caper#16)	8390.00	4617.68	-359.74	540759.100	735598.221	Point

WELL DETAILS: #16H

Ground Elevation: 3628.00
RKB Elevation: Patriot #5 @ 3654.50ft (26.5' KB Correction)
Rig Name: 26.5' KB Correction

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	536141.208	735957.863	32° 28' 20.400 N	103° 42' 8.100 W	

