



A Schlumberger Company

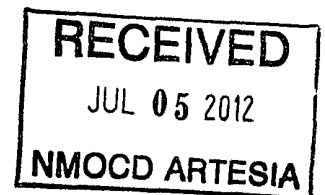
DIRECTIONAL SURVEY REPORT

15-39511

YATES PETROLEUM

HANAGAN "APL" FED COM #2H

EDDY COUNTY, NEW MEXICO



PREPARED BY: JUAN ALCOCER

Pathfinder

6213 WCR 112
Midland, Texas 79706
Tel: (432)687-1647
Fax: (432)687-1544



DIRECTIONAL SURVEY COMPANY REPORT:

1. NAME OF SURVEYING COMPANY: PATHFINDER ENERGY SERVICES
2. NAME OF PERSON(S) PERFORMING SURVEY:
A) JEFF HULL
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 3-31-12 TO 4-12-12
5. STATE IN WHICH SURVEY WAS PERFORMED: NEW MEXICO
6. LOCATION OF WELL: EDDY COUNTY, NM
7. TYPE OF SURVEY(S) PERFORMED: GAMMA-RAY
8. COMPLETE IDENTIFICATION OF WELL:

YATES PETROLEUM
HANAGAN "APL" FED COM #2H
EDDY COUNTY, NM
RIG: SILVER OAK 10
9. SURVEY CERTIFIED FROM: 7,507 TO 12,754 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE DISPLACED AT 4,586.09 FEET ON A BEARING OF 85.42 DEGREES FROM THE CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 12,834 FEET, ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.


JUAN ALCOCER
MWD COORDINATOR

PathFinder Energy Services, Inc.

BHL Report

Page 01/01
Tie-in Date: 03/20/2012
Date Completed: 04/12/2012

YATES PETROLEUM CORPORATION
HANAGAN APL FEDERAL COM #2H
Eddy COUNTY, NM
Rig: Silver Oak 10
PathFinder Office Supervisor: Juan Alcocer
PathFinder Field Engineers: Alfonso Habeych
Cody Bundick
Jeff Hull

Survey Horiz. Reference: WELLHEAD
Ref Coordinates: LAT: 32.36.50.6958 N LON: 104.1.7.5333 W
GRID Reference: NAD83 new mexico east Transverse Mercator
Ref GRID Coord: X: 638196.4010 Y: 587277.1930
North Aligned To: GRID NORTH
Total Magnetic Correction: 7.56° EAST TO GRID
Vertical Section Plane: 85.20
Survey Vert. Reference: 18.00' Rotary Table To Ground
Altitude: 3324.00' Ground To MSL

Measured Depth	12834.00	(feet)
Inclination	90.04	(deg)
Azimuth	86.34	(deg)
True Vertical Depth	8434.84	(feet)
Vertical Section	4586.05	(feet)
Survey X cord	642767.85	(feet)
Survey Y cord	587643.00	(feet)
Survey Lat	32.61504960 N	(deg)
Survey Lon	104.00390882 W	(deg)
Rectangular Corr. N/S	365.83 N	(feet)
Rectangular Corr. E/W	4571.47 E	(feet)
Closure Distance	4586.09	(feet)
Direction of Closure	85.42	(deg)
Dogleg Severity	0.00	(deg/100ft)

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION

HANAGAN APL FEDERAL COM #2H

Eddy COUNTY, NM

Rig:Silver Oak 10

PathFinder Office Supervisor: Juan Alcocer

PathFinder Field Engineers: Alfonso Habeych

Cody Bundick

Jeff Hull

Survey Calculations by RX5 V6.04 using Minimum Curvature

Survey Horiz. Reference:WELLHEAD

Ref Coordinates: LAT:32.36.50.6958 N LON:104.1.7.5333 W

GRID Reference:NAD83 new mexico east Transverse Mercator

Ref GRID Coord: X: 638196.4010 Y: 587277.1930

North Aligned To:GRID NORTH

Total Magnetic Correction: 7.56° EAST TO GRID

Vertical Section Plane: 85.20

Survey Vert. Reference: 18.00' Rotary Table To Ground

Altitude:3324.00' Ground To MSL

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL		Closure		DLS
						Rectangular (ft)	Offsets (ft)	Dist (ft)	Dir (deg)	
THE FOLLOWING ARE MS ENERGY SERVICES GYRO SURVEYS										
200.00	0.25	316.34	200.00	0.00	-0.27	0.31 N	0.30 W	0.43@	316.21	0.00
400.00	0.50	341.90	399.99	200.00	-0.75	1.46 N	0.87 W	1.70@	329.12	0.15
600.00	0.50	293.45	599.98	200.00	-1.72	2.63 N	1.94 W	3.27@	323.58	0.20
800.00	0.25	318.20	799.98	200.00	-2.75	3.31 N	3.03 W	4.49@	317.46	0.15
1000.00	0.75	32.75	999.97	200.00	-2.21	4.73 N	2.62 W	5.41@	331.06	0.36
1200.00	2.25	41.36	1199.90	200.00	1.42	8.78 N	0.69 E	8.81@	4.46	0.76
1400.00	2.00	54.11	1399.76	200.00	7.24	13.77 N	6.11 E	15.07@	23.91	0.27
1600.00	2.00	69.74	1599.64	200.00	13.59	17.03 N	12.21 E	20.95@	35.64	0.27
1800.00	1.25	48.56	1799.56	200.00	18.70	19.68 N	17.12 E	26.08@	41.02	0.48
2000.00	0.75	80.12	1999.53	200.00	21.76	21.35 N	20.04 E	29.28@	43.19	0.36
2200.00	0.75	144.02	2199.52	200.00	23.74	20.51 N	22.10 E	30.15@	47.13	0.40
2400.00	1.00	115.13	2399.50	200.00	25.93	18.71 N	24.45 E	30.79@	52.57	0.25
2600.00	0.75	110.94	2599.47	200.00	28.62	17.50 N	27.25 E	32.39@	57.29	0.13
2800.00	1.25	156.50	2799.44	200.00	30.50	15.04 N	29.35 E	32.97@	62.87	0.45
3000.00	1.50	134.06	2999.39	200.00	32.92	11.21 N	32.10 E	34.00@	70.74	0.30
3200.00	1.00	142.88	3199.34	200.00	35.58	8.00 N	35.03 E	35.93@	77.13	0.27
3400.00	1.25	194.42	3399.31	200.00	35.79	4.50 N	35.54 E	35.82@	82.79	0.50
3600.00	1.25	189.26	3599.26	200.00	34.54	0.23 N	34.65 E	34.65@	89.62	0.06
3800.00	1.00	188.44	3799.22	200.00	33.62	3.65 S	34.04 E	34.23@	96.12	0.13
4000.00	1.25	203.66	3999.18	200.00	32.18	7.37 S	32.91 E	33.72@	102.63	0.19
4200.00	1.00	224.83	4199.14	200.00	29.81	10.61 S	30.80 E	32.58@	109.00	0.24
4400.00	0.50	275.04	4399.13	200.00	27.62	11.77 S	28.70 E	31.02@	112.29	0.39
4600.00	0.50	218.19	4599.12	200.00	26.16	12.38 S	27.29 E	29.97@	114.39	0.24
4800.00	0.25	262.34	4799.12	200.00	25.13	13.12 S	26.32 E	29.41@	116.50	0.18
5000.00	0.75	231.56	4999.11	200.00	23.61	13.99 S	24.86 E	28.53@	119.37	0.28

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION
HANAGAN APL FEDERAL COM #2H
Eddy COUNTY, NM
RIG:Silver Oak 10

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
5200.00	0.75	241.37	5199.09	200.00	21.32	15.43 S	22.69 E	27.44@	124.23	0.06
5400.00	1.25	264.52	5399.06	200.00	17.94	16.27 S	19.37 E	25.30@	130.03	0.32
5600.00	1.25	250.67	5599.01	200.00	13.65	17.20 S	15.14 E	22.91@	138.65	0.15
5800.00	1.00	226.88	5798.98	200.00	10.17	19.12 S	11.81 E	22.47@	148.30	0.26
6000.00	1.25	275.03	5998.94	200.00	6.65	20.12 S	8.36 E	21.78@	157.43	0.47
6200.00	1.25	253.16	6198.90	200.00	2.36	20.56 S	4.10 E	20.96@	168.73	0.24
6400.00	1.00	272.30	6398.86	200.00	-1.50	21.12 S	0.27 E	21.12@	179.28	0.22
6600.00	1.25	260.44	6598.82	200.00	-5.41	21.41 S	3.63 W	21.72@	189.62	0.17
6800.00	1.75	281.60	6798.75	200.00	-10.51	21.16 S	8.77 W	22.91@	202.51	0.37
7000.00	1.75	280.29	6998.66	200.00	-16.39	20.00 S	14.77 W	24.86@	216.44	0.02
7200.00	1.00	269.98	7198.60	200.00	-21.08	19.46 S	19.52 W	27.56@	225.09	0.39
7400.00	1.00	213.67	7398.57	200.00	-23.90	20.91 S	22.23 W	30.52@	226.75	0.47
** TIED INTO MS ENERGY SERVICES GYRO SURVEYS AT 7430' MD										
7430.00	1.00	231.45	7428.57	30.00	-24.28	21.29 S	22.58 W	31.03@	226.68	1.03
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.										
7507.00	1.06	238.97	7505.56	77.00	-25.48	22.08 S	23.72 W	32.40@	227.05	0.19
7601.00	1.23	238.99	7599.54	94.00	-27.16	23.04 S	25.33 W	34.24@	227.70	0.18
7695.00	1.23	234.43	7693.52	94.00	-28.94	24.15 S	27.01 W	36.23@	228.20	0.10
7788.00	0.79	138.84	7786.51	93.00	-29.41	25.21 S	27.40 W	37.24@	227.38	1.64
7850.00	0.88	128.45	7848.50	62.00	-28.81	25.83 S	26.75 W	37.18@	226.00	0.28
7881.00	0.79	132.99	7879.50	31.00	-28.50	26.13 S	26.40 W	37.14@	225.30	0.36
7913.00	1.06	110.23	7911.49	32.00	-28.08	26.38 S	25.96 W	37.01@	224.55	1.41
7943.00	2.90	93.63	7941.47	30.00	-27.08	26.52 S	24.95 W	36.41@	223.25	6.36
7974.00	6.24	91.63	7972.37	31.00	-24.63	26.62 S	22.48 W	34.84@	220.18	10.79
8006.00	9.58	89.54	8004.06	32.00	-20.24	26.65 S	18.08 W	32.20@	214.15	10.47
8037.00	12.75	87.13	8034.47	31.00	-14.25	26.46 S	12.08 W	29.08@	204.54	10.33
8068.00	16.18	86.35	8064.48	31.00	-6.51	26.01 S	4.35 W	26.37@	189.50	11.08
8100.00	19.79	86.12	8094.92	32.00	3.37	25.36 S	5.51 E	25.95@	167.75	11.28

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION
HANAGAN APL FEDERAL COM #2H
Eddy COUNTY, NM
RIG:Silver Oak 10

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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)
8131.00	23.21	84.96	8123.75	31.00	14.72	24.47 S	16.83 E	29.70@	145.48	11.12
8162.00	26.47	84.49	8151.88	31.00	27.75	23.27 S	29.80 E	37.80@	127.98	10.54
8193.00	29.72	83.39	8179.23	31.00	42.34	21.72 S	44.31 E	49.35@	116.11	10.62
8224.00	32.80	83.20	8205.72	31.00	58.41	19.84 S	60.29 E	63.47@	108.22	9.94
8256.00	36.14	83.47	8232.10	32.00	76.51	17.74 S	78.27 E	80.26@	102.77	10.45
8287.00	39.39	82.23	8256.60	31.00	95.48	15.37 S	97.10 E	98.31@	98.99	10.77
8318.00	42.65	80.77	8279.99	31.00	115.78	12.35 S	117.22 E	117.87@	96.02	10.96
8349.00	46.34	79.45	8302.10	31.00	137.41	8.61 S	138.62 E	138.89@	93.56	12.27
8380.00	49.86	78.37	8322.80	31.00	160.34	4.17 S	161.26 E	161.31@	91.48	11.65
8411.00	53.82	78.35	8341.95	31.00	184.54	0.75 N	185.13 E	185.13@	89.77	12.77
8442.00	57.33	79.36	8359.47	31.00	209.95	5.68 N	210.21 E	210.29@	88.45	11.64
8474.00	61.82	80.60	8375.67	32.00	237.42	10.48 N	237.38 E	237.61@	87.47	14.42
8505.00	66.92	82.68	8389.08	31.00	265.31	14.53 N	265.02 E	265.42@	86.86	17.53
8536.00	72.28	84.27	8399.88	31.00	294.34	17.82 N	293.88 E	294.42@	86.53	17.95
8563.00	76.41	85.87	8407.17	27.00	320.33	20.05 N	319.77 E	320.40@	86.41	16.33
8594.00	81.78	87.59	8413.03	31.00	350.75	21.78 N	350.15 E	350.83@	86.44	18.16
8625.00	83.36	88.69	8417.04	31.00	381.44	22.78 N	380.87 E	381.55@	86.58	6.19
8718.00	90.04	88.25	8422.39	93.00	474.09	25.26 N	473.63 E	474.31@	86.95	7.20
8812.00	89.96	87.87	8422.39	94.00	567.97	28.44 N	567.58 E	568.29@	87.13	0.41
8905.00	89.87	85.34	8422.53	93.00	660.93	33.95 N	660.41 E	661.28@	87.06	2.72
8999.00	90.40	82.68	8422.31	94.00	754.90	43.76 N	753.89 E	755.16@	86.68	2.89
9092.00	91.19	81.72	8421.01	93.00	847.77	56.38 N	846.02 E	847.89@	86.19	1.34
9186.00	89.87	81.89	8420.15	94.00	941.59	69.77 N	939.05 E	941.64@	85.75	1.42
9280.00	89.34	82.08	8420.79	94.00	1035.44	82.88 N	1032.13 E	1035.45@	85.41	0.60
9373.00	89.69	81.38	8421.58	93.00	1128.27	96.26 N	1124.16 E	1128.27@	85.11	0.84
9466.00	90.04	81.70	8421.80	93.00	1221.08	109.94 N	1216.15 E	1221.10@	84.83	0.51
9559.00	89.78	81.28	8421.95	93.00	1313.88	123.70 N	1308.12 E	1313.96@	84.60	0.53
9652.00	90.13	81.62	8422.02	93.00	1406.68	137.53 N	1400.09 E	1406.83@	84.39	0.52

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION
HANAGAN APL FEDERAL COM #2H
Eddy COUNTY, NM
RIG:Silver Oak 10

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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)
9745.00	89.34	81.37	8422.45	93.00	1499.49	151.28 N	1492.06 E	1499.71@	84.21	0.89
9839.00	89.69	81.47	8423.24	94.00	1593.28	165.30 N	1585.01 E	1593.60@	84.05	0.39
9932.00	88.11	81.09	8425.03	93.00	1686.04	179.40 N	1676.91 E	1686.48@	83.89	1.75
10025.00	88.37	81.66	8427.89	93.00	1778.79	193.34 N	1768.82 E	1779.35@	83.76	0.67
10118.00	88.64	82.47	8430.31	93.00	1871.62	206.17 N	1860.89 E	1872.28@	83.68	0.92
10213.00	89.43	83.79	8431.91	95.00	1966.54	217.54 N	1955.20 E	1967.26@	83.65	1.62
10306.00	89.78	83.78	8432.55	93.00	2059.51	227.60 N	2047.65 E	2060.26@	83.66	0.38
10400.00	90.48	84.84	8432.34	94.00	2153.50	236.92 N	2141.18 E	2154.25@	83.69	1.35
10493.00	90.84	85.19	8431.27	93.00	2246.49	245.00 N	2233.82 E	2247.22@	83.74	0.54
10587.00	90.66	85.39	8430.04	94.00	2340.48	252.72 N	2327.50 E	2341.18@	83.80	0.29
10681.00	90.04	86.38	8429.46	94.00	2434.47	259.47 N	2421.25 E	2435.11@	83.88	1.24
10773.00	90.31	87.09	8429.18	92.00	2526.44	264.71 N	2513.10 E	2527.00@	83.99	0.83
10868.00	90.04	86.70	8428.89	95.00	2621.40	269.85 N	2607.96 E	2621.88@	84.09	0.50
10961.00	90.31	86.81	8428.61	93.00	2714.36	275.12 N	2700.81 E	2714.79@	84.18	0.31
11054.00	90.13	86.76	8428.25	93.00	2807.32	280.33 N	2793.66 E	2807.69@	84.27	0.20
11148.00	89.43	87.60	8428.61	94.00	2901.27	284.96 N	2887.55 E	2901.57@	84.36	1.16
11241.00	89.43	86.80	8429.54	93.00	2994.20	289.50 N	2980.43 E	2994.46@	84.45	0.86
11334.00	89.69	87.06	8430.25	93.00	3087.16	294.48 N	3073.30 E	3087.37@	84.53	0.39
11428.00	89.87	87.58	8430.61	94.00	3181.09	298.88 N	3167.19 E	3181.26@	84.61	0.59
11520.00	90.04	87.88	8430.69	92.00	3273.00	302.52 N	3259.12 E	3273.13@	84.70	0.38
11614.00	90.22	87.94	8430.47	94.00	3366.90	305.95 N	3353.06 E	3366.99@	84.79	0.20
11707.00	89.08	87.62	8431.04	93.00	3459.80	309.55 N	3445.98 E	3459.86@	84.87	1.27
11800.00	89.25	87.69	8432.40	93.00	3552.70	313.36 N	3538.90 E	3552.74@	84.94	0.20
11893.00	89.60	87.89	8433.33	93.00	3645.61	316.94 N	3631.82 E	3645.62@	85.01	0.43
11987.00	89.96	88.04	8433.69	94.00	3739.49	320.28 N	3725.76 E	3739.50@	85.09	0.42
12079.00	89.60	87.74	8434.04	92.00	3831.39	323.67 N	3817.70 E	3831.39@	85.15	0.51
12173.00	89.96	87.87	8434.40	94.00	3925.29	327.27 N	3911.63 E	3925.29@	85.22	0.41
12266.00	89.60	87.19	8434.76	93.00	4018.22	331.27 N	4004.54 E	4018.22@	85.27	0.83

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION
HANAGAN APL FEDERAL COM #2H
Eddy COUNTY, NM
RIG:Silver Oak 10

Page 05/05

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets		Closure Dist Dir		DLS
						(ft)	(ft)	(ft)	(deg)	(dg/100ft)
12359.00	90.04	87.30	8435.05	93.00	4111.16	335.74 N	4097.43 E	4111.16@	85.32	0.49
12453.00	89.87	86.36	8435.13	94.00	4205.12	340.94 N	4191.29 E	4205.13@	85.35	1.02
12546.00	90.40	86.27	8434.91	93.00	4298.10	346.92 N	4284.09 E	4298.12@	85.37	0.58
12639.00	89.78	86.14	8434.76	93.00	4391.08	353.08 N	4376.89 E	4391.11@	85.39	0.68
12732.00	90.04	86.20	8434.91	93.00	4484.07	359.29 N	4469.68 E	4484.10@	85.40	0.29
12754.00	90.04	86.34	8434.89	22.00	4506.07	360.72 N	4491.64 E	4506.10@	85.41	0.64
STRAIGHT LINE PROJECTION TO BIT AT 12834'MD										
12834.00	90.04	86.34	8434.84	80.00	4586.05	365.83 N	4571.47 E	4586.09@	85.42	0.00

** 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.



A Schlumberger Company

TIE-IN SURVEY INFORMATION SHEET

CLIENT INFORMATION

CLIENT:	Yates Petroleum Corp.		
LEASE / WELL No.:	Hanagan APL Fed Com	2H	
WELL LOCATION:	Eddy County, NM		
COUNTY / STATE / COUNTRY:	Eddy	NM	USA
RIG:	Silver Oak 10		
API WELL No:	30-015-39511		
JOB No:	12MLD0078		
P.O. / AFE No.	11-167-0		
DIRECTIONAL COMPANY:	Pathfinder		

WELL SITE INFORMATION

TOTAL MAGNETIC CORRECTION (TMC):			
On Wall Plat:	7.56	LWD Calculated:	7.56
Agreed Upon:		7.56	
X =	638196.401000	Feet	Y = 587377 193000
Feet		Feet	
SITE LATITUDE:	32.614082 N	SITE LONGITUDE:	104.018759 W
GRID SYSTEM:	TRUE ☐ UTM ☒ LAMBERT ☐	ZONE:	New Mexico
PROPOSED DRIFT DIRECTION:	85.2		
KELLY BUSHING ELEVATION:	18		
ALTITUDE:	3324	Feet	WATER DEPTH: N/A
Feet		Feet	

TIE-IN SURVEY

MEASURED DEPTH:	7430		
DRIFT ANGLE:	1		
DRIFT DIRECTION:	231.45		
TRUE VERTICAL DEPTH:	7428.57		
VERTICAL SECTION:	-24.28		
RECTANGULAR COORDINATE (N / S) :	-21.29		
RECTANGULAR COORDINATE (E / W) :	-22.58		
CLOSURE DISTANCE / DIRECTION:	31.03	226.69	
SURVEY CALCULATION METHOD:	AA ☐	MC ☒	RC ☐ BT ☐
SOURCE OF TIE-IN DATA (COMPANY):	MS Energy Services		
COPY OF TIE-IN SURVEY REPORT	☒ YES		☐ NO

WELL PLAN

KICKOFF DEPTH:	7948.5	TOTAL DEPTH:	12835.9
KICKOFF ANGLE:	0	MAX ANGLE:	89.86

PES Engineers: Jeff Hull
Cody Bundick

**Signature of both field engineers required if applicable

Directional Driller: Richard Hill

DATE: 30-Mar-2012

MS ENERGY SERVICES
ODESSA, TEXAS

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

* **YATES PETROLEUM** *

JOB NUMBER: SVCO-120435

WELL NAME: HANAGAN APL FED COM #2H

LOCATION: EDDY COUNTY, NEW MEXICO

SURVEY DATE: MARCH 30, 2012

SURVEY ENGINEER: S. SMITH

MAGNETIC DECLINATION: 07.56 GRID NORTH

GYRO REFERENCE BEARING: GRID NORTH

VERTICAL SECTION CALCULATED IN A
PROPOSAL DIRECTION OF: 085.20
SURF. ELEVATION: 18

***** DEPTH MEASURED IN FEET *****

***** THIS DIRECTIONAL SURVEY REPORT IS *****
** CORRECT TO THE BEST OF MY KNOWLEDGE **
* AND IS SUPPORTED BY ACTUAL FIELD DATA! *
**
COMMENTS: SILVER OAK 10
RKB 18'
EMAIL TBUSSELL@YATESPETROLEUM.COM**
MIKEL@YATESPETROLEUM.COM
** COMPANY REPRESENTATIVE **

**

MS ENERGY SERVICES
ODESSA, TEXAS

JOB NUMBER: SVCO-120435

WELL NAME: HANAGAN APL FED COM #2H

INRUN SURVEY
BY MINIMUM CURVATURE

MEAS. DEPTH	VERT. DEPTH	VERT. SECT.	L/R PROP.	INCL	BEARING AZIMUTH	COORDINATES		D-LEG /100	D-LEG /CL	STATION DISP.	DISPLACEMENT DIRECTION
						LATITUDE	DEPARTURE				
0.0	0.00	0.00	0.000	00.00	000.00	0.00 N	0.00 E	0.00		0.00 AT	000.00
200.0	200.00	-0.27	-0.340	00.25	316.34	0.32 N	0.30 W	0.13	0.25	0.44 AT	316.34
400.0	400.00	-0.75	-1.529	00.50	341.90	1.46 N	0.87 W	0.15	0.29	1.70 AT	329.12
600.0	599.99	-1.72	-2.791	00.50	293.45	2.64 N	1.95 W	0.21	0.41	3.28 AT	323.59
800.0	799.98	-2.75	-3.553	00.25	318.20	3.31 N	3.04 W	0.15	0.29	4.49 AT	317.47
1000.0	999.98	-2.21	-4.939	00.75	032.75	4.74 N	2.62 W	0.36	0.72	5.41 AT	331.06
1200.0	1199.90	1.42	-8.696	02.25	041.36	8.78 N	0.68 E	0.76	1.51	8.81 AT	004.45
1400.0	1399.77	7.24	-13.218	02.00	054.11	13.78 N	6.10 E	0.27	0.53	15.07 AT	023.90
1600.0	1599.65	13.59	-15.950	02.00	069.74	17.03 N	12.21 E	0.27	0.54	20.95 AT	035.63
1800.0	1799.57	18.70	-18.182	01.25	048.56	19.68 N	17.12 E	0.47	0.95	26.08 AT	041.01
2000.0	1999.54	21.76	-19.600	00.75	080.12	21.35 N	20.04 E	0.36	0.73	29.28 AT	043.19
2200.0	2199.52	23.74	-18.596	00.75	144.02	20.52 N	22.10 E	0.40	0.79	30.16 AT	047.13
2400.0	2399.50	25.93	-16.606	01.00	115.13	18.72 N	24.45 E	0.25	0.50	30.79 AT	052.56
2600.0	2599.48	28.62	-15.166	00.75	110.94	17.51 N	27.25 E	0.13	0.26	32.39 AT	057.28
2800.0	2799.45	30.50	-12.531	01.25	156.50	15.04 N	29.34 E	0.45	0.90	32.97 AT	062.86
3000.0	2999.39	32.92	-8.494	01.50	134.06	11.22 N	32.09 E	0.29	0.59	34.00 AT	070.73
3200.0	3199.34	35.58	-5.047	01.00	142.88	8.01 N	35.03 E	0.27	0.53	35.93 AT	077.12
3400.0	3399.31	35.79	-1.513	01.25	194.42	4.50 N	35.54 E	0.50	1.00	35.82 AT	082.78
3600.0	3599.26	34.54	2.663	01.25	189.26	0.24 N	34.64 E	0.06	0.11	34.65 AT	089.61
3800.0	3799.22	33.61	6.478	01.00	188.44	3.64 S	34.04 E	0.13	0.25	34.23 AT	096.11
4000.0	3999.19	32.17	10.095	01.25	203.66	7.37 S	32.91 E	0.19	0.39	33.72 AT	102.62
4200.0	4199.15	29.80	13.144	01.00	224.83	10.60 S	30.80 E	0.24	0.48	32.57 AT	109.00
4400.0	4399.13	27.61	14.125	00.50	275.04	11.76 S	28.70 E	0.39	0.78	31.02 AT	112.29
4600.0	4599.13	26.16	14.614	00.50	218.19	12.37 S	27.29 E	0.24	0.48	29.97 AT	114.39
4800.0	4799.12	25.13	15.274	00.25	262.34	13.12 S	26.32 E	0.18	0.36	29.41 AT	116.49
5000.0	4999.11	23.60	16.021	00.75	231.56	13.99 S	24.86 E	0.28	0.55	28.53 AT	119.37
5200.0	5199.10	21.32	17.275	00.75	241.37	15.43 S	22.69 E	0.06	0.13	27.44 AT	124.22
5400.0	5399.07	17.94	17.830	01.25	264.52	16.27 S	19.37 E	0.32	0.63	25.29 AT	130.03
5600.0	5599.02	13.64	18.403	01.25	250.67	17.20 S	15.14 E	0.15	0.30	22.91 AT	138.65
5800.0	5798.98	10.16	20.032	01.00	226.88	19.11 S	11.80 E	0.26	0.52	22.46 AT	148.30
6000.0	5998.95	6.64	20.742	01.25	275.03	20.11 S	8.36 E	0.47	0.95	21.78 AT	157.44
6200.0	6198.90	2.36	20.825	01.25	253.16	20.55 S	4.10 E	0.24	0.47	20.96 AT	168.73
6400.0	6398.86	-1.50	21.064	01.00	272.30	21.12 S	0.26 E	0.22	0.45	21.12 AT	179.28
6600.0	6598.82	-5.41	21.029	01.25	260.44	21.41 S	3.63 W	0.17	0.34	21.71 AT	189.63
6800.0	6798.76	-10.51	20.348	01.75	281.60	21.16 S	8.77 W	0.37	0.74	22.90 AT	202.52
7000.0	6998.66	-16.39	18.691	01.75	280.29	20.00 S	14.77 W	0.02	0.04	24.86 AT	216.45
7200.0	7198.60	-21.08	17.750	01.00	269.98	19.45 S	19.52 W	0.39	0.79	27.56 AT	225.10
7400.0	7398.58	-23.90	18.971	01.00	213.67	20.91 S	22.23 W	0.47	0.94	30.52 AT	226.76
7430.0	7428.57	-24.28	19.322	01.00	231.45	21.29 S	22.58 W	1.03	0.31	31.03 AT	226.69

 * THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF *
 * 7430.00 FEET EQUALS 31.03 FEET AT 226.69 *

PathFinder Energy Services, Inc.

Magnetic & Grid Calculations

YATES PETROLEUM CORPORATION
HANAGAN APL FEDERAL COM #2H
PARKWAY; BONE SPRING
Rig: Silver Oak 10

field copy

Sun Apr 08 13:35:36 2012

Coordinates

Latitude: 32.614082 N (32 deg. 36 min. 50.6958 sec.)
Longitude: 104.018759 W (-104 deg. 1 min. 7.5333 sec.)
Elevation: 3342.00 feet.
Calculation Date: Mar/20/2012

Magnetic Calculations

Model: IGRF2010
Dip Angle: 60.4520 degrees
Total Magnetic Field: 0.48751 gauss
Magnetic Declination: 7.729604 degrees
Horizontal Intensity: 0.240418 gauss
To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.729604 Degr

Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east
Ellipsoid: GRS80
X: 638196.4010 feet
Y: 587277.1930 feet
True to Grid: (convergence) -0.169550 degrees
Magnetic to Grid: 7.560055 degrees
To Convert a Magnetic Dir. to a GRID dir. Add 7.560055 Degr.



A Schlumberger Company

PathFinder Energy Services, Inc. Magnetic & Grid Calculations

Yates Petroleum Corp.
Hanagan APL Fed Com #2H
Eddy County, NM
Rig: Silver Oak 10

Sat Mar 10 14:00:20 2012

Coordinates

Latitude: 32.614082 N (32 deg. 36 min. 50.6958 sec.)
Longitude: 104.018759 W (-104 deg. 1 min. 7.5333 sec.)
Elevation: 3342.00 feet.
Calculation Date: Mar/10/2012

Magnetic Calculations

Model: IGRF2010
Dip Angle: 60.4528 degrees
Total Magnetic Field: 0.48729 gauss
Magnetic Declination: 7.731247 degrees
Horizontal Intensity: 0.240302 gauss
To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.731247 Degs

Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east
Ellipsoid: GRS80
X: 638196.4010 feet
Y: 587277.1930 feet
True to Grid: (convergence) -0.169550 degrees
Magnetic to Grid: 7.561698 degrees
To Convert a Magnetic Dir. to a GRID dir. Add 7.561698 Degs.

Tmc