



PHOENIX
TECHNOLOGY SERVICES

February 19, 2014

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

Dear District 2 - Artesia

Attention: Regulatory Department

Re: Yates Petroleum Corp.
Savannah State Com #3H
Eddy County, NM
API #30-015-41754
Job No. 1410013

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	
Craig Petersen	3H	1,934	6,942	01/16/14	01/22/14	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,

Kelly Jo Walter

Kelly Jo Walter
Operations Administrator



Certified mail receipt number: 7012 3050 0001 3227 3006

Phoenix Technology Services
SURVEY DATA CERTIFICATION



PHOENIX JOB NUMBER

1410013

OPERATOR

Yates Petroleum Corporation

WELL NAME

Savannah State Com #3H

COUNTY & STATE

Eddy County, NM

API WELL NUMBER

30-015-41754

PROPOSED DIRECTION

270.45

TIE-IN DATA						
MEASURED	VERTICAL			N-S	E-W	DATA
DEPTH	DEPTH	INCLIN	AZIMUTH	COORD	COORD	SOURCE
1,880 ft	1,879.92 ft	.3 ft	299.2 ft	-2.11 ft	-8.74 ft	Surface

FIRST	FIRST		
SURVEY	SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
16-Jan-14	1,934 ft	0.4	304.2

SURVEY INSTRUMENT
TYPE

Phoenix MWD

LAST	LAST		
SURVEY	SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
22-Jan-14	6,942 ft	90.8	270.6

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
22-Jan-14	7,020 ft	90.8	270.6

Craig Petersen

PRINT YOUR NAME ABOVE

Craig Petersen

SIGN YOUR NAME ABOVE

MAGNETIC DECLINATION OR TOTAL GRID

TOTAL CORRECTION USED	
	7.82
DECLINATION OR GRID	GRID

1/22/14

TODAY'S DATE

MWD SUPERVISOR 1

Craig Petersen

DIRECTIONAL DRILLER 1

Brian Terrell

MWD SUPERVISOR 2

Eric Burchinal

DIRECTIONAL DRILLER 2

Dan Wagoner

1805 Brittmore Road

Houston, Texas 77043

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

NF MEXICO OIL CONSERVATION COMMISSION
WELL LOCATION AND ACREAGE DEDICATION - LAT

Form C-102
Supersedes C-128
Effective 1-1-55

All distances must be from the outer boundaries of the Section.

Operator MONSANTO COMPANY			Lease ALBERT STATE		Well No. 1
Unit Letter F	Section 32	Township 19-S	Range 25-E	County EDDY	
Actual Footage Location of Well: 1980 feet from the NORTH line and 1980 feet from the WEST line					
Ground Level Elev. 3511	Producing Formation Morrow		Pool Cemetery Morrow		Dedicated Acreage: 320 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☒ Yes ☐ No If answer is "yes," type of consolidation Communitization

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.)

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.

CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

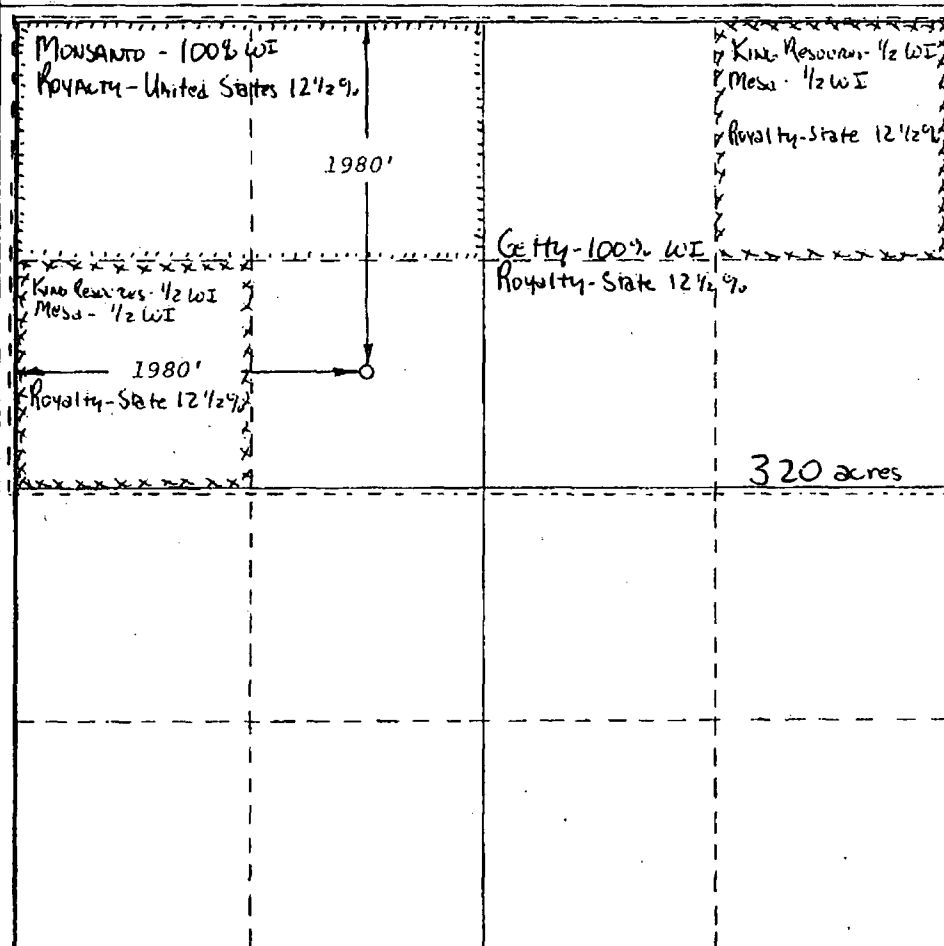
Name W. M. Schell
Position
Regional Production Mgr.
Company
Monsanto Company
Date
June 13, 1977

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

June 9, 1977

Date Surveyed
Richard B. Duniven
Registered Professional Engineer
and/or Land Surveyor

Richard B. Duniven
Certificate No. 488273





Project: Eddy County, NM (NAD83 NME)
Site: Savannah State Com
Well: #3H
Wellbore: WB1/Job #1410013
Design: Plan #3 01-15-14
Rig: Silver Oak 11



PHOENIX
TECHNOLOGY SERVICES



Azimuths to Grid North
True North: 0.09°
Magnetic North: 7.81°
Magnetic Field
Strength: 48491.5snT
Dip Angle: 60.33°
Date: 01/15/2014
Model: IGRF2010_14

WELL DETAILS

+N-S	+E-W	Northing	Ground Level	Easting	Latitude	Longitude
0.00	0.00	588700.00	3490.00	490358.60	32° 37' 5.80038 N	104° 29' 56.07002 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	Vsect	Target	Annotation
1	1880.00	0.32	299.16	1879.92	-2.11	-8.74	0.00	0.00	8.73		Tie-on to Gyro
2	1972.60	0.32	299.16	1972.52	-1.86	-8.20	0.00	0.00	8.18		KOP, 12°/100' Build
3	2722.76	90.30	270.46	2447.64	3.24	-489.13	12.00	-28.70	488.14		LP, hole 90.30°, 270.45° Azm
4	7045.93	90.30	270.46	2425.00	37.60	-4812.10	0.00	0.00	4812.25	PBHL-Savannah #3H	TD at 7045.93

DESIGN TARGET DETAILS

Name	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude	Shape
PBHL-Savannah #3H	2425.00	37.60	-4812.10	588737.60	485546.50	32° 37' 6.09477 N	104° 30' 52.33594 W	Point
PP-Savannah #3H	2450.00	3.73	-477.60	588703.73	489881.60	32° 37' 5.82988 N	104° 30' 1.64738 W	Point

- plan hits target center
- plan misses target center by 2.52usft at 2710.68usft MD (2447.55 TVD, 3.14 N, 477.05 E)

Map System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone Name: New Mexico Eastern Zone
Local Origin: Well #3H, Grid North

Latitude: 32° 37' 5.80038 N
Longitude: 104° 29' 56.07002 W

Grid East: 490358.60
Grid North: 588700.00
Scale Factor: 1.000

Geomagnetic Model: IGRF2010_14
Sample Date: 15-Jan-14
Magnetic Declination: 7.72°
Dip Angle from Horizontal: 60.33°
Magnetic Field Strength: 48492

To convert a Magnetic Direction to a Grid Direction, Add 7.81°
To convert a Magnetic Direction to a True Direction, Add 7.72° East
To convert a True Direction to a Grid Direction, Add 0.09°

FORMATION TOP DETAILS

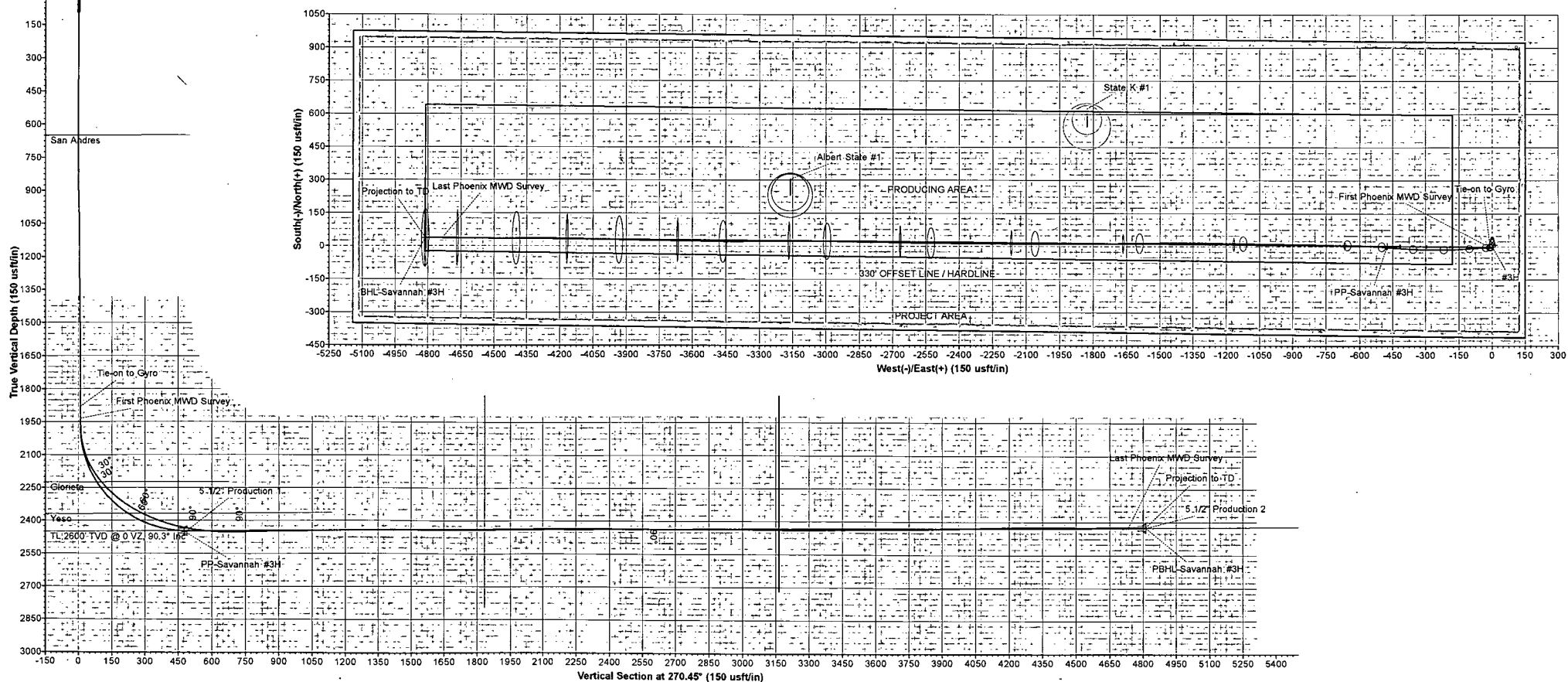
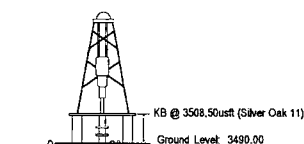
TVDPath	MDPath	Formation	DipAngle	DipDir
2224.57	2238.54	Glorieta	-0.30	270.45
2368.83	2442.00	Yeso	-0.30	270.45
2447.51	2709.04	TL2600' TVD @ 0 VZ, 90.3° Inc	-0.30	270.45

CASING DETAILS

TVD	MD	Name	Size
750.00		9 5/8" Surface	9-5/8
2447.64	2722.76	5 1/2" Production 1	5-1/2
2425.00	7045.93	5 1/2" Production 2	5-1/2

LEGEND

- #1, WB1, Inc Surveys V0
- #1, WB1, Inc Surveys V0
- #3H, WB1/Job #1410013, Surveys (Silver Oak 11) V0
- Plan #3 01-15-14





Yates Petroleum Corp.

Eddy County, NM (NAD83 NME)

Savannah State Com

#3H

WB1/Job #1410013

Survey: Phoenix MWD Survey

Phoenix Final Survey Report

22 January, 2014





Phoenix Technology Services
Phoenix Final Survey Report



Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #3H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB @ 3508.50usft (Silver Oak 11)
Site:	Savannah State Com	MD Reference:	KB @ 3508.50usft (Silver Oak 11)
Well:	#3H	North Reference:	Grid
Wellbore:	WB1/Job #1410013	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Silver Oak 11)	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	Savannah State Com		
Site Position:		Northing:	588,700.00 usft
From:	Map	Easting:	490,358.60 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"
		Latitude:	32° 37' 5.80038 N
		Longitude:	104° 29' 56.07002 W
		Grid Convergence:	-0.09 °

Well	#3H		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 37' 5.80038 N
		Longitude:	104° 29' 56.07002 W
		Ground Level:	3,490.00 usft

Wellbore	WB1/Job #1410013		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010_14	01/15/14	7.72
			Dip Angle
			60.33
			Field Strength
			48,492

Design	Surveys (Silver Oak 11)		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(°)
			270.45

Survey Program	Date 01/22/14		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
100.00	1,880.00	MS Survey (WB1/Job #1410013)	CB-GYRO-MS
1,934.00	7,020.00	Phoenix MWD Survey (WB1/Job #141001)	MWD
			Description
			Camera based gyro multishot
			MWD - Standard

Survey	MD	Inc	Azi (azimuth)	TVD	N/S	E/W	V. Sec	DLeg
	(usft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(°/100usft)
	1,880.00	0.32	299.16	1,879.92	-2.11	-8.74	8.73	0.00
Tie-on to Gyro								
	1,934.00	0.40	304.20	1,933.92	-1.93	-9.03	9.02	0.16
First Phoenix MWD Survey								
	1,965.00	1.20	275.70	1,964.92	-1.84	-9.44	9.43	2.81
	1,996.00	4.60	265.30	1,995.87	-1.91	-11.01	10.99	11.05
	2,028.00	8.80	262.40	2,027.65	-2.34	-14.71	14.69	13.16
	2,059.00	13.00	263.70	2,058.08	-3.03	-20.53	20.51	13.57
	2,090.00	17.40	265.50	2,087.99	-3.78	-28.62	28.59	14.27
	2,121.00	22.00	267.10	2,117.17	-4.44	-39.05	39.01	14.94
	2,152.00	26.80	267.40	2,145.39	-5.05	-51.84	51.79	15.49



Phoenix Technology Services

Phoenix Final Survey Report



Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #3H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB @ 3508.50usft (Silver Oak 11)
Site:	Savannah State Com	MD Reference:	KB @ 3508.50usft (Silver Oak 11)
Well:	#3H	North Reference:	Grid
Wellbore:	WB1/Job #1410013	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Silver Oak 11)	Database:	GCR DB

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
2,184.00	31.30	266.60	2,173.36	-5.87	-67.35	67.30	14.11	
2,215.00	35.60	266.00	2,199.22	-6.98	-84.40	84.34	13.91	
2,246.00	39.60	265.70	2,223.77	-8.35	-103.26	103.19	12.92	
2,277.00	43.30	266.20	2,247.01	-9.79	-123.72	123.64	11.98	
2,308.00	46.40	267.00	2,268.98	-11.08	-145.54	145.45	10.16	
2,339.00	49.30	268.00	2,289.78	-12.08	-168.50	168.40	9.66	
2,371.00	52.50	268.90	2,309.96	-12.75	-193.32	193.22	10.24	
2,402.00	55.70	269.40	2,328.14	-13.12	-218.43	218.32	10.40	
2,433.00	58.80	270.00	2,344.90	-13.25	-244.50	244.39	10.13	
2,464.00	62.00	270.50	2,360.22	-13.13	-271.45	271.34	10.42	
2,495.00	64.70	271.70	2,374.12	-12.60	-299.15	299.04	9.37	
2,527.00	67.00	272.70	2,387.21	-11.48	-328.32	328.22	7.73	
2,558.00	69.70	272.90	2,398.65	-10.07	-357.10	357.01	8.73	
2,589.00	71.70	273.20	2,408.89	-8.51	-386.31	386.23	6.52	
2,620.00	74.00	274.00	2,418.03	-6.65	-415.87	415.81	7.82	
2,651.00	76.10	274.60	2,426.03	-4.40	-445.74	445.69	7.03	
2,683.00	77.80	274.30	2,433.25	-1.99	-476.82	476.79	5.39	
2,708.00	80.40	273.20	2,437.98	-0.38	-501.31	501.29	11.26	
2,739.00	83.10	273.00	2,442.43	1.28	-531.94	531.93	8.73	
2,770.00	84.70	272.60	2,445.72	2.78	-562.73	562.73	5.32	
2,801.00	86.10	272.20	2,448.21	4.08	-593.60	593.61	4.70	
2,832.00	87.30	271.80	2,449.99	5.16	-624.53	624.55	4.08	
2,863.00	88.90	271.30	2,451.02	5.99	-655.50	655.53	5.41	
2,957.00	91.50	270.80	2,450.69	7.72	-749.47	749.51	2.82	
3,051.00	91.90	270.90	2,447.91	9.11	-843.42	843.47	0.44	
3,145.00	90.40	270.70	2,446.02	10.42	-937.39	937.44	1.61	
3,239.00	90.20	270.70	2,445.53	11.57	-1,031.38	1,031.44	0.21	
3,332.00	90.50	270.70	2,444.96	12.71	-1,124.37	1,124.44	0.32	
3,425.00	90.70	271.00	2,443.98	14.09	-1,217.36	1,217.43	0.39	
3,519.00	91.30	271.10	2,442.34	15.81	-1,311.33	1,311.41	0.65	
3,613.00	90.20	269.90	2,441.11	16.63	-1,405.31	1,405.40	1.73	
3,706.00	90.20	269.30	2,440.79	15.98	-1,498.31	1,498.39	0.65	
3,800.00	90.90	269.30	2,439.89	14.83	-1,592.30	1,592.37	0.74	
3,893.00	91.10	269.30	2,438.26	13.70	-1,685.28	1,685.33	0.22	
3,987.00	89.90	269.80	2,437.44	12.96	-1,779.27	1,779.32	1.38	
4,081.00	90.20	270.10	2,437.36	12.88	-1,873.27	1,873.31	0.45	
4,174.00	90.20	269.80	2,437.04	12.79	-1,966.27	1,966.31	0.32	
4,268.00	90.50	269.80	2,436.46	12.47	-2,060.27	2,060.30	0.32	
4,361.00	90.60	270.00	2,435.57	12.30	-2,153.26	2,153.29	0.24	
4,455.00	90.90	270.20	2,434.34	12.47	-2,247.25	2,247.28	0.38	
4,548.00	89.40	270.40	2,434.10	12.96	-2,340.25	2,340.28	1.63	
4,642.00	89.50	270.40	2,435.00	13.61	-2,434.24	2,434.27	0.11	
4,735.00	89.60	270.60	2,435.73	14.42	-2,527.24	2,527.27	0.24	
4,829.00	89.60	270.50	2,436.39	15.33	-2,621.23	2,621.27	0.11	



Phoenix Technology Services
Phoenix Final Survey Report



Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #3H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB @ 3508.50usft (Silver Oak 11)
Site:	Savannah State Com	MD Reference:	KB @ 3508.50usft (Silver Oak 11)
Well:	#3H	North Reference:	Grid
Wellbore:	WB1/Job #1410013	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Silver Oak 11)	Database:	GCR DB

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V./Sec (usft)	DLeg (°/100usft)	
4,922.00	90.00	271.10	2,436.71	16.62	-2,714.22	2,714.27		0.78
5,016.00	90.20	271.10	2,436.55	18.43	-2,808.20	2,808.26		0.21
5,110.00	90.00	271.30	2,436.38	20.40	-2,902.18	2,902.25		0.30
5,203.00	89.70	271.10	2,436.63	22.34	-2,995.16	2,995.24		0.39
5,297.00	88.80	270.20	2,437.86	23.41	-3,089.14	3,089.23		1.35
5,390.00	89.60	269.70	2,439.15	23.33	-3,182.13	3,182.22		1.01
5,484.00	90.40	269.00	2,439.15	22.26	-3,276.13	3,276.20		1.13
5,578.00	90.30	269.60	2,438.58	21.11	-3,370.12	3,370.18		0.65
5,671.00	90.80	270.30	2,437.69	21.03	-3,463.11	3,463.17		0.92
5,766.00	90.70	271.10	2,436.44	22.19	-3,558.10	3,558.16		0.85
5,859.00	90.70	271.10	2,435.31	23.98	-3,651.07	3,651.15		0.00
5,953.00	90.70	270.80	2,434.16	25.54	-3,745.05	3,745.14		0.32
6,046.00	90.90	271.10	2,432.86	27.08	-3,838.03	3,838.12		0.39
6,140.00	91.10	271.00	2,431.22	28.80	-3,932.00	3,932.10		0.24
6,234.00	91.40	271.40	2,429.17	30.77	-4,025.96	4,026.07		0.53
6,327.00	91.70	271.80	2,426.65	33.37	-4,118.89	4,119.02		0.54
6,420.00	91.20	270.50	2,424.30	35.23	-4,211.83	4,211.98		1.50
6,514.00	89.80	270.00	2,423.48	35.64	-4,305.83	4,305.97		1.58
6,608.00	89.90	269.80	2,423.73	35.48	-4,399.83	4,399.97		0.24
6,702.00	89.70	269.10	2,424.05	34.58	-4,493.82	4,493.95		0.77
6,795.00	90.30	270.30	2,424.05	34.09	-4,586.82	4,586.94		1.44
6,889.00	90.90	271.00	2,423.07	35.15	-4,680.81	4,680.94		0.98
6,942.00	90.80	270.60	2,422.28	35.89	-4,733.79	4,733.93		0.78
Last Phoenix MWD Survey								
7,020.00	90.80	270.60	2,421.19	36.71	-4,811.78	4,811.92		0.00
Projection to TD								

Survey Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
1,880.00	1,879.92	-2.11	-8.74	Tie-on to Gyro	
1,934.00	1,933.92	-1.93	-9.03	First Phoenix MWD Survey	
6,942.00	2,422.28	35.89	-4,733.79	Last Phoenix MWD Survey	
7,020.00	2,421.19	36.71	-4,811.78	Projection to TD	

Checked By: _____ Approved By: _____ Date: _____