



DIRECTIONAL SURVEY REPORT

YATES PETROLEUM

LINK BKT FEDERAL COM #1H

EDDY COUNTY, NEW MEXICO

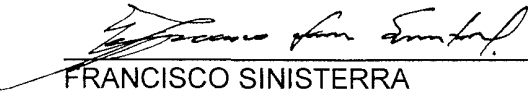
PREPARED BY: FRANCISCO SINISTERRA

DIRECTIONAL SURVEY COMPANY REPORT:

1. NAME OF SURVEYING COMPANY: PATHFINDER ENERGY SERVICES
2. NAME OF PERSON(S) PERFORMING SURVEY:
A) JEFF GARAY
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 01/28/09 TO 02/08/09
5. STATE IN WHICH SURVEY WAS PERFORMED: NEW MEXICO
6. LOCATION OF WELL: EDDY COUNTY
7. TYPE OF SURVEY(S) PERFORMED: MWD
8. COMPLETE IDENTIFICATION OF WELL:

YATES PETROLEUM
LINK BKT FEDERAL COM #1H
EDDY COUNTY, NM
RIG: JW #4
9. SURVEY CERTIFIED FROM: 4,137 TO 9,248 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE DISPLACED AT 4,838.64 FEET ON A BEARING OF 89.58 DEGREES FROM THE CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 9,325 FEET, ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.


FRANCISCO SINISTERRA
M/LWD SERVICE COORDINATOR

PathFinder Energy Services, Inc.

BHL Report

Page 01/01
Tie-in Date: 01/28/2009
Date Completed: 02/08/2009

YATES PETROLEUM CORPORATION
LINK BKT FED COM #1H
EDDY COUNTY, NEW MEXICO
Rig:JW #4
PathFinder Office Supervisor: MIKE EVANS
PathFinder Field Engineers:HAFA DONARUMMA

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.55.30.7652 N LON:104.31.1.1148 W
GRID Reference:NAD83 new mexico east Transverse Mercator
Ref GRID Coord: X: 484989.3720 Y: 700376.0981
North Aligned To:GRID NORTH
Total Magnetic Correction: 8.44° EAST TO GRID
Vertical Section Plane: 90.00
Survey Vert. Reference: 13.00' Kelly Bushing To Ground
Altitude:3550.00' Ground To MSL

Measured Depth	9325.00	(feet)
Inclination	89.34	(deg)
Azimuth	91.04	(deg)
True Vertical Depth.	4848.61	(feet)
Vertical Section	4838.51	(feet)
Survey X cord	489827.88	(feet)
Survey Y cord	700411.19	(feet)
Survey Lat	32.92533119 N	(deg)
Survey Lon	104.50120750 W	(deg)
Rectangular Corr. N/S	35.09 N	(feet)
Rectangular Corr. E/W	4838.51 E	(feet)
Closure Distance	4838.64	(feet)
Direction of Closure	89.58	(deg)
Dogleg Severity	0.00	(deg/100ft)

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION

LINK BKT FED COM #1H

EDDY COUNTY, NEW MEXICO

Rig:JW #4

PathFinder Office Supervisor: MIKE EVANS

PathFinder Field Engineers: HAFA DONARUMMA

Survey Horiz. Reference:WELLHEAD

Ref Coordinates: LAT:32.55.30.7652 N LON:104.31.1.1148 W

Reference:NAD83 new mexico east Transverse Mercator

Ref GRID Coord: X: 484989.3720 Y: 700376.0981

North Aligned To:GRID NORTH

Total Magnetic Correction: 8.44° EAST TO GRID

Vertical Section Plane: 90.00

Survey Vert. Reference: 13.00' Kelly Bushing To Ground

Altitude:3550.00' Ground To MSL

Survey Calculations by PathCalc v1.99 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)
TIE IN TO SCIENTIFIC GYRO @ 4110' MD.										
4110.00	0.39	73.97	4109.32	0.00	23.61	10.37 S	23.61 E	25.79@	113.71	0.00
THE FOLLOWING ARE PATHFINDER MWD SURVEYS @ 4137' MD.										
4137.00	0.53	57.28	4136.32	27.00	23.80	10.28 S	23.80 E	25.93@	113.35	0.71
4159.00	0.44	41.60	4158.32	22.00	23.95	10.16 S	23.95 E	26.01@	112.99	0.73
4191.00	1.14	65.50	4190.31	32.00	24.32	9.94 S	24.32 E	26.27@	112.22	2.37
4223.00	4.75	81.97	4222.27	32.00	25.92	9.62 S	25.92 E	27.65@	110.36	11.47
4254.00	8.79	87.32	4253.05	31.00	29.56	9.33 S	29.56 E	30.99@	107.51	13.18
4286.00	12.93	88.40	4284.47	32.00	35.58	9.11 S	35.58 E	36.73@	104.37	12.95
4318.00	17.06	89.21	4315.37	32.00	43.86	8.95 S	43.86 E	44.76@	101.53	12.92
4350.00	21.10	90.06	4345.61	32.00	54.31	8.89 S	54.31 E	55.04@	99.30	12.65
4382.00	25.24	90.41	4375.02	32.00	66.90	8.94 S	66.90 E	67.50@	97.62	12.94
4413.00	27.52	89.16	4402.79	31.00	80.67	8.89 S	80.67 E	81.16@	96.29	7.57
4445.00	29.63	88.75	4430.89	32.00	95.98	8.61 S	95.98 E	96.36@	95.12	6.62
4477.00	31.48	87.76	4458.44	32.00	112.24	8.11 S	112.24 E	112.53@	94.13	5.99
4508.00	33.94	86.13	4484.53	31.00	128.96	7.21 S	128.96 E	129.16@	93.20	8.43
4540.00	36.23	85.40	4510.71	32.00	147.30	5.84 S	147.30 E	147.42@	92.27	7.28
4572.00	39.22	84.07	4536.02	32.00	166.80	4.04 S	166.80 E	166.84@	91.39	9.68
4603.00	41.86	83.01	4559.58	31.00	186.81	1.77 S	186.81 E	186.82@	90.54	8.80
4635.00	44.93	83.61	4582.82	32.00	208.65	0.79 N	208.65 E	208.65@	89.78	9.68
4667.00	47.57	83.52	4604.95	32.00	231.61	3.38 N	231.61 E	231.64@	89.16	8.25
4698.00	50.65	83.75	4625.24	31.00	254.90	5.98 N	254.90 E	254.97@	88.66	9.95
4730.00	53.99	84.05	4644.80	32.00	280.08	8.67 N	280.08 E	280.22@	88.23	10.46
4762.00	57.86	84.67	4662.72	32.00	306.45	11.27 N	306.45 E	306.66@	87.89	12.20

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION
LINK BKT FED COM #1H
EDDY COUNTY, NEW MEXICO
RIG:JW #4

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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)
4793.00	59.97	85.00	4678.73	31.00	332.89	13.66 N	332.89 E	333.17@	87.65	6.87
4825.00	62.78	84.86	4694.06	32.00	360.87	16.14 N	360.87 E	361.23@	87.44	8.79
4857.00	65.95	84.59	4707.90	32.00	389.59	18.79 N	389.59 E	390.05@	87.24	9.94
4889.00	69.82	83.62	4719.95	32.00	419.08	21.84 N	419.08 E	419.64@	87.02	12.42
4920.00	72.28	83.08	4730.01	31.00	448.20	25.23 N	448.20 E	448.91@	86.78	8.10
4984.00	78.44	81.16	4746.18	64.00	509.50	33.73 N	509.50 E	510.61@	86.21	10.05
5079.00	79.93	81.89	4764.01	95.00	601.79	47.48 N	601.79 E	603.66@	85.49	1.74
5111.00	79.84	81.89	4769.63	32.00	632.98	51.93 N	632.98 E	635.10@	85.31	0.28
5142.00	80.90	82.40	4774.81	31.00	663.25	56.11 N	663.25 E	665.62@	85.16	3.78
5174.00	82.48	82.80	4779.44	32.00	694.65	60.18 N	694.65 E	697.25@	85.05	5.09
5206.00	85.21	83.67	4782.87	32.00	726.24	63.93 N	726.24 E	729.05@	84.97	8.95
5237.00	85.65	83.91	4785.34	31.00	756.96	67.27 N	756.96 E	759.95@	84.92	1.62
5269.00	86.00	83.51	4787.67	32.00	788.69	70.77 N	788.69 E	791.85@	84.87	1.66
5300.00	87.76	83.93	4789.35	31.00	819.45	74.15 N	819.45 E	822.80@	84.83	5.84
5332.00	89.78	84.69	4790.04	32.00	851.29	77.33 N	851.29 E	854.79@	84.81	6.74
5396.00	89.87	84.75	4790.24	64.00	915.01	83.22 N	915.01 E	918.79@	84.80	0.17
5447.00	90.04	85.28	4790.28	51.00	965.82	87.65 N	965.82 E	969.79@	84.81	1.09
5541.00	87.49	85.44	4792.30	94.00	1059.48	95.25 N	1059.48 E	1063.76@	84.86	2.72
5636.00	87.23	87.02	4796.68	95.00	1154.17	101.49 N	1154.17 E	1158.63@	84.97	1.68
5700.00	86.97	87.78	4799.92	64.00	1218.03	104.39 N	1218.03 E	1222.49@	85.10	1.25
5795.00	87.67	88.83	4804.36	95.00	1312.88	107.20 N	1312.88 E	1317.25@	85.33	1.33
5890.00	88.64	90.62	4807.42	95.00	1407.82	107.65 N	1407.82 E	1411.93@	85.63	2.14
5985.00	88.11	90.26	4810.11	95.00	1502.78	106.92 N	1502.78 E	1506.58@	85.93	0.67
6080.00	90.57	91.58	4811.21	95.00	1597.75	105.40 N	1597.75 E	1601.23@	86.23	2.94
6175.00	89.69	90.45	4810.99	95.00	1692.74	103.71 N	1692.74 E	1695.91@	86.49	1.51
6270.00	87.58	89.15	4813.25	95.00	1787.70	104.04 N	1787.70 E	1790.73@	86.67	2.61
6365.00	87.05	89.91	4817.70	95.00	1882.59	104.82 N	1882.59 E	1885.51@	86.81	0.97

PathFinder Energy Services, Inc.

Survey Report

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LINK BKT FED COM #1H
EDDY COUNTY, NEW MEXICO
RIG:JW #4

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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)
6461.00	90.48	93.54	4819.77	96.00	1978.50	101.93 N	1978.50 E	1981.12@	87.05	5.20
6556.00	89.08	92.90	4820.14	95.00	2073.34	96.60 N	2073.34 E	2075.59@	87.33	1.62
6651.00	89.78	94.28	4821.08	95.00	2168.15	90.65 N	2168.15 E	2170.04@	87.61	1.63
6715.00	89.52	94.31	4821.47	64.00	2231.97	85.86 N	2231.97 E	2233.62@	87.80	0.41
6810.00	90.57	95.57	4821.40	95.00	2326.61	77.68 N	2326.61 E	2327.91@	88.09	1.73
6905.00	91.19	94.81	4819.94	95.00	2421.21	69.08 N	2421.21 E	2422.20@	88.37	1.03
7000.00	90.57	94.06	4818.48	95.00	2515.91	61.74 N	2515.91 E	2516.67@	88.59	1.02
7095.00	92.68	94.77	4815.79	95.00	2610.59	54.43 N	2610.59 E	2611.15@	88.81	2.34
7190.00	92.51	94.96	4811.49	95.00	2705.15	46.38 N	2705.15 E	2705.55@	89.02	0.27
7285.00	92.24	94.33	4807.55	95.00	2799.75	38.69 N	2799.75 E	2800.02@	89.21	0.72
7380.00	90.57	93.19	4805.22	95.00	2894.52	32.47 N	2894.52 E	2894.70@	89.36	2.13
7475.00	89.43	91.82	4805.22	95.00	2989.42	28.31 N	2989.42 E	2989.56@	89.46	1.88
7570.00	86.35	89.75	4808.72	95.00	3084.33	27.01 N	3084.33 E	3084.45@	89.50	3.91
7665.00	87.67	89.65	4813.67	95.00	3179.20	27.51 N	3179.20 E	3179.32@	89.50	1.39
7760.00	87.32	89.06	4817.83	95.00	3274.10	28.58 N	3274.10 E	3274.23@	89.50	0.72
7855.00	88.90	90.25	4820.96	95.00	3369.04	29.15 N	3369.04 E	3369.17@	89.50	2.08
7919.00	88.11	89.89	4822.63	64.00	3433.02	29.07 N	3433.02 E	3433.14@	89.51	1.36
8014.00	87.67	89.30	4826.13	95.00	3527.95	29.74 N	3527.95 E	3528.08@	89.52	0.77
8109.00	89.16	89.22	4828.75	95.00	3622.91	30.97 N	3622.91 E	3623.04@	89.51	1.57
8204.00	89.52	89.88	4829.85	95.00	3717.90	31.71 N	3717.90 E	3718.03@	89.51	0.79
8300.00	88.64	88.27	4831.39	96.00	3813.87	33.26 N	3813.87 E	3814.01@	89.50	1.91
8395.00	89.16	89.14	4833.21	95.00	3908.82	35.41 N	3908.82 E	3908.98@	89.48	1.07
8490.00	87.49	87.31	4835.99	95.00	4003.73	38.35 N	4003.73 E	4003.91@	89.45	2.61
8585.00	88.90	89.68	4838.98	95.00	4098.64	40.84 N	4098.64 E	4098.85@	89.43	2.90
8680.00	89.78	90.42	4840.08	95.00	4193.63	40.76 N	4193.63 E	4193.83@	89.44	1.21
8775.00	89.60	90.61	4840.59	95.00	4288.63	39.91 N	4288.63 E	4288.81@	89.47	0.28
8870.00	88.99	89.93	4841.76	95.00	4383.62	39.46 N	4383.62 E	4383.80@	89.48	0.96

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION
 LINK BKT FED COM #1H
 EDDY COUNTY, NEW MEXICO
 RIG:JW #4

Page 04/04

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)
8965.00	88.46	89.54	4843.87	95.00	4478.59	39.90 N	4478.59 E	4478.77@	89.49	0.69
9060.00	89.08	90.32	4845.91	95.00	4573.57	40.01 N	4573.57 E	4573.75@	89.50	1.05
9155.00	89.69	91.47	4846.93	95.00	4668.55	38.53 N	4668.55 E	4668.71@	89.53	1.37
9248.00	89.34	91.04	4847.72	93.00	4761.53	36.49 N	4761.53 E	4761.67@	89.56	0.60
STRAIGHT LINE PROJECTION TO BIT @ 9325' MD.										
9325.00	89.34	91.04	4848.61	77.00	4838.51	35.09 N	4838.51 E	4838.64@	89.58	0.00



TIE-IN SURVEY INFORMATION SHEET

CLIENT INFORMATION

CLIENT:	YATES ENERGY		
LEASE / WELL No.:	LINK BKT FED. COM	#1H	
WELL LOCATION:	EDDY COUNTY		
COUNTY / STATE / COUNTRY:	EDDY COUNTY	NEW MEXICO	USA
RIG:	JW #4		
API WELL No:	30-15-36399		
JOB No:	101008211 WT-WT		
P.O. / AFE No.			
DIRECTIONAL COMPANY:	PATHFINDER ENERGY SERVICES		

WELL SITE INFORMATION

MAGNETIC DECLINATION:			
On Wall Plat:	8.449874	LWD Calculated:	8.44369
		Agreed Upon:	8.44369
X =	484989.372000	Feet	Y = 700376.098000
			Feet
SITE LATITUDE:	32.95213 N	SITE LONGITUDE:	104.516976 W
GRID SYSTEM:	TRUE ☐ UTM ☒ LAMBERT ☐	ZONE:	NEW MEXICO EAST
PROPOSED DRIFT DIRECTION:	90		
KELLY BUSHING ELEVATION:	13		
ALTITUDE:	3550	Feet	WATER DEPTH:
			Feet

TIE-IN SURVEY

MEASURED DEPTH:	4110		
DRIFT ANGLE:	0.39		
DRIFT DIRECTION:	73.97		
TRUE VERTICAL DEPTH:	4109.32		
VERTICAL SECTION:	23.59		
RECTANGULAR COORDINATE (N / S) :	-10.37		
RECTANGULAR COORDINATE (E / W) :	23.61		
CLOSURE DISTANCE / DIRECTION:	25.79	113.71	
SURVEY CALCULATION METHOD:	AA ☐	MC ☒	RC ☐ BT ☐
SOURCE OF TIE-IN DATA (COMPANY):	SCIENTIFIC GYRO.		
COPY OF TIE-IN SURVEY REPORT	☒ YES ☐ NO		

WELL PLAN

KICKOFF DEPTH:	4200	TOTAL DEPTH:	9325
KICKOFF ANGLE:	0.39	MAX ANGLE:	90

PES Engineers: R. DONARUMMA

J. GARAY

**Signature of both field engineers required if applicable

Directional Driller: J. LUJAN

DATE: 8-Feb-2009

SCIENTIFIC DRILLING CONTROLS

Run Survey
for
YATES ENERGY

Page 2

Well No.: LINKS BKT FED COM NO.

Date : 30-JAN-2009

Job No. : 32K0109047

GRID

Proposal : 89.92

Depth	F.V.D.	V.S.	Inc	Azimuth	Latitude	Departure	D-leg
(Feet)	(Feet)	(Feet)	Deg.	Deg.	(Feet)	(Feet)	/100

4000.00	3999.32	23.12	0.18	75.06	-10.51	23.13	0.06
4100.00	4099.32	23.54	0.32	72.55	-10.39	23.55	0.16
4110.00	4109.32	23.59	0.39	73.97	-10.37	23.61	0.71

The Horizontal Displacement (in Feet) at
Measured Depth 4110.00 is 25.7° in a Direction of 113.71 Degrees

PathFinder Energy Services, Inc.

Magnetic & Grid Calculations

Yates Petroleum
Link BKT Fed. Com#1H
Eddy Co., NM
Rig:JW4

Fri Jan 09 17:24:10 2009

Coordinates

Latitude: 32.925213 N (32 deg. 55 min. 30.7652 sec.)
Longitude: 104.516976 W (-104 deg. 31 min. 1.1148 sec.)
Elevation: 3550.00 feet.
Calculation Date: Jan/09/2009

Magnetic Calculations

Model: IGRF2005
Dip Angle: 60.7419 degrees
Total Magnetic Field: 0.49199 gauss
Magnetic Declination: 8.350056 degrees
Horizontal Intensity: 0.240459 gauss
To Convert a Magnetic Dir. to a TRUE North Dir. Add 8.350056 Degr.

Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east
Ellipsoid: GRS80
X: 484989.3720 feet
Y: 700376.0980 feet
True to Grid: (convergence) 0.099818 degrees
Magnetic to Grid: 8.449874 degrees
To Convert a Magnetic Dir. to a GRID dir. Add 8.449874 Degr.