



A Schlumberger Company

DIRECTIONAL SURVEY REPORT

15-39483

YATES PETROLEUM

PUPPY BPP STATE COM #1HY

EDDY COUNTY, NEW MEXICO

RECEIVED

JUL 05 2012

NMOCD ARTESIA

PREPARED BY: STEVE BIBB

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) JAMES BURLESON
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 02-17-12 TO 02-29-12
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
PUPPY BPP STATE COM #1HY
EDDY COUNTY, NM
RIG: SILVER OAK 10
9. SURVEY CERTIFIED FROM: 5640 TO 10270 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE DISPLACED AT 4363.64 FEET ON A BEARING OF 100.38 DEGREES FROM THE CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 10350.00 FEET, ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.



STEVE BIBB
MWD COORDINATOR

PathFinder Energy Services, Inc.

BHL Report

Page 01/01
Tie-in Date: 02/15/2012
Date Completed: 02/29/2012

YATES PETROLEUM
PUPPY BPP STATE COM #1HY
EMPIRE;WOLFCAMP,NORTHWEST
Rig:SILVER OAK 10
PathFinder Office Supervisor: STEVE BIBB
PathFinder Field Engineers:J.BURLESON
S.DOGGETT

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.52.14.4825 N LON:104.15.18.6783 W
GRID Reference:NAD83 new mexico east Transverse Mercator
Ref GRID Coord: X: 565329.7910 Y: 680499.3480
North Aligned To:GRID NORTH
Total Magnetic Correction: 7.83° EAST TO GRID
Vertical Section Plane: 100.26
Survey Vert. Reference: 18.00' Kelly Bushing To Ground
Altitude:3443.00' Ground To MSL

Measured Depth	10350.00	(feet)
Inclination	88.29	(deg)
Azimuth	101.05	(deg)
True Vertical Depth	6138.05	(feet)
Vertical Section	4363.63	(feet)
Survey X cord	569622.05	(feet)
Survey Y cord	679713.26	(feet)
Survey Lat	32.86851940 N	(deg)
Survey Lon	104.24121042 W	(deg)
Rectangular Corr. N/S	786.09 S	(feet)
Rectangular Corr. E/W	4292.25 E	(feet)
Closure Distance	4363.64	(feet)
Direction of Closure	100.38	(deg)
Dogleg Severity	0.00	(deg/100ft)

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM
 PUPPY BPP STATE COM #1HY
 EDDY COUNTY, NM
 Rig:SILVER OAK 10
 PathFinder Office Supervisor: STEVE BIBB
 PathFinder Field Engineers: J.BURLESON
 S.DOGGETT

Survey Horiz. Reference:WELLHEAD
 Ref Coordinates: LAT:32.52.14.4825 N LON:104.15.18.6783 W
 GRID Reference:NAD83 new mexico east Transverse Mercator
 Ref GRID Coord: X: 565329.7910 Y: 680499.3480
 North Aligned To:GRID NORTH
 Total Magnetic Correction: 7.83° EAST TO GRID
 Vertical Section Plane: 100.26
 Survey Vert. Reference: 18.00' Kelly Bushing To Ground
 Altitude:3443.00' Ground To MSL

Survey Calculations by RX5 V6.03E 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)
0.00	0.00	0.00	-0.00	0.00	0.01	0.01 N	0.01 E	0.02@	64.17	0.00
THE FOLLOWING ARE MS GRYO SURVEYS.										
200.00	0.75	259.82	199.99	200.00	-1.21	0.22 S	1.27 W	1.29@	260.02	0.38
400.00	2.00	241.06	399.93	200.00	-5.14	2.14 S	5.62 W	6.01@	249.10	0.66
600.00	2.25	226.26	599.79	200.00	-10.16	6.55 S	11.51 W	13.24@	240.36	0.30
800.00	1.75	230.48	799.67	200.00	-14.44	11.21 S	16.70 W	20.11@	236.14	0.26
1000.00	2.50	233.67	999.53	200.00	-19.41	15.73 S	22.57 W	27.51@	235.12	0.38
1200.00	2.75	241.78	1199.32	200.00	-26.16	20.59 S	30.31 W	36.64@	235.82	0.22
1400.00	1.50	257.01	1399.18	200.00	-32.32	23.44 S	37.09 W	43.88@	237.70	0.68
1600.00	1.00	277.23	1599.14	200.00	-36.47	23.81 S	41.37 W	47.73@	240.08	0.33
1800.00	0.75	261.44	1799.11	200.00	-39.45	23.79 S	44.40 W	50.37@	241.82	0.17
2000.00	0.75	255.55	1999.10	200.00	-41.88	24.31 S	46.96 W	52.88@	242.63	0.04
2200.00	0.50	241.76	2199.08	200.00	-43.75	25.05 S	49.00 W	55.03@	242.92	0.14
2400.00	0.25	156.97	2399.08	200.00	-44.19	25.86 S	49.59 W	55.93@	242.46	0.27
2600.00	0.25	200.18	2599.08	200.00	-44.03	26.67 S	49.57 W	56.29@	241.72	0.09
2800.00	0.50	123.29	2799.08	200.00	-43.30	27.56 S	48.99 W	56.21@	240.64	0.25
3000.00	0.25	68.46	2999.07	200.00	-42.13	27.88 S	47.86 W	55.39@	239.78	0.21
3200.00	0.25	197.67	3199.07	200.00	-41.81	28.14 S	47.59 W	55.28@	239.41	0.23
3400.00	0.25	218.78	3399.07	200.00	-42.08	28.89 S	47.99 W	56.02@	238.95	0.05
3600.00	0.50	228.99	3599.06	200.00	-42.83	29.81 S	48.92 W	57.29@	238.65	0.13
3800.00	1.00	223.20	3799.05	200.00	-44.33	31.65 S	50.78 W	59.83@	238.06	0.25
4000.00	0.50	283.64	3999.03	200.00	-46.15	32.72 S	52.82 W	62.13@	238.23	0.43
4200.00	0.25	270.75	4199.03	200.00	-47.45	32.50 S	54.10 W	63.12@	239.00	0.13
4400.00	0.75	296.97	4399.02	200.00	-49.13	31.91 S	55.71 W	64.20@	240.20	0.27
4600.00	1.00	285.17	4599.00	200.00	-52.13	30.86 S	58.56 W	66.19@	242.21	0.15
4800.00	1.00	273.25	4798.97	200.00	-55.60	30.30 S	61.98 W	68.99@	243.95	0.10

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM
PUPPY BPP STATE COM #1HY
EDDY COUNTY, NM
RIG:SILVER OAK 10

Page 02/04

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)
5000.00	0.75	260.46	4998.94	200.00	-58.56	30.42 S	65.02 W	71.78@	244.93	0.16
5200.00	0.75	335.63	5198.93	200.00	-60.54	29.44 S	66.85 W	73.05@	246.23	0.46
5400.00	0.50	347.74	5398.92	200.00	-61.61	27.40 S	67.57 W	72.92@	247.93	0.14
** TIED IN TO MS GYRO SURVEY @ 5600.00' MD.										
5600.00	1.00	1.95	5598.90	200.00	-62.20	24.80 S	67.70 W	72.10@	249.88	0.26
THE FOLLOWING ARE PATHFINDER MWD SURVEYS:										
5640.00	1.76	58.63	5638.89	40.00	-61.79	24.13 S	67.16 W	71.37@	250.24	3.68
5672.00	3.43	73.75	5670.86	32.00	-60.57	23.61 S	65.82 W	69.93@	250.27	5.60
5704.00	6.51	82.45	5702.73	32.00	-57.98	23.10 S	63.11 W	67.20@	249.89	9.88
5735.00	10.11	86.32	5733.40	31.00	-53.67	22.70 S	58.65 W	62.89@	248.84	11.75
5767.00	13.72	89.83	5764.71	32.00	-47.21	22.50 S	52.05 W	56.70@	246.62	11.50
5799.00	17.24	92.73	5795.54	32.00	-38.77	22.72 S	43.51 W	49.09@	242.43	11.26
5830.00	20.84	93.61	5824.84	31.00	-28.74	23.28 S	33.42 W	40.73@	235.13	11.65
5864.00	24.71	95.72	5856.19	34.00	-15.64	24.37 S	20.31 W	31.72@	219.80	11.63
5899.00	29.11	97.39	5887.39	35.00	0.16	26.20 S	4.58 W	26.60@	189.91	12.75
5930.00	33.41	97.57	5913.88	31.00	16.23	28.29 S	11.37 E	30.49@	158.11	13.87
5961.00	37.46	96.51	5939.13	31.00	34.17	30.49 S	29.20 E	42.22@	136.23	13.21
5992.00	41.59	96.42	5963.04	31.00	53.85	32.71 S	48.80 E	58.75@	123.83	13.32
6023.00	46.25	96.60	5985.36	31.00	75.30	35.15 S	70.16 E	78.47@	116.61	15.04
6055.00	50.56	98.27	6006.60	32.00	99.20	38.26 S	93.88 E	101.38@	112.17	14.02
6086.00	53.99	99.85	6025.57	31.00	123.70	42.12 S	118.09 E	125.38@	109.63	11.78
6117.00	56.54	100.82	6043.23	31.00	149.18	46.70 S	143.15 E	150.57@	108.07	8.62
6147.00	59.53	101.52	6059.11	30.00	174.62	51.63 S	168.11 E	175.86@	107.07	10.16
6178.00	63.31	101.70	6073.94	31.00	201.83	57.11 S	194.78 E	202.97@	106.34	12.20
6210.00	67.36	101.52	6087.29	32.00	230.90	62.96 S	223.26 E	231.96@	105.75	12.67
6241.00	70.43	101.08	6098.45	31.00	259.81	68.62 S	251.61 E	260.80@	105.26	9.99
6272.00	72.46	101.08	6108.32	31.00	289.20	74.27 S	280.45 E	290.12@	104.83	6.55
6303.00	75.80	101.43	6116.79	31.00	319.01	80.09 S	309.69 E	319.88@	104.50	10.83
6335.00	80.11	101.43	6123.47	32.00	350.29	86.29 S	340.36 E	351.13@	104.23	13.47

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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)
6396.00	88.81	100.73	6129.35	61.00	410.94	97.94 S	399.89 E	411.71@	103.76	14.31
6427.00	89.34	100.73	6129.85	31.00	441.93	103.72 S	430.34 E	442.66@	103.55	1.71
6521.00	89.60	100.64	6130.72	94.00	535.93	121.14 S	522.71 E	536.56@	103.05	0.29
6614.00	89.78	100.55	6131.22	93.00	628.92	138.24 S	614.12 E	629.49@	102.69	0.22
6708.00	89.60	99.85	6131.73	94.00	722.92	154.89 S	706.63 E	723.41@	102.36	0.77
6801.00	90.40	99.32	6131.73	93.00	815.91	170.37 S	798.33 E	816.31@	102.05	1.03
6894.00	89.96	98.80	6131.44	93.00	908.89	185.02 S	890.17 E	909.20@	101.74	0.73
6988.00	90.04	99.24	6131.44	94.00	1002.87	199.75 S	983.01 E	1003.10@	101.49	0.48
7082.00	89.52	99.06	6131.80	94.00	1096.85	214.70 S	1075.81 E	1097.03@	101.29	0.59
7175.00	89.25	99.24	6132.80	93.00	1189.83	229.49 S	1167.62 E	1189.96@	101.12	0.35
7268.00	89.52	99.24	6133.80	93.00	1282.81	244.42 S	1259.41 E	1282.91@	100.98	0.29
7361.00	89.16	98.97	6134.87	93.00	1375.78	259.14 S	1351.23 E	1375.86@	100.86	0.48
7454.00	88.81	98.88	6136.52	93.00	1468.74	273.56 S	1443.09 E	1468.79@	100.73	0.39
7547.00	88.81	99.68	6138.45	93.00	1561.71	288.56 S	1534.85 E	1561.74@	100.65	0.86
7640.00	88.99	99.59	6140.23	93.00	1654.68	304.12 S	1626.52 E	1654.71@	100.59	0.22
7734.00	88.20	99.94	6142.54	94.00	1748.65	320.06 S	1719.13 E	1748.67@	100.55	0.92
7827.00	89.25	99.85	6144.61	93.00	1841.63	336.04 S	1810.73 E	1841.64@	100.51	1.13
7921.00	88.90	99.94	6146.13	94.00	1935.61	352.19 S	1903.32 E	1935.63@	100.48	0.38
8015.00	88.55	100.29	6148.22	94.00	2029.59	368.69 S	1995.83 E	2029.60@	100.47	0.53
8078.00	88.29	100.38	6149.95	63.00	2092.56	379.99 S	2057.79 E	2092.58@	100.46	0.44
8148.00	88.81	100.38	6151.73	70.00	2162.54	392.60 S	2126.62 E	2162.55@	100.46	0.74
8242.00	90.48	100.47	6152.31	94.00	2256.54	409.61 S	2219.06 E	2256.55@	100.46	1.78
8335.00	90.75	100.73	6151.31	93.00	2349.53	426.71 S	2310.47 E	2349.54@	100.46	0.40
8429.00	92.15	100.73	6148.93	94.00	2443.49	444.21 S	2402.79 E	2443.51@	100.47	1.49
8522.00	92.24	100.73	6145.37	93.00	2536.42	461.51 S	2494.10 E	2536.44@	100.48	0.10
8617.00	92.24	100.64	6141.66	95.00	2631.35	479.11 S	2587.38 E	2631.37@	100.49	0.09
8710.00	92.33	100.38	6137.95	93.00	2724.27	496.06 S	2678.75 E	2724.29@	100.49	0.30
8804.00	92.07	100.38	6134.34	94.00	2818.20	512.98 S	2771.14 E	2818.22@	100.49	0.28

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM
PUPPY BPP STATE COM #1HY
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)
8896.00	91.28	100.12	6131.65	92.00	2910.16	529.35 S	2861.63 E	2910.18@	100.48	0.90
8990.00	90.66	99.94	6130.06	94.00	3004.15	545.72 S	2954.18 E	3004.17@	100.47	0.69
9083.00	91.19	99.76	6128.56	93.00	3097.13	561.62 S	3045.80 E	3097.15@	100.45	0.60
9176.00	91.28	99.68	6126.55	93.00	3190.11	577.32 S	3137.44 E	3190.12@	100.43	0.13
9269.00	91.63	99.68	6124.19	93.00	3283.07	592.95 S	3229.09 E	3283.08@	100.41	0.38
9362.00	91.63	99.76	6121.55	93.00	3376.03	608.65 S	3320.72 E	3376.04@	100.39	0.09
9460.00	91.80	100.16	6118.61	98.00	3473.98	625.59 S	3417.20 E	3473.99@	100.37	0.44
9553.00	90.31	100.15	6116.90	93.00	3566.97	641.99 S	3508.72 E	3566.97@	100.37	1.60
9647.00	88.99	100.09	6117.48	94.00	3660.96	658.50 S	3601.26 E	3660.97@	100.36	1.41
9739.00	88.02	99.77	6119.88	92.00	3752.93	674.36 S	3691.85 E	3752.93@	100.35	1.11
9833.00	88.29	100.22	6122.90	94.00	3846.88	690.67 S	3784.37 E	3846.88@	100.34	0.56
9926.00	88.55	100.18	6125.47	93.00	3939.84	707.13 S	3875.87 E	3939.85@	100.34	0.28
10019.00	88.55	100.64	6127.82	93.00	4032.81	723.93 S	3967.31 E	4032.82@	100.34	0.49
10112.00	88.02	100.71	6130.60	93.00	4125.77	741.15 S	4058.66 E	4125.77@	100.35	0.57
10205.00	88.20	100.77	6133.67	93.00	4218.71	758.47 S	4149.98 E	4218.72@	100.36	0.20
10270.00	88.29	101.05	6135.66	65.00	4283.68	770.77 S	4213.77 E	4283.68@	100.37	0.45
STRAIGHT LINE PROJECTION TO BIT DEPTH @ 10350.00' MD.										
10350.00	88.29	101.05	6138.05	80.00	4363.63	786.09 S	4292.25 E	4363.64@	100.38	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		
LEASE / WELL No.:	PUPPY BPP STATE COM	#1HY	
WELL LOCATION:	EDDY COUNTY		
COUNTY / STATE / COUNTRY:	EDDY	NM	US
RIG:	SILVER OAK 10		
API WELL No:	30-015-39483		
JOB No:	700005219-WT-WT		
P.O. / AFE No.	112320		
DIRECTIONAL COMPANY:	PES <i>PATHFINDER</i>		

WELL SITE INFORMATION

TOTAL MAGNETIC CORRECTION (TMC):					
On Wall Plat:	7.83	LWD Calculated:	7.827632	Agreed Upon:	7.83
X =	565329.791000	Feet	Y =	680499.348000	Feet
SITE LATITUDE:	32.870690 N	SITE LONGITUDE:	104.255188 W		
GRID SYSTEM:	TRUE ☐	UTM ☐	LAMBERT ☒	ZONE:	NEW MEXICO EAST <i>NAD 83</i>
PROPOSED DRIFT DIRECTION:	100.26				
KELLY BUSHING ELEVATION:	20 FT				
ALTITUDE:	3443	Feet	WATER DEPTH:	0	Feet

TIE-IN SURVEY

MEASURED DEPTH:	5,600		
DRIFT ANGLE:	1		
DRIFT DIRECTION:	1.95		
TRUE VERTICAL DEPTH:	5,598.90		
VERTICAL SECTION:	-62.2		
RECTANGULAR COORDINATE (N / S):	-24.8		
RECTANGULAR COORDINATE (E / W):	-67.7		
CLOSURE DISTANCE / DIRECTION:	72.1	249.88	
SURVEY CALCULATION METHOD:	AA ☐	MC ☒	RC ☐ BT ☐
SOURCE OF TIE-IN DATA (COMPANY):	<i>SCHLUMBERGER MS G420</i>		
COPY OF TIE-IN SURVEY REPORT	☒ YES ☐ NO		

WELL PLAN

KICKOFF DEPTH:	5632	TOTAL DEPTH:	10350
KICKOFF ANGLE:	1	MAX ANGLE:	90

PES Engineers: STEVE DOGGETT
JAMES BURLESON

**Signature of both field engineers required if applicable

Directional Driller: RICHARD HILL

DATE: 15-Feb-2012



CUSTOMER: YATES PETROLEUM

JOB NUMBER: SVCO-120220

WELL NAME: PUPPY BPP STATE COM #1Y

LOCATION: EDDY COUNTY, NEW MEXICO

SURVEY DATE: 2/14/2012

API#: 30-015-39483

COMMENTS: EMAIL: TBUSSELL@YATESPETROLEUM.COM
MIKEL@YATESPETROLEUM.COM

SURVEYOR:

S SMITH

DECLINATION:

7 84 E TO GRID

VERTICAL SEC:

100 26

RIG/ RKB:

SILVER OAK 10 / 18'

DIR. COMPANY:

PATHFINDER

TIE-IN:

N/A

COMMENTS:

CO MAN BRUCE NOLES

MEASURED DEPTH	VERTICAL DEPTH	VERTICAL SECTION	INCLINATION ANGLE	BEARING AZIMUTH	COORDINATES		DOG-LEG PER 100	CLOSURE DISTANCE	CLOSURE BEARING
					+ N/-S	+ E/-W			
200	199 99	-1 23	0 75	259 82	-0 23	-1 29	0 38	1 31	259 82
400	399 93	-5 16	2	241 06	-2 15	-5 63	0 66	6 03	249 09
600	599 8	-10 17	2 25	226 26	-6 55	-11 52	0 3	13 26	240 36
800	799 68	-14 45	1 75	230 48	-11 21	-16 71	0 26	20 13	236 14
1000	999 54	-19 42	2 5	233 67	-15 74	-22 58	0 38	27 53	235 13
1200	1199 33	-26 17	2 75	241 78	-20 59	-30 33	0 22	36 66	235 82
1400	1399 19	-32 33	1 5	257 01	-23 45	-37 1	0 68	43 89	237 71
1600	1599 14	-36 48	1	277.23	-23 82	-41 39	0 33	47.75	240.08
1800	1799 12	-39 46	0 75	261 44	-23 79	-44 41	0 17	50 38	241 82
2000	1999 1	-41 89	0 75	255 55	-24 32	-46 97	0 04	52 89	242 63
2200	2199 09	-43 76	0 5	241 76	-25 06	-49 01	0 15	55 04	242 92
2400	2399 08	-44 21	0 25	156 97	-25 87	-49 61	0 27	55 95	242 46
2600	2599 08	-44 04	0 25	200 18	-26 68	-49 59	0 09	56 31	241 72
2800	2799 08	-43 31	0 5	123 29	-27 57	-49 01	0 25	56 23	240 64
3000	2999 08	-42 14	0 25	68 46	-27 89	-47 87	0 21	55 4	239 78
3200	3199 07	-41 83	0 25	197 67	-28 14	-47 6	0 23	55 3	239 41
3400	3399 07	-42 09	0 25	218 78	-28 9	-48 01	0 05	56 03	238 95
3600	3599 07	-42 85	0 5	228 99	-29 81	-48 94	0 13	57 3	238 65
3800	3799 05	-44 34	1	223 2	-31 66	-50 79	0 25	59 85	238 07
4000	3999 04	-46 16	0 5	283 64	-32 72	-52 83	0 43	62 15	238 23
4200	4199 03	-47 46	0 25	270 75	-32 51	-54 12	0 13	63 13	239
4400	4399 02	-49 15	0 75	296 97	-31 91	-55 72	0 27	64 21	240 2
4600	4599	-52 14	1	285 17	-30 86	-58 57	0 15	66 21	242 21
4800	4798 97	-55 61	1	273 25	-30 31	-62	0 1	69 01	243 95
5000	4998 94	-58 57	0 75	260 46	-30 42	-65 03	0 16	71 8	244 93
5200	5198 93	-60 55	0 75	335 63	-29 45	-66 86	0 46	73 06	246 23
5400	5398 92	-61 63	0 5	347 74	-27 4	-67 59	0 14	72 93	247 93
5600	5598.9	-62.21	1	1.95	-24.81	-67 71	0 26	72 12	249 88
5800	5798 87	-61 35	1 25	41 15	-21 42	-66 22	0 4	69 6	252 08
6000	5998 81	-59 5	1 5	26 37	-17 43	-63 62	0 22	65 97	254 68
6200	6198 75	-58 16	1 25	26 61	-13 14	-61 48	0 13	62 87	257 94
6350	6348 71	-57 07	1 5	29 06	-9 96	-59 8	0 17	60 62	260 55

PathFinder Energy Services, Inc. Magnetic & Grid Calculations

Yates Petroleum
Puppy BPP State Com #1HY
Eddy County, NM
Rig: Silver Oak 10

Wed Feb 08 14:19:36 2012

Coordinates

Latitude: 32.870690 N (32 deg. 52 min. 14.4825 sec.)
Longitude: 104.255188 W (-104 deg. 15 min. 18.6783 sec.)
Elevation: 3443.00 feet.
Calculation Date: Feb/08/2012

Magnetic Calculations

Model: IGRF2010
Dip Angle: 60.6497 degrees
Total Magnetic Field: 0.48864 gauss
Magnetic Declination: 7.870044 degrees
Horizontal Intensity: 0.239504 gauss
To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.870044 Degr

Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east
Ellipsoid: GRS80
X: 565329.7910 feet
Y: 680499.3480 feet
True to Grid: (convergence) -0.042413 degrees
Magnetic to Grid: 7.827632 degrees
To Convert a Magnetic Dir. to a GRID dir. Add 7.827632 Degr.

FIELD CALCULATIONS

PathFinder Energy Services, Inc. Magnetic & Grid Calculations

YATES PETROLEUM
PUPPY BPP STATE COM #1HY
EMPIRE; WOLFCAMP, NORTHWEST

Wed Feb 15 21:49:50 2012

Coordinates

Latitude: 32.870690 N (32 deg. 52 min. 14.4825 sec.)
Longitude: 104.255188 W (-104 deg. 15 min. 18.6783 sec.)
Elevation: 3443.00 feet.
Calculation Date: Feb/08/2012

Magnetic Calculations

Model: IGRF2010
Dip Angle: 60.6497 degrees
Total Magnetic Field: 0.48864 gauss
Magnetic Declination: 7.870044 degrees
Horizontal Intensity: 0.239504 gauss

To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.870044 Degr.

Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east
Ellipsoid: GRS80
X: 565329.7910 feet
Y: 680499.3480 feet
True to Grid: (convergence) -0.042413 degrees
Magnetic to Grid: 7.827632 degrees

To Convert a Magnetic Dir. to a GRID dir. Add 7.827632 Degr.