



Project: Eddy County, NM (NAD27 NME)
Site: Poker Lake Unit
Well: #394H
Wellbore: Wellbore #1 / Job #1310421
Design: Plan #1 04-08-13



Azimuths to Grid North
True North: -0.28°
Magnetic North: 7.19°
Magnetic Field
Strength: 48393.3anT
Dip Angle: 60.08°
Date: 04/08/2013
Model: IGRF2010_14

30-015-41083

WELL DETAILS									
+N-S		+E-W		Northing	Ground Level: Easting	3468.00	Latitude	Longitude	
0.00		0.00		436334.90	662332.17		32° 11' 54.645774 N	103° 48' 30.749748 W	

SECTION DETAILS									
Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dlog	TFace	VSecl
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	7409.00	0.00	0.00	7409.00	0.00	0.00	0.00	0.00	0.00
3	8109.00	70.00	134.78	7947.40	-265.55	267.60	10.00	134.78	376.99
4	8309.00	70.00	134.78	8015.81	-397.93	401.00	0.00	0.00	564.93
5	8505.13	89.61	134.78	8050.35	-533.24	537.35	10.00	0.00	757.03
6	14672.96	89.61	134.78	8092.00	-4877.63	4915.33	0.00	0.00	6924.72
PBHL-PLU #394H									

DESIGN TARGET DETAILS									
Name	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude	Shape	
PBHL-PLU #394H	8092.00	-4877.63	4915.33	431457.27	667247.50	32° 11' 6.135781 N	103° 47' 33.831776 W	Rectangle (Sides: L20.00 W40.00)	
plan hits target center									

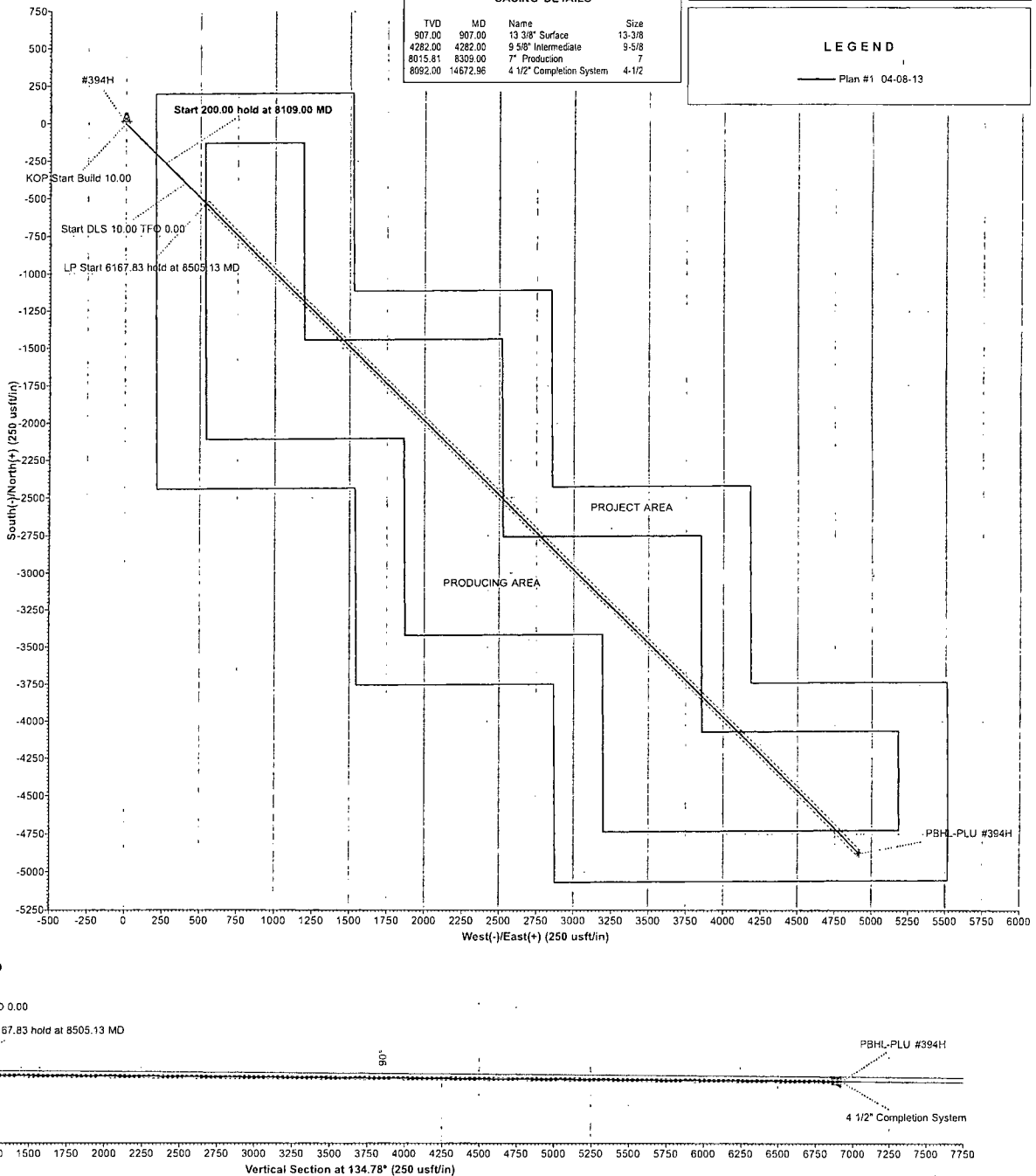
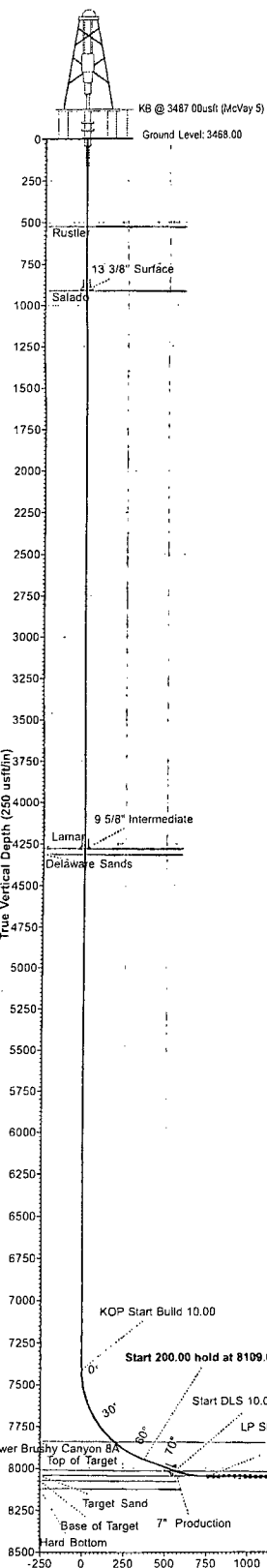
SITE DETAILS: Poker Lake Unit									
Site Centre Northing		435895.68		Easting		646110.12			
Positional Uncertainty:		0.00		Convergence:		0.25		Local North:	
						Grid			

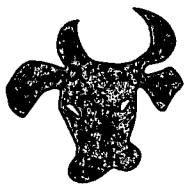
PROJECT DETAILS: Eddy County, NM (NAD27 NME)									
Geodetic System: US State Plane 1927 (Exact solution)									
Datum: NAD 1927 (NADCON CONUS)									
Ellipsoid: Clarke 1866									
Zone: New Mexico East: 3001									
System Datum: Mean Sea Level									

Map System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone Name: New Mexico East 3001
Local Origin: Well #394H, Grid North
Latitude: 32° 11' 54.645774 N
Longitude: 103° 48' 30.749748 W
Grid East: 662332.17
Grid North: 436334.90
Scale Factor: 1.000
Geomagnetic Model: IGRF2010_14
Sample Date: 08-Apr-13
Magnetic Declination: 7.47°
Dip Angle from Horizontal: 60.08°
Magnetic Field Strength: 48393
To convert a Magnetic Direction to a Grid Direction, Add 7.19°
To convert a Magnetic Direction to a True Direction, Add 7.47° East
To convert a True Direction to a Grid Direction, Subtract 0.28°

FORMATION TOP DETAILS					
TVDPath	MDPath	Formation	DipAngle	DipDir	
526.00	526.00	Rustler	0.39	134.78	
913.00	913.00	Salado	0.39	134.78	
4280.00	4280.00	Lamar	0.39	134.78	
4315.00	4315.00	Delaware Sands	0.39	134.78	
7844.36	7903.51	Lower Brushy Canyon 8A	0.39	134.78	
8016.87	8312.11	Top of Target	0.39	134.78	
8050.05	8490.12	Target Sand	0.39	134.78	

LEGEND
Plan #1 04-08-13





Bopco L P

Eddy County, NM (NAD27 NME)

Poker Lake Unit

#394H

Wellbore #1 / Job #1310421

Plan: Plan #1 04-08-13

Standard Planning Report

09 April, 2013



PHOENIX
TECHNOLOGY SERVICES



Phoenix Technology Services
Planning Report



Database:	GCR DB	Local Co-ordinate Reference:	Well #394H
Company:	Bopco L.P.	TVD Reference:	KB @ 3487.00usft (McVay 5)
Project:	Eddy County, NM (NAD27 NME)	MD Reference:	KB @ 3487.00usft (McVay 5)
Site:	Poker Lake Unit	North Reference:	Grid
Well:	#394H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1 / Job #1310421		
Design:	Plan #1 04-08-13		

Project:	Eddy County, NM (NAD27 NME)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site:	Poker Lake Unit		
Site Position:		Northing:	435,896.68 usft
From:	Map	Easting:	646,110.12 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 11' 51.053521 N
		Longitude:	103° 51' 39.561423 W
		Grid Convergence:	0.25 °

Well:	#394H		
Well Position	+N/-S	438.22 usft	Northing:
	+E/-W	16,222.05 usft	Easting:
Position Uncertainty	0.00 usft		Wellhead Elevation:
			Ground Level:

Wellbore:	Wellbore #1 / Job #1310421		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010_14	04/08/13	7.47

Design:	Plan #1 04-08-13		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			134.78

Plan Sections:										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)	
(usft)			(usft)			(°/100usft)	(°/100usft)	(°/100usft)		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7,409.00	0.00	0.00	7,409.00	0.00	0.00	0.00	0.00	0.00	0.00	
8,109.00	70.00	134.78	7,947.40	-265.55	267.60	10.00	10.00	0.00	134.78	
8,309.00	70.00	134.78	8,015.81	-397.93	401.00	0.00	0.00	0.00	0.00	
8,505.13	89.61	134.78	8,050.35	-533.24	537.35	10.00	10.00	0.00	0.00	
14,672.96	89.61	134.78	8,092.00	-4,877.63	4,915.33	0.00	0.00	0.00	0.00	PBHL-PLU #394H



Phoenix Technology Services
Planning Report



Database:	GCR DB	Local Co-ordinate Reference:	Well #394H
Company:	Bopco LP	TVD Reference:	KB @ 3487.00usft (McVay.5)
Project:	Eddy County, NM (NAD27 NME)	MD Reference:	KB @ 3487.00usft (McVay.5)
Site:	Poker Lake Unit	North Reference:	Grid
Well:	#394H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1 / Job #1310421		
Design:	Plan #1 04-08-13		

Planned 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	
526.00	0.00	0.00	526.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rustler										
907.00	0.00	0.00	907.00	0.00	0.00	0.00	0.00	0.00	0.00	
13 3/8" Surface										
913.00	0.00	0.00	913.00	0.00	0.00	0.00	0.00	0.00	0.00	
Salado										
4,280.00	0.00	0.00	4,280.00	0.00	0.00	0.00	0.00	0.00	0.00	
Lamar										
4,282.00	0.00	0.00	4,282.00	0.00	0.00	0.00	0.00	0.00	0.00	
9 5/8" Intermediate										
4,315.00	0.00	0.00	4,315.00	0.00	0.00	0.00	0.00	0.00	0.00	
Delaware Sands										
7,409.00	0.00	0.00	7,409.00	0.00	0.00	0.00	0.00	0.00	0.00	
KOP Start Build 10.00										
7,500.00	9.10	134.78	7,499.62	-5.08	5.12	7.21	10.00	10.00	0.00	
7,600.00	19.10	134.78	7,596.48	-22.22	22.39	31.54	10.00	10.00	0.00	
7,700.00	29.10	134.78	7,687.65	-50.94	51.34	72.32	10.00	10.00	0.00	
7,800.00	39.10	134.78	7,770.35	-90.38	91.08	128.32	10.00	10.00	0.00	
7,900.00	49.10	134.78	7,842.07	-139.34	140.42	197.82	10.00	10.00	0.00	
7,903.51	49.45	134.78	7,844.36	-141.22	142.31	200.48	10.00	10.00	0.00	
Lower Brushy Canyon 8A										
8,000.00	59.10	134.78	7,900.64	-196.33	197.84	278.72	10.00	10.00	0.00	
8,100.00	69.10	134.78	7,944.26	-259.61	261.61	368.56	10.00	10.00	0.00	
8,109.00	70.00	134.78	7,947.40	-265.55	267.60	376.99	10.00	10.00	0.00	
Start 200.00 hold at 8109.00 MD										
8,200.00	70.00	134.78	7,978.53	-325.78	328.29	462.51	0.00	0.00	0.00	
8,300.00	70.00	134.78	8,012.73	-391.97	395.00	556.48	0.00	0.00	0.00	
8,309.00	70.00	134.78	8,015.81	-397.93	401.00	564.93	0.00	0.00	0.00	
Start DLS 10.00 TFO 0.00 - 7" Production										
8,312.11	70.31	134.78	8,016.87	-399.99	403.08	567.86	10.00	10.00	0.00	
Top of Target										
8,400.00	79.10	134.78	8,040.03	-459.65	463.19	652.55	10.00	10.00	0.00	
8,490.12	88.11	134.78	8,050.05	-522.67	526.70	742.02	10.00	10.00	0.00	
Target Sand										
8,500.00	89.10	134.78	8,050.29	-529.63	533.71	751.90	10.00	10.00	0.00	
8,505.13	89.61	134.78	8,050.35	-533.24	537.35	757.03	10.00	10.00	0.00	
LP Start 6167.83 hold at 8505.13 MD										
8,600.00	89.61	134.78	8,050.99	-600.06	604.69	851.89	0.00	0.00	0.00	
8,700.00	89.61	134.78	8,051.66	-670.50	675.67	951.89	0.00	0.00	0.00	
8,800.00	89.61	134.78	8,052.34	-740.93	746.65	1,051.89	0.00	0.00	0.00	
8,900.00	89.61	134.78	8,053.02	-811.37	817.63	1,151.89	0.00	0.00	0.00	
9,000.00	89.61	134.78	8,053.69	-881.81	888.61	1,251.89	0.00	0.00	0.00	
9,100.00	89.61	134.78	8,054.37	-952.24	959.59	1,351.88	0.00	0.00	0.00	
9,200.00	89.61	134.78	8,055.04	-1,022.68	1,030.58	1,451.88	0.00	0.00	0.00	
9,300.00	89.61	134.78	8,055.72	-1,093.12	1,101.56	1,551.88	0.00	0.00	0.00	
9,400.00	89.61	134.78	8,056.39	-1,163.55	1,172.54	1,651.88	0.00	0.00	0.00	
9,500.00	89.61	134.78	8,057.07	-1,233.99	1,243.52	1,751.87	0.00	0.00	0.00	
9,600.00	89.61	134.78	8,057.74	-1,304.42	1,314.50	1,851.87	0.00	0.00	0.00	
9,700.00	89.61	134.78	8,058.42	-1,374.86	1,385.48	1,951.87	0.00	0.00	0.00	
9,800.00	89.61	134.78	8,059.09	-1,445.30	1,456.46	2,051.87	0.00	0.00	0.00	
9,900.00	89.61	134.78	8,059.77	-1,515.73	1,527.44	2,151.86	0.00	0.00	0.00	
10,000.00	89.61	134.78	8,060.44	-1,586.17	1,598.42	2,251.86	0.00	0.00	0.00	



Phoenix Technology Services

Planning Report



Database:	GCR DB	Local Co-ordinate Reference:	Well #394H
Company:	Bopco L P	TVD Reference:	KB @ 3487.00usft (McVay 5)
Project:	Eddy County: NM (NAD27 NME)	MD Reference:	KB @ 3487.00usft (McVay 5)
Site:	Poker Lake Unit	North Reference:	Grid
Well:	#394H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1 / Job #1310421		
Design:	Plan #1 04-08-13		

Planned 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)	
10,100.00	89.61	134.78	8,061.12	-1,656.61	1,669.40	2,351.86	0.00	0.00	0.00	
10,200.00	89.61	134.78	8,061.79	-1,727.04	1,740.38	2,451.86	0.00	0.00	0.00	
10,300.00	89.61	134.78	8,062.47	-1,797.48	1,811.36	2,551.86	0.00	0.00	0.00	
10,400.00	89.61	134.78	8,063.14	-1,867.91	1,882.35	2,651.85	0.00	0.00	0.00	
10,500.00	89.61	134.78	8,063.82	-1,938.35	1,953.33	2,751.85	0.00	0.00	0.00	
10,600.00	89.61	134.78	8,064.50	-2,008.79	2,024.31	2,851.85	0.00	0.00	0.00	
10,700.00	89.61	134.78	8,065.17	-2,079.22	2,095.29	2,951.85	0.00	0.00	0.00	
10,800.00	89.61	134.78	8,065.85	-2,149.66	2,166.27	3,051.84	0.00	0.00	0.00	
10,900.00	89.61	134.78	8,066.52	-2,220.10	2,237.25	3,151.84	0.00	0.00	0.00	
11,000.00	89.61	134.78	8,067.20	-2,290.53	2,308.23	3,251.84	0.00	0.00	0.00	
11,100.00	89.61	134.78	8,067.87	-2,360.97	2,379.21	3,351.84	0.00	0.00	0.00	
11,200.00	89.61	134.78	8,068.55	-2,431.40	2,450.19	3,451.83	0.00	0.00	0.00	
11,300.00	89.61	134.78	8,069.22	-2,501.84	2,521.17	3,551.83	0.00	0.00	0.00	
11,400.00	89.61	134.78	8,069.90	-2,572.28	2,592.15	3,651.83	0.00	0.00	0.00	
11,500.00	89.61	134.78	8,070.57	-2,642.71	2,663.13	3,751.83	0.00	0.00	0.00	
11,600.00	89.61	134.78	8,071.25	-2,713.15	2,734.11	3,851.83	0.00	0.00	0.00	
11,700.00	89.61	134.78	8,071.92	-2,783.59	2,805.10	3,951.82	0.00	0.00	0.00	
11,800.00	89.61	134.78	8,072.60	-2,854.02	2,876.08	4,051.82	0.00	0.00	0.00	
11,900.00	89.61	134.78	8,073.27	-2,924.46	2,947.06	4,151.82	0.00	0.00	0.00	
12,000.00	89.61	134.78	8,073.95	-2,994.89	3,018.04	4,251.82	0.00	0.00	0.00	
12,100.00	89.61	134.78	8,074.63	-3,065.33	3,089.02	4,351.81	0.00	0.00	0.00	
12,200.00	89.61	134.78	8,075.30	-3,135.77	3,160.00	4,451.81	0.00	0.00	0.00	
12,300.00	89.61	134.78	8,075.98	-3,206.20	3,230.98	4,551.81	0.00	0.00	0.00	
12,400.00	89.61	134.78	8,076.65	-3,276.64	3,301.96	4,651.81	0.00	0.00	0.00	
12,500.00	89.61	134.78	8,077.33	-3,347.08	3,372.94	4,751.81	0.00	0.00	0.00	
12,600.00	89.61	134.78	8,078.00	-3,417.51	3,443.92	4,851.80	0.00	0.00	0.00	
12,700.00	89.61	134.78	8,078.68	-3,487.95	3,514.90	4,951.80	0.00	0.00	0.00	
12,800.00	89.61	134.78	8,079.35	-3,558.38	3,585.88	5,051.80	0.00	0.00	0.00	
12,900.00	89.61	134.78	8,080.03	-3,628.82	3,656.87	5,151.80	0.00	0.00	0.00	
13,000.00	89.61	134.78	8,080.70	-3,699.26	3,727.85	5,251.79	0.00	0.00	0.00	
13,100.00	89.61	134.78	8,081.38	-3,769.69	3,798.83	5,351.79	0.00	0.00	0.00	
13,200.00	89.61	134.78	8,082.05	-3,840.13	3,869.81	5,451.79	0.00	0.00	0.00	
13,300.00	89.61	134.78	8,082.73	-3,910.57	3,940.79	5,551.79	0.00	0.00	0.00	
13,400.00	89.61	134.78	8,083.40	-3,981.00	4,011.77	5,651.78	0.00	0.00	0.00	
13,500.00	89.61	134.78	8,084.08	-4,051.44	4,082.75	5,751.78	0.00	0.00	0.00	
13,600.00	89.61	134.78	8,084.75	-4,121.87	4,153.73	5,851.78	0.00	0.00	0.00	
13,700.00	89.61	134.78	8,085.43	-4,192.31	4,224.71	5,951.78	0.00	0.00	0.00	
13,800.00	89.61	134.78	8,086.11	-4,262.75	4,295.69	6,051.78	0.00	0.00	0.00	
13,900.00	89.61	134.78	8,086.78	-4,333.18	4,366.67	6,151.77	0.00	0.00	0.00	
14,000.00	89.61	134.78	8,087.46	-4,403.62	4,437.65	6,251.77	0.00	0.00	0.00	
14,100.00	89.61	134.78	8,088.13	-4,474.06	4,508.64	6,351.77	0.00	0.00	0.00	
14,200.00	89.61	134.78	8,088.81	-4,544.49	4,579.62	6,451.77	0.00	0.00	0.00	
14,300.00	89.61	134.78	8,089.48	-4,614.93	4,650.60	6,551.76	0.00	0.00	0.00	
14,400.00	89.61	134.78	8,090.16	-4,685.36	4,721.58	6,651.76	0.00	0.00	0.00	
14,500.00	89.61	134.78	8,090.83	-4,755.80	4,792.56	6,751.76	0.00	0.00	0.00	
14,600.00	89.61	134.78	8,091.51	-4,826.24	4,863.54	6,851.76	0.00	0.00	0.00	
14,672.96	89.61	134.78	8,092.00	-4,877.63	4,915.33	6,924.72	0.00	0.00	0.00	
TD at 14672.96 - 4 1/2" Completion System - PBHL-PLU #394H										



Phoenix Technology Services
Planning Report



Database:	GCR DB	Local Co-ordinate Reference:	Well #394H
Company:	Bopco L P	TVD Reference:	KB @ 3487.00usft (McVay 5)
Project:	Eddy County, NM (NAD27 NME)	MD Reference:	KB @ 3487.00usft (McVay 5)
Site:	Poker Lake Unit	North Reference:	Grid
Well:	#394H	Survey/Calculation Method:	Minimum Curvature.
Wellbore:	Wellbore #1 / Job #1310421		
Design:	Plan #1 04-08-13		

Design Targets									
Target Name	hit/miss target	Dip Angle	Dip Dir	TVD	+N/-S	+E/-W	Northing	Easting	
Shape		(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)	
PBHL-PLU #394H		-89.61	134.78	8,092.00	-4,877.63	4,915.33	431,457.27	667,247.50	32° 11' 6.135781 N 103° 47' 33.831776 W
- plan hits target center									
- Rectangle (sides W40.00 H20.00 D6,167.83)									

Casing Points					
Measured Depth	Vertical Depth		Name	Casing Diameter	Hole Diameter
(usft)	(usft)			(")	(")
907.00	907.00	13 3/8"	Surface	13-3/8	17-1/2
4,282.00	4,282.00	9 5/8"	Intermediate	9-5/8	12-1/4
8,309.00	8,015.81	7"	Production	7	8-3/4
14,672.96	8,092.00	4 1/2"	Completion System	4-1/2	6-1/8

Formations					
Measured Depth	Vertical Depth		Name	Lithology	Dip Direction
(usft)	(usft)				(°)
526.00	526.00		Rustler		0.39 134.78
913.00	913.00		Salado		0.39 134.78
4,280.00	4,280.00		Lamar		0.39 134.78
4,315.00	4,315.00		Delaware Sands		0.39 134.78
7,903.51	7,844.36		Lower Brushy Canyon 8A		0.39 134.78
8,312.11	8,016.87		Top of Target		0.39 134.78
8,490.12	8,050.05		Target Sand		0.39 134.78

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(usft)	(usft)	+N/-S (usft)	+E/-W (usft)	
7,409.00	7,409.00	0.00	0.00	KOP Start Build 10.00
8,109.00	7,947.40	-265.55	267.60	Start 200.00 hold at 8109.00 MD
8,309.00	8,015.81	-397.93	401.00	Start DLS 10.00 TFO 0.00
8,505.13	8,050.35	-533.24	537.35	LP Start 6167.83 hold at 8505.13 MD
14,672.96	8,092.00	-4,877.63	4,915.33	TD at 14672.96