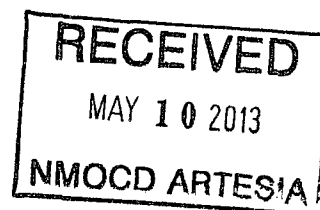




PHOENIX
TECHNOLOGY SERVICES

May 2, 2013

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



Dear District 2 – Artesia

MDade 5/14/2013
Accepted for record
NMOCD

Re: Bopco, LP
PLU Phantom Banks 20-25-31 USA #1H
Eddy Co., NM
API #30-015-40764
Job No. 1310221 Sidetrack 1

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. 606018). Other information required by your office is as follows:

Name & Title of Surveyor	Drainhole Number	Surveyed Depths		Dates Performed		Type of Survey
		From	To	Start	End	
Spencer Brown	1H	8,499	14,245	04/23/13	04/29/13	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: 7011 1570 0001 9667

PHOENIX TECHNOLOGY SERVICES INC. SURVEY DATA CERTIFICATION



PHOENIX JOB NUMBER 1310221

OPERATOR BOPCO LP

WELL NAME PLU Phantom Banks 20-25-31 USA 1H COUNTY & STATE

Eddy Co. NM

API WELL NUMBER	30-015-40764
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PROPOSED DIRECTION	180.15
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TIE-IN DATA						
MEASURED DEPTH	VERTICAL DEPTH	INCLIN	AZIMUTH	N-S COORD	E-W COORD	DATA SOURCE
1,064 ft	1,063.89 ft	0.93	352.1	3.60 N	6.10 W	GYRO

FIRST SURVEY DATE	FIRST SURVEY DEPTH	INCLIN	AZIMUTH
23-Apr-13	8,499 ft	2.8	185.1

SURVEY INSTRUMENT TYPE
Phoenix MWD

LAST SURVEY DATE	LAST SURVEY DEPTH	INCLIN	AZIMUTH
29-Apr-13	14,245 ft	90.2	177.9

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

PROJECTED TD SURVEY DATE	PROJECTED TD SURVEY DEPTH	INCLIN	AZIMUTH
29-Apr-13	14,300 ft	90.2	177.9

Spencer Brown

PRINT YOUR NAME ABOVE

SIGN YOUR NAME ABOVE

MAGNETIC DECLINATION OR TOTAL GRID

TOTAL CORRECTION USED	7.18
DECLINATION OR GRID	Grid

29-Apr

TODAY'S DATE

MWD SUPERVISOR 1

Spencer Brown

DIRECTIONAL DRILLER 1

Will Solomon

MWD SUPERVISOR 2

Brent Shaw

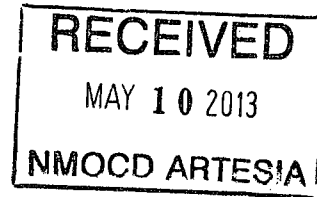
DIRECTIONAL DRILLER 2

Brady Welch

1805 Brittmore Road

Houston, Texas 77043

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



Bopco L P

Eddy County, NM (NAD27 NME)
PLU Phantom Banks 20-25-31 USA
1H (CVX)
ST1 / Job #1310221

Survey: ST1 Survey (Latshaw 14)

Phoenix Final Survey Report

30 April, 2013





Phoenix Technology Services
Phoenix Final Survey Report



Company:	Bopco L.P.	Local Co-ordinate Reference:	Well 1H (CVX)
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RF @ 3403.00usft (Latshaw 14)
Site:	PLU Phantom Banks 20-25-31 USA	MD Reference:	RF @ 3403.00usft (Latshaw 14)
Well:	1H (CVX)	North Reference:	Grid
Wellbore:	ST1 / Job #1310221	Survey Calculation Method:	Minimum Curvature
Design:	ST1 Survey (Latshaw 14)	Database:	GCR:DB

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		PLU Phantom Banks 20-25-31 USA			
Site Position:		Northing:	408,732.00 usft	Latitude:	32° 7' 21.442444 N
From:	Map	Easting:	663,226.00 usft	Longitude:	103° 48' 21.921111 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.28 °

Well	1H (CVX)					
Well Position	+N/-S	0.00 usft	Northing:	408,732.00 usft	Latitude:	32° 7' 21.442444 N
	+E/-W	0.00 usft	Easting:	663,226.00 usft	Longitude:	103° 48' 21.921111 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,383.00 usft

Wellbore		ST1 / Job #1310221			
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	04/25/13	7.46	60.01	48,344

Design		ST1 Survey (Latshaw 14)			
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	8,390.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.00	0.00	0.00	180.15	

Survey Program		Date	04/30/13		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
116.10	1,064.00	VES Gyro (OH / Job #1310221)	ISCWSA-GYRO-3	Biaxial Semi-Cont. Gyro	
1,064.00	8,390.00	Phoenix MWD Pilot Hole Survey (OH / Job	MWD	MWD - Standard	
8,390.00	14,300.00	ST1 Survey (Latshaw 14) (ST1 / Job #131	MWD	MWD - Standard	

Survey	MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
	8,390.00	1.50	223.00	8,389.06	-35.25	4.74	35.24	0.00
Tie-on to Pilot Hole	8,499.00	2.80	185.10	8,497.99	-38.94	3.53	38.94	1.71
Phoenix First ST1 MWD Survey	8,594.00	9.00	173.70	8,592.44	-48.65	4.14	48.64	6.61
	8,689.00	8.30	169.50	8,686.36	-62.78	6.21	62.76	0.99
	8,784.00	7.80	162.90	8,780.43	-75.68	9.35	75.66	1.11
	8,879.00	6.30	151.30	8,874.71	-86.42	13.75	86.38	2.17
	8,974.00	6.10	144.90	8,969.16	-95.12	19.16	95.07	0.76
	9,034.00	7.30	149.70	9,028.75	-101.02	22.92	100.96	2.21



Phoenix Technology Services
Phoenix Final Survey Report



Company:	Bopco L P	Local Co-ordinate Reference:	Well 1H (CVX)
Project:	Eddy County, NM (NAD27-NME)	TVD Reference:	RF @ 3403.00usft (Latshaw 14)
Site:	PLU Phantom Banks 20-25-31 USA	MD Reference:	RF @ 3403.00usft (Latshaw 14)
Well:	1H (CVX)	North Reference:	Grid
Wellbore:	ST1 / Job #1310221	Survey Calculation Method:	Minimum Curvature
Design:	ST1 Survey (Latshaw 14)	Database:	GCR.DB

Survey							
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
9,066.00	8.70	170.70	9,060.44	-105.16	24.33	105.10	10.05
9,097.00	8.10	186.50	9,091.11	-109.65	24.46	109.58	7.67
9,129.00	12.20	191.20	9,122.60	-115.21	23.55	115.15	13.06
9,160.00	15.70	202.30	9,152.69	-122.31	21.32	122.25	14.16
9,192.00	20.40	204.80	9,183.11	-131.38	17.34	131.33	14.88
9,224.00	23.80	204.10	9,212.75	-142.34	12.36	142.31	10.66
9,256.00	26.40	195.90	9,241.74	-155.08	7.77	155.06	13.55
9,287.00	29.60	193.60	9,269.11	-169.15	4.08	169.14	10.89
9,319.00	33.60	192.20	9,296.36	-185.50	0.35	185.50	12.71
9,351.00	36.90	188.60	9,322.49	-203.66	-2.96	203.66	12.18
9,383.00	39.50	184.00	9,347.64	-223.32	-5.10	223.33	12.04
9,414.00	41.60	180.10	9,371.20	-243.45	-5.81	243.46	10.62
9,446.00	44.70	179.90	9,394.54	-265.33	-5.81	265.34	9.70
9,478.00	47.40	181.50	9,416.75	-288.36	-6.10	288.38	9.17
9,509.00	51.20	181.80	9,436.96	-311.85	-6.77	311.87	12.28
9,541.00	54.40	183.60	9,456.30	-337.31	-7.98	337.33	10.96
9,573.00	58.00	184.20	9,474.10	-363.83	-9.80	363.86	11.36
9,604.00	61.70	185.30	9,489.67	-390.54	-12.02	390.57	12.32
9,636.00	65.10	185.40	9,504.00	-419.02	-14.69	419.06	10.63
9,668.00	68.50	184.60	9,516.60	-448.32	-17.25	448.36	10.87
9,699.00	72.50	183.50	9,526.95	-477.46	-19.31	477.51	13.33
9,731.00	76.60	182.10	9,535.47	-508.26	-20.81	508.31	13.49
9,763.00	80.30	182.30	9,541.88	-539.59	-22.01	539.64	11.58
9,795.00	85.00	182.10	9,545.97	-571.29	-23.23	571.35	14.70
9,826.00	88.70	180.80	9,547.67	-602.23	-24.01	602.29	12.65
9,858.00	90.90	181.10	9,547.78	-634.22	-24.54	634.28	6.94
9,921.00	90.70	181.60	9,546.90	-697.20	-26.03	697.26	0.85
10,016.00	89.80	178.20	9,546.49	-792.18	-25.86	792.25	3.70
10,111.00	89.10	177.60	9,547.40	-887.11	-22.38	887.17	0.97
10,206.00	92.10	178.00	9,546.41	-982.03	-18.74	982.07	3.19
10,301.00	91.90	177.80	9,543.09	-1,076.90	-15.26	1,076.94	0.30
10,396.00	90.90	176.70	9,540.77	-1,171.76	-10.70	1,171.79	1.56
10,491.00	91.40	179.50	9,538.86	-1,266.68	-7.55	1,266.70	2.99
10,586.00	92.40	179.20	9,535.71	-1,361.62	-6.47	1,361.63	1.10
10,681.00	91.10	179.20	9,532.81	-1,456.57	-5.15	1,456.58	1.37
10,775.00	91.20	180.30	9,530.93	-1,550.55	-4.74	1,550.55	1.17
10,870.00	90.60	180.10	9,529.43	-1,645.53	-5.07	1,645.54	0.67
10,965.00	89.80	180.10	9,529.10	-1,740.53	-5.24	1,740.54	0.84
11,060.00	89.20	180.30	9,529.93	-1,835.53	-5.57	1,835.53	0.67
11,155.00	89.80	179.60	9,530.76	-1,930.52	-5.48	1,930.53	0.97
11,249.00	89.20	179.70	9,531.58	-2,024.52	-4.91	2,024.52	0.65
11,344.00	89.50	180.00	9,532.66	-2,119.51	-4.66	2,119.51	0.45
11,439.00	89.30	179.90	9,533.65	-2,214.50	-4.58	2,214.51	0.24
11,534.00	89.90	178.90	9,534.32	-2,309.49	-3.58	2,309.50	1.23



Phoenix Technology Services
Phoenix Final Survey Report



Company: Bopco L.P.
Project: Eddy County, NM (NAD27 NME)
Site: PLU Phantom Banks 20-25-31 USA
Well: 1H (CVX)
Wellbore: ST1 / Job #1310221
Design: ST1 Survey (Latshaw 14)

Local Co-ordinate Reference: Well 1H (CVX)
TVD Reference: RF @ 3403.00usft (Latshaw 14)
MD Reference: RF @ 3403.00usft (Latshaw 14)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: GCR DB

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
11,629.00	89.80	179.00	9,534.57	-2,404.48	-1.84	2,404.48	0.15
11,724.00	89.50	178.90	9,535.15	-2,499.46	-0.10	2,499.45	0.33
11,818.00	88.70	178.90	9,536.62	-2,593.43	1.70	2,593.42	0.85
11,913.00	92.00	180.50	9,536.04	-2,688.41	2.20	2,688.40	3.86
12,008.00	91.20	180.10	9,533.39	-2,783.37	1.70	2,783.36	0.94
12,103.00	91.60	180.50	9,531.07	-2,878.34	1.21	2,878.33	0.60
12,198.00	91.80	180.20	9,528.25	-2,973.30	0.63	2,973.29	0.38
12,293.00	90.60	178.90	9,526.26	-3,068.27	1.37	3,068.26	1.86
12,388.00	89.20	178.60	9,526.43	-3,163.25	3.44	3,163.23	1.51
12,483.00	89.20	180.80	9,527.75	-3,258.23	3.94	3,258.21	2.32
12,578.00	88.90	180.50	9,529.33	-3,353.21	2.86	3,353.19	0.45
12,673.00	89.50	180.50	9,530.65	-3,448.20	2.04	3,448.18	0.63
12,768.00	88.50	180.30	9,532.31	-3,543.18	1.37	3,543.16	1.07
12,863.00	89.50	182.20	9,533.97	-3,638.14	-0.70	3,638.13	2.26
12,958.00	89.10	182.10	9,535.13	-3,733.06	-4.26	3,733.06	0.43
13,053.00	88.70	182.20	9,536.95	-3,827.98	-7.83	3,827.98	0.43
13,148.00	89.50	182.80	9,538.45	-3,922.87	-11.97	3,922.89	1.05
13,242.00	90.50	185.10	9,538.45	-4,016.64	-18.45	4,016.68	2.67
13,337.00	89.50	185.00	9,538.45	-4,111.27	-26.81	4,111.33	1.06
13,432.00	89.40	182.50	9,539.36	-4,206.06	-33.02	4,206.13	2.63
13,527.00	90.50	182.80	9,539.44	-4,300.95	-37.41	4,301.04	1.20
13,622.00	89.80	182.50	9,539.19	-4,395.85	-41.80	4,395.95	0.80
13,717.00	90.70	180.30	9,538.78	-4,490.82	-44.13	4,490.92	2.50
13,812.00	90.40	180.30	9,537.87	-4,585.81	-44.62	4,585.91	0.32
13,906.00	89.80	180.00	9,537.70	-4,679.81	-44.87	4,679.91	0.71
14,001.00	89.30	179.60	9,538.45	-4,774.81	-44.54	4,774.91	0.67
14,096.00	90.50	178.70	9,538.61	-4,869.79	-43.13	4,869.89	1.58
14,191.00	90.30	178.10	9,537.95	-4,964.75	-40.48	4,964.84	0.67
14,245.00	90.20	177.90	9,537.72	-5,018.72	-38.59	5,018.80	0.41
Phoenix Last ST1 MWD Survey							
14,300.00	90.20	177.90	9,537.52	-5,073.68	-36.58	5,073.76	0.00
Projection to Bit							

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
8,390.00	8,389.06	-35.25	4.74	Tie-on to Pilot Hole
8,499.00	8,497.99	-38.94	3.53	Phoenix First ST1 MWD Survey
14,245.00	9,537.72	-5,018.72	-38.59	Phoenix Last ST1 MWD Survey
14,300.00	9,537.52	-5,073.68	-36.58	Projection to Bit

Checked By: _____

Approved By: _____

Date: _____