

SEP 02 2014

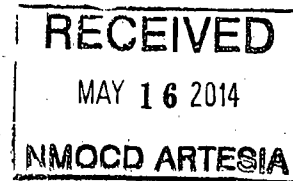
RECEIVED



PHOENIX
TECHNOLOGY SERVICES

May 12, 2014

Oil Conservation Division
State of New Mexico
811 S. First St.
District 2- Artesia
Artesia, New Mexico 88210



Attention: Regulatory Department

Re: Yates Petroleum
Southland Royalty APM State #3H
Eddy County, NM
API #30-015- 39858
Job No. 1410414

RD 5/22/14
Accepted for Record
NMOC D

Enclosed please find the Survey Data Certification, and the original Plat and one copy of the Survey Report performed on the above referenced well by Phoenix Technology Services, Inc. (P-5 No. 664171). Other information required by your office is as follows:

Name & Title of Surveyor	Drain Hole Number	Surveyed Depths		Dates Performed		Type of Survey
		From	To	Start	End	
Anthony Rogers	3H	450	12,759	03/26/14	04/18/14	MWD

A certified plat on which the bottom hole location is oriented both to the surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

Best Regards,

Dana Robinson

Dana Robinson
Operations Administrator

Certified mail receipt number: 7011 1570 0001 4365 1936

Phoenix Technology Services SURVEY DATA CERTIFICATION



PHOENIX JOB NUMBER

1410414

OPERATOR

Yates Petroleum

WELL NAME

Southland Royalty APM State #3H

COUNTY & STATE

Eddy, New Mexico

API WELL NUMBER

30-015-39858

PROPOSED DIRECTION

358.74

TIE-IN DATA						
MEASURED	VERTICAL			N-S	E-W	DATA
DEPTH	DEPTH	INCLIN	AZIMUTH	COORD	COORD	SOURCE
400 ft	399.99 ft	0.34	158.6 ft	-.76 ft	1.82 ft	Gyro

FIRST	FIRST		
SURVEY	SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
26-Mar-14	450 ft	0.4	172.7

SURVEY INSTRUMENT
TYPE
Phoenix MWD

LAST	LAST		
SURVEY	SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
18-Apr-14	12,759 ft	90.6	356.1

TO THE BEST OF MY KNOWLEDGE I
CERTIFY THIS SURVEY DATA TO BE
TRUE AND CORRECT.

PROJECTED	PROJECTED		
TD SURVEY	TD SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
18-Apr-14	12,835 ft	90.6	356.1

Anthony Rogers

PRINT YOUR NAME ABOVE

Anthony Rogers

SIGN YOUR NAME ABOVE

MAGNETIC DECLINATION OR TOTAL GRID

TOTAL CORRECTION USED	
	7.33
DECLINATION OR GRID	GRID

4/18/2014

TODAY'S DATE

MWD SUPERVISOR 1

Anthony Rogers

DIRECTIONAL DRILLER 1

Greg Puntney

MWD SUPERVISOR 2

Dean Young

DIRECTIONAL DRILLER 2

James Juneke

1805 Brittmore Road

Houston, Texas 77043

(713)3370609 (Voice), (713)337-0599 (Fax)



Yates Petroleum Corp.

Eddy County, NM (NAD83 NME)

Southland Royalty APM State

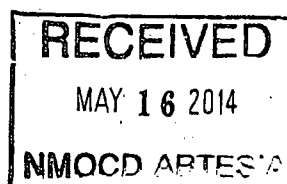
#3H

WB1/Job #1410414

Design: Surveys (McVay 8)

Standard Survey Report

20 April, 2014



PHOENIX
TECHNOLOGY SERVICES



Phoenix Technology Services Survey Report



Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #3H
Project:	Eddy County, NM (NAD83:NME)	TVD Reference:	KB @ 3381.50usft (McVay.8)
Site:	Southland Royalty APM State	MD Reference:	KB @ 3381.50usft (McVay.8)
Well:	#3H	North Reference:	Grid
Wellbore:	WB1/Job #1410414	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay.8)	Database:	GCR DB

Project:	Eddy County, NM (NAD83:NME)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site:	Southland Royalty APM State				
Site Position:		Northing:	596,440.56 usft	Latitude:	32° 38' 21.43223 N
From:	Map	Easting:	636,047.25 usft	Longitude:	104° 1' 32.35058 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.17 °

Well:	#3H					
Well Position	+N/-S	0.00 usft	Northing:	596,440.56 usft	Latitude:	32° 38' 21.43223 N
	+E/-W	0.00 usft	Easting:	636,047.25 usft	Longitude:	104° 1' 32.35058 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,363.00 usft

Wellbore		WB1/Job #1410414			
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010_14	03/05/14	7.49	60.43	48,544

Design:	Surveys (McVay.8)				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.00	0.00	0.00	357.70	

Survey Program		Date	10/20/14		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.00	400.00	MS Gyro Survey (WB1/Job #1410414)	CB-GYRO-MS	Camera based gyro multishot	
400.00	12,835.00	Phoenix MWD Survey (WB1/Job #141041)	MWD	MWD - Standard	

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.45	100.40	100.00	-0.07	0.39	-0.09	0.45	0.45	0.00
200.00	0.25	118.96	200.00	-0.25	0.96	-0.29	0.23	-0.20	18.56
300.00	0.33	103.60	300.00	-0.42	1.43	-0.48	0.11	0.08	-15.36
400.00	0.34	158.60	399.99	-0.76	1.82	-0.84	0.31	0.01	55.00
Tie-on to MS Gyro Survey									
450.00	0.40	172.70	449.99	-1.08	1.90	-1.15	0.22	0.12	28.20
First Phoenix MWD Survey									
535.00	0.40	161.60	534.99	-1.65	2.03	-1.73	0.09	0.00	-13.06



Phoenix Technology Services

Survey Report



Company:	Yates Petroleum Corp	Local Co-ordinate Reference:	Well #3H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB @ 3381.50usft (McVay.8)
Site:	Southland Royalty APM State	MD Reference:	KB @ 3381.50usft (McVay.8)
Well:	#3H	North Reference:	Grd
Wellbore:	WB1/Job #1410414	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay.8)	Database:	GCR DB

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
621.00	0.40	131.50	620.99	-2.14	2.35	-2.23	0.24	0.00	-35.00
707.00	0.60	95.70	706.99	-2.38	3.02	-2.50	0.42	0.23	-41.63
795.00	0.70	100.10	794.98	-2.52	4.01	-2.68	0.13	0.11	5.00
880.00	1.50	90.70	879.96	-2.62	5.63	-2.85	0.96	0.94	-11.06
969.00	1.60	97.90	968.93	-2.81	8.03	-3.13	0.25	0.11	8.09
1,065.00	1.40	105.30	1,064.90	-3.30	10.49	-3.72	0.29	-0.21	7.71
1,159.00	0.70	111.90	1,158.88	-3.82	12.13	-4.30	0.75	-0.74	7.02
1,253.00	1.10	278.60	1,252.88	-3.90	11.77	-4.37	1.90	0.43	177.34
1,347.00	1.50	276.40	1,346.85	-3.63	9.65	-4.01	0.43	0.43	-2.34
1,441.00	1.80	266.60	1,440.81	-3.58	6.96	-3.85	0.44	0.32	-10.43
1,536.00	1.00	281.40	1,535.79	-3.50	4.66	-3.69	0.92	-0.84	15.58
1,630.00	0.90	274.10	1,629.77	-3.29	3.12	-3.41	0.17	-0.11	-7.77
1,724.00	1.10	255.00	1,723.76	-3.47	1.51	-3.53	0.41	0.21	-20.32
1,818.00	1.40	240.80	1,817.74	-4.26	-0.37	-4.24	0.46	0.32	-15.11
1,912.00	0.80	258.20	1,911.72	-4.96	-2.01	-4.87	0.72	-0.64	18.51
2,007.00	0.90	277.20	2,006.71	-5.00	-3.40	-4.86	0.31	0.11	20.00
2,101.00	1.20	280.70	2,100.69	-4.72	-5.10	-4.51	0.33	0.32	3.72
2,195.00	1.50	283.00	2,194.67	-4.26	-7.27	-3.97	0.32	0.32	2.45
2,289.00	2.00	285.00	2,288.62	-3.56	-10.05	-3.16	0.54	0.53	2.13
2,383.00	1.80	286.50	2,382.57	-2.72	-13.05	-2.19	0.22	-0.21	1.60
2,478.00	1.50	293.20	2,477.53	-1.80	-15.62	-1.18	0.37	-0.32	7.05
2,572.00	1.60	292.40	2,571.50	-0.82	-17.97	-0.10	0.11	0.11	-0.85
2,671.00	1.70	290.10	2,670.46	0.21	-20.62	1.04	0.12	0.10	-2.32
2,765.00	2.10	294.10	2,764.40	1.39	-23.51	2.34	0.45	0.43	4.26
2,858.00	2.20	302.60	2,857.34	3.05	-26.56	4.12	0.36	0.11	9.14
2,952.00	1.50	289.30	2,951.29	4.43	-29.25	5.60	0.87	-0.74	-14.15
3,046.00	1.30	302.60	3,045.26	5.41	-31.31	6.66	0.40	-0.21	14.15
3,141.00	1.40	302.20	3,140.24	6.61	-33.20	7.94	0.11	0.11	-0.42
3,235.00	1.80	288.00	3,234.20	7.68	-35.57	9.10	0.60	0.43	-15.11
3,330.00	1.80	287.90	3,329.15	8.60	-38.41	10.13	0.00	0.00	-0.11
3,424.00	1.80	292.60	3,423.11	9.62	-41.18	11.26	0.16	0.00	5.00
3,518.00	1.80	284.90	3,517.06	10.57	-43.97	12.32	0.26	0.00	-8.19
3,612.00	2.70	279.30	3,610.99	11.30	-47.58	13.20	0.98	0.96	-5.96
3,665.00	2.60	283.70	3,663.93	11.79	-49.98	13.79	0.43	-0.19	8.30
3,781.00	2.50	292.90	3,779.82	13.40	-54.87	15.59	0.36	-0.09	7.93
3,876.00	2.50	281.70	3,874.73	14.62	-58.80	16.97	0.51	0.00	-11.79
3,970.00	1.00	268.70	3,968.68	15.02	-61.63	17.48	1.64	-1.60	-13.83
4,064.00	1.20	106.70	4,062.67	14.72	-61.51	17.18	2.31	0.21	-172.34
4,158.00	2.10	92.90	4,156.63	14.35	-58.84	16.70	1.04	0.96	-14.68
4,271.00	1.80	86.30	4,269.57	14.36	-55.01	16.56	0.33	-0.27	-5.84
4,365.00	1.60	82.80	4,363.53	14.62	-52.23	16.70	0.24	-0.21	-3.72
4,460.00	1.20	63.30	4,458.50	15.23	-50.03	17.23	0.65	-0.42	-20.53
4,554.00	1.20	57.90	4,552.48	16.20	-48.31	18.12	0.12	0.00	-5.74



Phoenix Technology Services Survey Report



Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #3H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB @ 3381.50usft (McVay 8)
Site:	Southland Royalty APM State	MD Reference:	KB @ 3381.50usft (McVay 8)
Well:	#3H	North Reference:	Grid
Wellbore:	WB1/Job #1410414	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	Database:	CCR DB

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	N/S (usft)	E/W (usft)	Vertical Section (usft)	Dogleg Rate (/100usft)	Bulld Rate (/100usft)	Turn Rate (/100usft)
4,648.00	0.90	50.70	4,646.46	17.19	-46.91	19.06	0.35	-0.32	-7.66
4,742.00	0.90	33.10	4,740.45	18.27	-45.93	20.10	0.29	0.00	-18.72
4,836.00	1.00	22.40	4,834.44	19.65	-45.22	21.45	0.22	0.11	-11.38
4,930.00	1.10	29.10	4,928.42	21.20	-44.47	22.97	0.17	0.11	7.13
5,025.00	1.10	21.00	5,023.40	22.85	-43.70	24.58	0.16	0.00	-8.53
5,119.00	1.10	24.40	5,117.39	24.51	-43.00	26.22	0.07	0.00	3.62
5,213.00	0.90	28.70	5,211.37	25.98	-42.27	27.65	0.23	-0.21	4.57
5,308.00	1.10	30.10	5,306.36	27.42	-41.46	29.06	0.21	0.21	1.47
5,402.00	1.00	30.30	5,400.34	28.91	-40.59	30.52	0.11	-0.11	0.21
5,496.00	0.70	1.70	5,494.33	30.19	-40.16	31.78	0.54	-0.32	-30.43
5,591.00	0.80	2.10	5,589.32	31.44	-40.12	33.02	0.11	0.11	0.42
5,685.00	0.70	356.50	5,683.32	32.67	-40.13	34.25	0.13	-0.11	-5.96
5,779.00	0.90	341.00	5,777.31	33.94	-40.41	35.53	0.31	0.21	-16.49
5,873.00	0.30	35.00	5,871.30	34.84	-40.50	36.43	0.81	-0.64	57.45
5,967.00	0.40	29.40	5,965.30	35.32	-40.20	36.91	0.11	0.11	-5.96
6,062.00	0.40	27.90	6,060.30	35.91	-39.88	37.48	0.01	0.00	-1.58
6,156.00	0.60	349.90	6,154.29	36.68	-39.82	38.25	0.40	0.21	-40.43
6,250.00	1.20	355.50	6,248.28	38.15	-39.98	39.72	0.64	0.64	5.96
6,344.00	1.90	344.70	6,342.25	40.63	-40.47	42.22	0.80	0.74	-11.49
6,438.00	2.20	23.40	6,436.19	43.79	-40.16	45.37	1.48	0.32	41.17
6,532.00	2.20	34.80	6,530.12	46.93	-38.42	48.43	0.46	0.00	12.13
6,628.00	1.60	47.50	6,626.07	49.35	-36.38	50.77	0.76	-0.63	13.23
6,723.00	1.20	23.70	6,721.04	51.15	-35.00	52.52	0.73	-0.42	-25.05
6,817.00	0.90	27.10	6,815.03	52.71	-34.27	54.04	0.33	-0.32	3.62
6,911.00	0.90	323.70	6,909.02	53.96	-34.37	55.30	1.01	0.00	-67.45
7,006.00	0.60	306.90	7,004.01	54.86	-35.21	56.23	0.39	-0.32	-17.68
7,100.00	0.70	273.30	7,098.00	55.19	-36.17	56.60	0.41	0.11	-35.74
7,194.00	1.40	299.70	7,191.99	55.79	-37.75	57.26	0.89	0.74	28.09
7,288.00	1.30	273.90	7,285.96	56.43	-39.81	57.99	0.65	-0.11	-27.45
7,383.00	0.50	330.20	7,380.95	56.87	-41.09	58.47	1.16	-0.84	59.26
7,477.00	0.90	303.70	7,474.94	57.63	-41.91	59.27	0.54	0.43	-28.19
7,566.00	0.80	17.50	7,563.94	58.61	-42.30	60.26	1.15	-0.11	82.92
7,597.00	0.80	16.50	7,594.93	59.03	-42.17	60.67	0.05	0.00	-3.23
7,628.00	1.00	49.80	7,625.93	59.41	-41.91	61.04	1.77	0.65	107.42
7,660.00	1.00	57.60	7,657.93	59.74	-41.46	61.36	0.43	0.00	24.38
7,692.00	1.10	59.30	7,689.92	60.05	-40.96	61.64	0.33	0.31	5.31
7,723.00	1.40	49.30	7,720.91	60.44	-40.41	62.02	1.19	0.97	-32.26
7,754.00	2.90	1.50	7,751.89	61.48	-40.11	63.04	7.15	4.84	-154.19
7,786.00	5.90	349.90	7,783.79	63.90	-40.37	65.47	9.73	9.38	-36.25
7,817.00	8.90	347.30	7,814.53	67.81	-41.18	69.41	9.74	9.68	-8.39
7,848.00	12.20	349.20	7,845.00	73.37	-42.32	75.01	10.70	10.65	6.13
7,880.00	15.90	350.40	7,876.04	81.02	-43.69	82.71	11.60	11.56	3.75
7,911.00	20.00	350.70	7,905.53	90.44	-45.25	92.18	13.23	13.23	0.97
7,943.00	22.70	351.70	7,935.33	101.95	-47.03	103.76	8.51	8.44	3.13



Phoenix Technology Services Survey Report



Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #3H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB @ 3381.50usft (McVay 8)
Site:	Southland Royalty APM State	MD Reference:	KB @ 3381.50usft (McVay 8)
Well:	#3H	North Reference:	Grids
Wellbore:	WB1/Job #1410414	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	Database:	GCR DB

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	N-S (usft)	E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,974.00	24.70	355.00	7,963.71	114.33	-48.46	116.18	7.74	6.45	10.65
8,005.00	28.00	354.30	7,991.49	128.02	-49.74	129.92	10.69	10.65	-2.26
8,009.20	28.46	354.14	7,995.19	130.00	-49.94	131.90	11.07	10.92	-3.77
8009.20 MD 330 Crossing Heel Point									
8,037.00	31.50	353.20	8,019.27	143.80	-51.48	145.75	11.07	10.94	-3.39
8,068.00	35.20	351.20	8,045.16	160.68	-53.81	162.71	12.45	11.94	-6.45
8,099.00	41.80	348.80	8,069.41	179.67	-57.18	181.82	21.83	21.29	-7.74
8,131.00	45.40	349.00	8,092.58	201.32	-61.43	203.62	11.26	11.25	0.63
8,162.00	51.90	349.10	8,113.05	224.15	-65.85	226.62	20.97	20.97	0.32
8,193.00	53.70	349.60	8,131.79	248.42	-70.41	251.05	5.95	5.81	1.61
8,225.00	56.10	350.40	8,150.19	274.20	-74.95	276.99	7.77	7.50	2.50
8,256.00	56.40	352.40	8,167.41	299.69	-78.81	302.61	5.45	0.97	6.45
8,287.00	58.50	353.10	8,184.09	325.61	-82.10	328.64	7.04	6.77	2.26
8,319.00	61.10	353.40	8,200.19	353.07	-85.35	356.21	8.17	8.13	0.94
8,350.00	64.00	354.20	8,214.47	380.41	-88.32	383.65	9.63	9.35	2.58
8,381.00	67.30	354.60	8,227.25	408.52	-91.07	411.84	10.71	10.65	1.29
8,424.00	75.10	353.30	8,241.10	448.96	-95.37	452.43	18.36	18.14	-3.02
8,455.00	81.00	351.50	8,247.52	479.01	-99.39	482.61	19.86	19.03	-5.81
8,463.11	82.32	351.27	8,248.69	486.95	-100.59	490.59	16.49	16.25	-2.84
T 500 SR APM #3H									
8,487.00	86.20	350.60	8,251.08	510.41	-104.33	514.19	16.49	16.25	-2.80
8,518.00	88.50	351.20	8,252.52	540.99	-109.23	544.94	7.67	7.42	1.94
8,581.00	94.00	351.90	8,251.14	603.26	-118.48	607.53	8.80	8.73	1.11
8,675.00	95.90	354.90	8,243.03	696.28	-129.25	700.90	3.77	2.02	3.19
8,769.00	97.30	357.80	8,232.22	789.45	-135.20	794.24	3.41	1.49	3.09
8,800.00	98.10	358.90	8,228.07	820.16	-136.08	824.96	4.36	2.58	3.55
8,831.00	99.10	359.20	8,223.44	850.81	-136.59	855.60	3.36	3.23	0.97
8,862.00	97.30	0.20	8,219.01	881.49	-136.75	886.27	6.63	-5.81	3.23
8,893.00	94.90	0.90	8,215.72	912.31	-136.45	917.05	8.06	-7.74	2.26
8,925.00	94.10	1.40	8,213.21	944.20	-135.81	948.89	2.95	-2.50	1.56
8,956.00	94.10	1.30	8,210.99	975.11	-135.08	979.75	0.32	0.00	-0.32
8,980.92	94.34	1.54	8,209.16	999.96	-134.47	1,004.55	1.37	0.97	0.97
T 1000 SR APM #3H									
8,987.00	94.40	1.60	8,208.70	1,006.02	-134.30	1,010.60	1.37	0.97	0.97
9,019.00	95.30	1.60	8,205.99	1,037.89	-133.41	1,042.41	2.81	2.81	0.00
9,050.00	93.90	3.00	8,203.50	1,068.77	-132.17	1,073.21	6.38	-4.52	4.52
9,081.00	92.70	3.50	8,201.72	1,099.66	-130.42	1,104.01	4.19	-3.87	1.61
9,113.00	90.10	3.60	8,200.94	1,131.59	-128.43	1,135.83	8.13	-8.13	0.31
9,144.00	88.90	4.00	8,201.21	1,162.52	-126.38	1,166.66	4.08	-3.87	1.29
9,175.00	89.00	4.20	8,201.78	1,193.44	-124.16	1,197.46	0.72	0.32	0.65
9,207.00	89.70	3.70	8,202.14	1,225.36	-121.96	1,229.27	2.69	2.19	-1.56
9,239.00	90.40	3.40	8,202.11	1,257.30	-119.98	1,261.10	2.38	2.19	-0.94
9,270.00	90.80	3.30	8,201.79	1,288.24	-118.17	1,291.95	1.33	1.29	-0.32
9,301.00	89.90	2.60	8,201.60	1,319.20	-116.57	1,322.81	3.68	-2.90	-2.26



Phoenix Technology Services Survey Report



Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #3H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB @ 3381.50usft (McVay 8)
Site:	Southland-Royalty APM State	MD Reference:	KB @ 3381.50usft (McVay 8)
Well:	#3H	North Reference:	Grid
Wellbore:	WB1/Job #1410414	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	Database:	GCR-DB

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	N/S (usft)	E/W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,332.00	89.40	2.80	8,201.79	1,350.16	-115.11	1,353.70	1.74	-1.61	0.65
9,364.00	88.30	4.10	8,202.43	1,382.10	-113.19	1,385.53	5.32	-3.44	4.06
9,395.00	88.50	3.70	8,203.29	1,413.01	-111.08	1,416.33	1.44	0.65	-1.29
9,426.00	88.50	4.00	8,204.11	1,443.93	-109.00	1,447.14	0.97	0.00	0.97
9,483.91	89.60	2.90	8,205.06	1,501.73	-105.52	1,504.76	2.69	1.90	-1.90
T-1500-SR APM #3H									
9,489.00	89.70	2.80	8,205.10	1,506.81	-105.26	1,509.82	2.69	1.90	-1.90
9,553.00	91.00	2.10	8,204.70	1,570.75	-102.53	1,573.60	2.31	2.03	-1.09
9,614.00	90.10	2.00	8,204.12	1,631.71	-100.35	1,634.42	1.48	-1.48	-0.16
9,677.00	88.70	1.60	8,204.78	1,694.67	-98.37	1,697.26	2.31	-2.22	-0.63
9,771.00	88.60	1.00	8,206.99	1,788.62	-96.23	1,791.04	0.65	-0.11	-0.64
9,865.00	89.90	0.70	8,208.22	1,882.60	-94.84	1,884.89	1.42	1.38	-0.32
9,959.00	91.80	359.90	8,206.83	1,976.58	-94.35	1,978.78	2.19	2.02	-0.85
9,980.77	91.84	359.81	8,206.14	1,998.34	-94.40	2,000.52	0.45	0.20	-0.40
T-2000-SR APM #3H									
10,009.00	91.90	359.70	8,205.21	2,026.56	-94.52	2,028.72	0.45	0.20	-0.40
10,041.00	92.40	359.50	8,204.01	2,058.54	-94.75	2,060.68	1.68	1.56	-0.63
10,072.00	91.70	359.00	8,202.91	2,089.51	-95.15	2,091.65	2.77	-2.26	-1.61
10,104.00	91.20	359.00	8,202.10	2,121.50	-95.71	2,123.63	1.56	-1.56	0.00
10,135.00	89.70	359.02	8,201.85	2,152.49	-96.24	2,154.62	4.84	-4.84	0.06
10,229.00	87.30	358.60	8,204.31	2,246.43	-98.20	2,248.56	2.59	-2.55	-0.45
10,323.00	88.70	358.30	8,207.59	2,340.34	-100.74	2,342.49	1.52	1.49	-0.32
10,417.00	90.20	358.50	8,208.50	2,434.29	-103.36	2,436.48	1.61	1.60	0.21
10,480.81	90.94	358.77	8,207.86	2,498.08	-104.88	2,500.27	1.23	1.16	0.42
T-2500-SR APM #3H									
10,512.00	91.30	358.90	8,207.25	2,529.26	-105.52	2,531.46	1.23	1.16	0.42
10,606.00	90.10	359.00	8,206.10	2,623.23	-107.24	2,625.42	1.28	-1.28	0.11
10,700.00	91.10	358.10	8,205.12	2,717.20	-109.62	2,719.41	1.43	1.06	-0.96
10,794.00	92.00	357.70	8,202.58	2,811.10	-113.06	2,813.37	1.05	0.96	-0.43
10,888.00	88.90	356.90	8,201.84	2,904.98	-117.49	2,907.35	3.41	-3.30	-0.85
10,980.51	90.18	357.10	8,202.58	2,997.35	-122.33	2,999.85	1.40	1.38	0.21
T-3000-SR APM #3H									
10,982.00	90.20	357.10	8,202.58	2,998.85	-122.41	3,001.34	1.40	1.38	0.21
11,076.00	91.40	356.60	8,201.26	3,092.69	-127.57	3,095.32	1.38	1.28	-0.53
11,170.00	91.60	355.60	8,198.80	3,186.44	-133.96	3,189.25	1.08	0.21	-1.06
11,264.00	91.80	355.30	8,196.01	3,280.10	-141.42	3,283.14	0.38	0.21	-0.32
11,358.00	89.20	356.80	8,195.19	3,373.87	-147.89	3,377.08	3.19	-2.77	1.60
11,452.00	90.40	356.40	8,195.52	3,467.70	-153.47	3,471.06	1.35	1.28	-0.43
11,480.71	90.13	356.67	8,195.39	3,496.35	-155.20	3,499.76	1.35	-0.96	0.96
T-3500-SR APM #3H									
11,546.00	89.50	357.30	8,195.60	3,561.55	-158.63	3,565.05	1.35	-0.96	0.96
11,641.00	90.40	357.10	8,195.69	3,656.44	-163.27	3,660.05	0.97	0.95	-0.21
11,735.00	89.60	356.60	8,195.69	3,750.30	-168.44	3,754.03	1.00	-0.85	-0.53
11,832.00	90.00	356.50	8,196.03	3,847.12	-174.27	3,851.01	0.43	0.41	-0.10



Phoenix Technology Services Survey Report



Company:	Yates Petroleum Corp	Local Co-ordinate Reference:	Well #3H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB @ 3381.50usft (McVay 8)
Site:	Southland Royalty APM State	MD Reference:	KB @ 3381.50usft (McVay 8)
Well:	#3H	North Reference:	Grid
Wellbore:	WB1/Job #1410414	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	Database:	GCR-DB

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/S (usft)	+E/W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
11,926.00	90.10	356.30	8,195.94	3,940.93	-180.18	3,944.99	0.24	0.11	-0.21	
11,980.63	90.39	356.30	8,195.71	3,995.44	-183.70	3,999.60	0.53	0.53	0.00	
T 4000-SR APM #3H										
12,020.00	90.60	356.30	8,195.37	4,034.74	-186.24	4,038.96	0.53	0.53	0.00	
12,114.00	90.80	355.80	8,194.22	4,128.51	-192.72	4,132.91	0.57	0.21	-0.53	
12,208.00	90.40	354.90	8,193.24	4,222.19	-200.34	4,226.83	1.05	-0.43	-0.96	
12,296.00	90.10	355.70	8,192.85	4,309.89	-207.55	4,314.75	0.97	-0.34	0.91	
12,390.00	90.90	355.90	8,192.03	4,403.64	-214.43	4,408.69	0.88	0.85	0.21	
12,480.42	90.23	356.00	8,191.14	4,493.82	-220.82	4,499.06	0.75	-0.74	0.11	
T 4500-SR APM #3H										
12,484.00	90.20	356.00	8,191.13	4,497.40	-221.07	4,502.64	0.75	-0.74	0.11	
12,578.00	89.30	356.80	8,191.54	4,591.21	-226.97	4,596.62	1.28	-0.96	0.85	
12,673.00	89.80	356.80	8,192.29	4,686.06	-232.27	4,691.60	0.53	0.53	0.00	
12,733.72	90.36	356.31	8,192.20	4,746.67	-235.93	4,752.31	1.24	0.93	-0.81	
PBHL-SR APM #3H										
12,736.00	90.39	356.29	8,192.18	4,748.94	-236.07	4,754.59	1.24	0.93	-0.81	
12736' MD, 330' Crossing Toe Point										
12,759.00	90.60	356.10	8,191.99	4,771.89	-237.60	4,777.58	1.24	0.93	-0.81	
Last Phoenix MWD Survey										
12,835.00	90.60	356.10	8,191.19	4,847.71	-242.77	4,853.55	0.00	0.00	0.00	
Projection to TD at 100' N & 52' W of BHL										

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/S (usft)	+E/W (usft)	Comment	
400.00	399.99	-0.76	1.82	Tie-on to MS Gyro Survey	
450.00	449.99	-1.08	1.90	First Phoenix MWD Survey	
8,009.20	7,995.19	130.00	-49.94	8009.20' MD, 330' Crossing Heel Point	
12,736.00	8,192.18	4,748.94	-236.07	12736' MD, 330' Crossing Toe Point	
12,759.00	8,191.99	4,771.89	-237.60	Last Phoenix MWD Survey	
12,835.00	8,191.19	4,847.71	-242.77	Projection to TD at 100' N & 52' W of BHL	

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------