



30-015-39251

BOPCO, L.P.

Eddy County(NAD27)

Poker Lake Unit

#327H

OH

Design: OH

PathfinderX & Y Report

27 February, 2012

PATHFINDER®

A Schlumberger Company



Pathfinder
PathfinderX & Y Report

PATHFINDER
A Schlumberger Company

Company:	BOPCO, L P	Local Co-ordinate Reference:	Well #327H
Project:	Eddy County(NAD27)	TVD Reference:	KB = 23.1 @ 3539 6usft (Latshaw #3)
Site:	Poker Lake Unit	MD Reference:	KB = 23.1 @ 3539 6usft (Latshaw #3)
Well:	#327H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000 1 Single User Db

Project	Eddy County(NAD27)		
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:	431,785 905 usft
From:	Map	Easting:	669,777 503 usft
Position Uncertainty:	0 0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 11' 9 261 N
		Longitude:	103° 47' 4 373 W
		Grid Convergence:	0 29 °

Well	#327H					
Well Position	+N/-S	0 0 usft	Northing:	449,802 990 usft	Latitude:	32° 14' 8 399 N
	+E/-W	0 0 usft	Easting:	652,222 372 usft	Longitude:	103° 50' 27 687 W
Position Uncertainty		0 0 usft	Wellhead Elevation:	usft	Ground Level:	3,516 5 usft

Wellbore	OH		
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Magnetics:	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	1/5/2012	7 63	60 16	48,576

Design		OH		
Audit Notes:				
Version:	1 0	Phase:	ACTUAL	Tie On Depth: 0 0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0 0	0 0	0 0	318 65



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Survey Program		Date 2/27/2012		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100 0	7,142 9	Gyro #1 (OH)	NS-GYRO-MS	North sensing gyrocompassing m/s
7,226 0	12,704 0	MWD #1 (OH)	MWD	MWD - Standard

MD (usft)	Inc (")	Azi (azimuth) (")	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg ("/100usft)	Northing (usft)	Easting (usft)
0 0	0 00	0 00	0 0	-3,539 6	0 0	0 0	0 0	0 00	449,802 99	652,222 37
100 0	0 41	278 43	100 0	-3,439 6	0 1	-0 4	0 3	0 41	449,803 04	652,222 02
200 0	0 44	281 22	200 0	-3,339 6	0 2	-1 1	0 9	0 04	449,803 17	652,221 29
300 0	0 65	296 34	300 0	-3,239 6	0 5	-2 0	1 7	0 25	449,803 50	652,220 40
400 0	0 97	294 52	400 0	-3,139 6	1 1	-3 2	3 0	0 32	449,804 10	652,219 12
401 6	0 97	294 10	401 6	-3,138 0	1 1	-3 3	3 0	0 44	449,804 11	652,219 10
T/Fresh Water										
489 6	1 08	273 14	489 6	-3,050 0	1 5	-4 8	4 3	0 44	449,804 46	652,217 59
T/Rustler										
500 0	1 10	271 01	500 0	-3,039 6	1 5	-5 0	4 4	0 44	449,804 47	652,217 39
600 0	1 17	251 20	599 9	-2,939 7	1 2	-6 9	5 4	0 40	449,804 16	652,215 47
700 0	0 84	244 32	699 9	-2,839 7	0 5	-8 5	6 0	0 35	449,803 51	652,213 84
800 0	1 03	247 15	799 9	-2,739 7	-0 1	-10 0	6 5	0 20	449,802 84	652,212 35
846 7	1 03	252 30	846 6	-2,693 0	-0 4	-10 8	6 8	0 20	449,802 55	652,211 57
T/Salt										
898 2	1 03	257 99	898 1	-2,641 5	-0 7	-11 7	7 2	0 20	449,802 32	652,210 68
991 7	1 01	259 13	991 6	-2,548 0	-1 0	-13 3	8 1	0 03	449,801 99	652,209 04
1,084 9	1 03	263 47	1,084 8	-2,454 8	-1 3	-15 0	8 9	0 09	449,801 73	652,207 41
1,178 1	0 86	268 16	1,178 0	-2,361 6	-1 4	-16 5	9 9	0 20	449,801 62	652,205 87
1,271 3	0 72	271 53	1,271 2	-2,268 4	-1 4	-17 8	10 7	0 16	449,801 61	652,204 59
1,364 5	0 57	283 78	1,364 3	-2,175 3	-1 3	-18 8	11 5	0 22	449,801 74	652,203 55
1,457 7	0 37	287 11	1,457 5	-2,082 1	-1 1	-19 6	12 1	0 22	449,801 94	652,202 82



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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000 1 Single User Db

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	D Leg (°/100usft)	Northing (usft)	Easting (usft)	
1,550 9	0 26	293 35	1,550 7	-1,988 9	-0 9	-20 0	12 6	0 12	449,802 11	652,202 33	
1,644 1	0 21	310 95	1,643 9	-1,895 7	-0 7	-20 4	12 9	0 09	449,802 30	652,202 01	
1,737 3	0 14	353 31	1,737 1	-1,802 5	-0 5	-20 5	13 2	0 15	449,802 53	652,201 87	
1,830 5	0 19	29 34	1,830 3	-1,709 3	-0 2	-20 4	13 3	0 12	449,802 78	652,201 93	
1,923 7	0 23	39 96	1,923 5	-1,616 1	0 1	-20 2	13 4	0 06	449,803 05	652,202 13	
2,016 9	0 21	63 99	2,016 7	-1,522 9	0 3	-20 0	13 4	0 10	449,803 27	652,202 40	
2,110 1	0 18	82 82	2,109 9	-1,429 7	0 4	-19 7	13 3	0 08	449,803 37	652,202 70	
2,203 3	0 15	132 91	2,203 1	-1,336 5	0 3	-19 4	13 1	0 15	449,803 30	652,202 93	
2,296 5	0 17	134 97	2,296 3	-1,243 3	0 1	-19 3	12 8	0 02	449,803 12	652,203 12	
2,389 7	0 14	93 79	2,389 5	-1,150 1	0 0	-19 0	12 6	0 12	449,803 02	652,203 33	
2,482 9	0 25	53 39	2,482 7	-1,056 9	0 1	-18 8	12 5	0 18	449,803 13	652,203 61	
2,576 1	0 35	42 22	2,575 9	-963 7	0 5	-18 4	12 5	0 12	449,803 46	652,203 96	
2,669 3	0 37	37 10	2,669 1	-870 5	0 9	-18 0	12 6	0 04	449,803 91	652,204 34	
2,762 5	0 29	35 65	2,762 3	-777 3	1 4	-17 7	12 7	0 09	449,804 34	652,204 66	
2,855 7	0 29	49 29	2,855 5	-684 1	1 7	-17 4	12 8	0 07	449,804 69	652,204 97	
2,948 9	0 31	62 43	2,948 7	-590 9	2 0	-17 0	12 7	0 08	449,804 96	652,205 37	
3,042 1	0 29	76 66	3,041 9	-497 7	2 1	-16 5	12 5	0 08	449,805 13	652,205 83	
3,135 3	0 28	77 63	3,135 1	-404 5	2 2	-16 1	12 3	0 01	449,805 23	652,206 28	
3,228 5	0 35	79 44	3,228 3	-311 3	2 3	-15 6	12 1	0 08	449,805 33	652,206 78	
3,321 7	0 38	73 01	3,321 5	-218 1	2 5	-15 0	11 8	0 05	449,805 48	652,207 36	
3,414 9	0 57	82 06	3,414 7	-124 9	2 6	-14 3	11 4	0 22	449,805 63	652,208 11	
3,508 1	1 02	110 70	3,507 9	-31 7	2 4	-13 0	10 4	0 63	449,805 40	652,209 35	
3,601 3	1 14	120 79	3,601 1	61 5	1 6	-11 5	8 8	0 24	449,804 63	652,210 92	
3,694 5	1 00	137 90	3,694 3	154 7	0 6	-10 1	7 1	0 37	449,803 56	652,212 26	
3,787 7	1 31	160 39	3,787 5	247 9	-1 0	-9 2	5 3	0 58	449,801 95	652,213 16	
3,880 9	1 47	169 41	3,880 6	341 0	-3 2	-8 6	3 3	0 29	449,799 77	652,213 74	



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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000 1 Single User Db

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
3,921.9	0.96	163.57	3,921.6	382.0	-4.1	-8.4	2.5	1.28	449,798.93	652,213.93	
B/Salt											
3,974.1	0.37	132.54	3,973.8	434.2	-4.6	-8.2	2.0	1.28	449,798.39	652,214.18	
4,067.3	0.22	104.49	4,067.0	527.4	-4.8	-7.8	1.5	0.22	449,798.14	652,214.58	
4,139.9	0.22	144.14	4,139.6	600.0	-5.0	-7.6	1.3	0.21	449,798.00	652,214.79	
T/Lamar											
4,160.5	0.24	153.70	4,160.2	620.6	-5.1	-7.5	1.2	0.21	449,797.92	652,214.84	
4,168.9	0.25	153.76	4,168.6	629.0	-5.1	-7.5	1.1	0.06	449,797.89	652,214.85	
T/Ramsey											
4,253.7	0.30	154.24	4,253.4	713.8	-5.5	-7.3	0.8	0.06	449,797.53	652,215.03	
4,346.9	0.25	138.86	4,346.6	807.0	-5.8	-7.1	0.3	0.10	449,797.16	652,215.27	
4,440.1	0.17	143.30	4,439.8	900.2	-6.1	-6.9	0.0	0.09	449,796.89	652,215.49	
4,533.3	0.12	176.58	4,533.0	993.4	-6.3	-6.8	-0.2	0.10	449,796.68	652,215.57	
4,626.5	0.20	206.36	4,626.2	1,086.6	-6.5	-6.9	-0.4	0.12	449,796.44	652,215.51	
4,719.7	0.24	220.44	4,719.4	1,179.8	-6.8	-7.1	-0.5	0.07	449,796.15	652,215.31	
4,812.9	0.25	223.62	4,812.6	1,273.0	-7.1	-7.3	-0.5	0.02	449,795.85	652,215.04	
4,906.1	0.37	228.68	4,905.8	1,366.2	-7.5	-7.7	-0.5	0.13	449,795.51	652,214.68	
4,999.3	0.34	229.56	4,999.0	1,459.4	-7.9	-8.1	-0.5	0.03	449,795.13	652,214.24	
5,092.5	0.27	226.95	5,092.2	1,552.6	-8.2	-8.5	-0.5	0.08	449,794.80	652,213.87	
5,185.7	0.25	228.00	5,185.4	1,645.8	-8.5	-8.8	-0.5	0.02	449,794.51	652,213.56	
5,278.9	0.14	233.56	5,278.6	1,739.0	-8.7	-9.1	-0.5	0.12	449,794.31	652,213.31	
5,372.1	0.18	311.82	5,371.8	1,832.2	-8.7	-9.3	-0.4	0.22	449,794.34	652,213.11	
5,465.3	0.51	321.41	5,465.0	1,925.4	-8.2	-9.6	0.2	0.36	449,794.76	652,212.75	
5,558.5	0.72	324.07	5,558.2	2,018.6	-7.4	-10.2	1.2	0.23	449,795.56	652,212.14	
5,651.7	0.72	321.25	5,651.4	2,111.8	-6.5	-10.9	2.3	0.04	449,796.49	652,211.43	
5,744.9	0.65	311.57	5,744.6	2,205.0	-5.7	-11.7	3.5	0.14	449,797.30	652,210.67	
5,838.1	0.54	304.67	5,837.8	2,298.2	-5.1	-12.5	4.4	0.14	449,797.90	652,209.91	
5,931.3	0.52	297.28	5,931.0	2,391.4	-4.6	-13.2	5.2	0.08	449,798.34	652,209.18	



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Design:	OH	Database:	EDM 5000 1 Single User Db

Survey:											
MD (usft)	Inc. (°)	Azi.(azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
6,024.5	0.65	291.88	6,024.2	2,484.6	-4.3	-14.1	6.1	0.15	449,798.73	652,208.31	
6,117.7	0.52	275.58	6,117.4	2,577.8	-4.0	-15.0	6.9	0.23	449,798.97	652,207.40	
6,210.9	0.48	261.85	6,210.6	2,671.0	-4.0	-15.8	7.4	0.14	449,798.96	652,206.59	
6,304.1	0.47	240.17	6,303.8	2,764.2	-4.3	-16.5	7.7	0.19	449,798.71	652,205.87	
6,377.9	0.41	203.15	6,377.6	2,838.0	-4.7	-16.9	7.6	0.39	449,798.32	652,205.51	
T/Lower Cherry Canyon											
6,397.3	0.42	192.98	6,397.0	2,857.4	-4.8	-16.9	7.6	0.39	449,798.19	652,205.47	
6,490.5	0.53	192.81	6,490.2	2,950.6	-5.6	-17.1	7.1	0.12	449,797.43	652,205.29	
6,583.7	0.50	208.66	6,583.4	3,043.8	-6.3	-17.4	6.7	0.16	449,796.66	652,205.00	
6,676.9	0.49	219.23	6,676.5	3,136.9	-7.0	-17.8	6.5	0.10	449,795.99	652,204.56	
6,770.1	0.46	228.34	6,769.7	3,230.1	-7.6	-18.3	6.5	0.09	449,795.43	652,204.02	
6,863.3	0.41	218.50	6,862.9	3,323.3	-8.1	-18.8	6.4	0.10	449,794.92	652,203.54	
6,956.5	0.52	190.05	6,956.1	3,416.5	-8.7	-19.1	6.1	0.27	449,794.25	652,203.26	
7,049.7	0.69	177.87	7,049.3	3,509.7	-9.7	-19.2	5.4	0.23	449,793.27	652,203.20	
7,142.9	0.70	177.26	7,142.5	3,602.9	-10.8	-19.1	4.5	0.01	449,792.14	652,203.25	
7,226.0	0.97	180.33	7,225.6	3,686.0	-12.1	-19.1	3.6	0.33	449,790.93	652,203.27	
7,257.0	0.79	187.73	7,256.6	3,717.0	-12.5	-19.1	3.2	0.69	449,790.46	652,203.24	
7,288.0	0.88	240.57	7,287.6	3,748.0	-12.9	-19.4	3.1	2.41	449,790.13	652,203.00	
7,320.0	2.11	264.95	7,319.6	3,780.0	-13.0	-20.2	3.5	4.24	449,789.95	652,202.20	
KOP - 7320.0 'MD, 7319.6 'TVD, -13.0 'N, -20.2 'E											
7,350.0	3.61	280.66	7,349.6	3,810.0	-12.9	-21.6	4.6	5.60	449,790.08	652,200.73	
7,382.0	5.45	287.87	7,381.5	3,841.9	-12.3	-24.1	6.7	6.01	449,790.73	652,198.29	
7,412.0	7.74	290.85	7,411.3	3,871.7	-11.1	-27.3	9.7	7.72	449,791.89	652,195.04	
7,443.0	9.94	292.48	7,441.9	3,902.3	-9.3	-31.8	14.0	7.14	449,793.66	652,190.62	
7,475.0	11.70	294.13	7,473.3	3,933.7	-7.0	-37.3	19.4	5.58	449,796.04	652,185.11	
7,520.0	14.25	294.51	7,517.2	3,977.6	-2.8	-46.5	28.6	5.67	449,800.20	652,175.90	
7,551.0	16.36	292.93	7,547.1	4,007.5	0.5	-54.0	36.0	6.94	449,803.49	652,168.41	



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Site:	Poker Lake Unit	MD Reference:	KB = 23 1 @ 3539 6usft (Latshaw #3)
Well:	#327H	North Reference:	Gnd
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000 1 Single User Db

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
7,582 0	19 26	291 43	7,576 6	4,037 0	4 1	-62 7	44 5	9 47	449,807 06	652,159 63
7,614 0	21 72	288 80	7,606 6	4,067 0	7 9	-73 3	54 3	8 21	449,810 89	652,149 11
7,644 0	24 27	287 30	7,634 2	4,094 6	11 5	-84 4	64 4	8 72	449,814 52	652,137 96
7,676 0	27 44	286 25	7,663 0	4,123 4	15 5	-97 8	76 3	10 01	449,818 54	652,124 60
7,707 0	30 78	285 63	7,690 0	4,150 4	19 7	-112 3	89 0	10 82	449,822 67	652,110 10
7,738 0	34 12	285 81	7,716 2	4,176 6	24 2	-128 3	102 9	10 78	449,827 18	652,094 09
7,769 0	37 46	285 54	7,741 3	4,201 7	29 1	-145 7	118 1	10 79	449,832 08	652,076 64
7,769 3	37 50	285 53	7,741 6	4,202 0	29 1	-145.9	118 3	11.13	449,832 13	652,076 45
T/Lwr Brushy Canyon 8A										
7,800 0	40 89	284 93	7,765 4	4,225 8	34 2	-164 6	134 5	11 13	449,837 22	652,057 75
7,831 0	44 49	284 84	7,788 1	4,248 5	39 6	-184 9	151 9	11.61	449,842.62	652,037 44
7,862 0	48 01	284 58	7,809 6	4,270 0	45.3	-206 6	170 5	11 37	449,848 30	652,015 78
7,893 0	50 83	288 36	7,829 7	4,290 1	52 0	-229 2	190 4	12 98	449,854 99	651,993 22
7,925 0	54 08	292 84	7,849 3	4,309 7	60 9	-252 9	212 8	15 04	449,863 93	651,969 49
7,956 0	57 42	297 06	7,866 7	4,327 1	71 8	-276 1	236 3	15 58	449,874 75	651,946 28
7,987 0	60 94	300 57	7,882 6	4,343 0	84 6	-299 4	261 3	14 95	449,887 59	651,922 97
8,019 0	64 10	304 18	7,897 4	4,357 8	99 8	-323 4	288 6	14 06	449,902 80	651,899 01
8,050 0	67 53	308 13	7,910 1	4,370 5	116 5	-346 2	316 2	16 05	449,919 48	651,876 19
8,054 1	68 12	308 46	7,911 6	4,372 0	118 8	-349 2	319 9	16.28	449,921 83	651,873 22
T/Lwr Brushy Canyon Y Sand										
8,081 0	72 02	310 59	7,920 8	4,381 2	134 9	-368 7	344 9	16 28	449,937 93	651,853 71
8,112 0	76 41	313 05	7,929 2	4,389 6	154.8	-390 9	374 5	16 09	449,957 82	651,831 49
8,143 0	80 55	316 31	7,935 4	4,395 8	176 2	-412 5	404 8	16 87	449,979 18	651,809 91
8,175 0	83 98	320 26	7,939 7	4,400 1	199 9	-433 6	436 5	16 26	450,002 84	651,788 82
8,205 0	87 32	324 04	7,942 0	4,402 4	223 5	-451 9	466 3	16 79	450,026 45	651,770 47
8,237 0	91 54	326 87	7,942 3	4,402 7	249 8	-470 0	498 1	15 88	450,052 80	651,752 33
LP - 8237.0 'MD, 7942.3 'TVD, 249.8 'N, -470.0 'E										
8,268 0	92 86	330 68	7,941 1	4,401 5	276 3	-486 1	528 6	13 00	450,079 29	651,736 28



Pathfinder
PathfinderX & Y Report

PATHFINDER
A Schlumberger Company

Company:	BOPCO, L P	Local Co-ordinate Reference:	Well #327H
Project:	Eddy County(NAD27)	TVD Reference:	KB = 23 1 @ 3539 6usft (Latshaw #3)
Site:	Poker Lake Unit	MD Reference:	KB = 23 1 @ 3539 6usft (Latshaw #3)
Well:	#327H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000 1 Single User Db

Survey											
MD (usft)	Inc (°)	Azi.(azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
8,299 0	92 07	333 95	7,939 8	4,400 2	303 7	-500 5	558 7	10 84	450,106 71	651,721 89	
8,330 0	91 36	337 28	7,938 8	4,399 2	331 9	-513 3	588 3	10 98	450,134 93	651,709 10	
8,361 0	90 84	338 87	7,938 3	4,398 7	360 7	-524 8	617 5	5 40	450,163 68	651,697 53	
8,393 0	91 01	338 97	7,937 7	4,398 1	390 5	-536 4	647 5	0 62	450,193 53	651,686 02	
8,424 0	90 92	338 37	7,937.2	4,397 6	419 4	-547 6	676 7	1 96	450,222.40	651,674 74	
8,455 0	89 34	337 19	7,937 1	4,397 5	448 1	-559 4	705 9	6 36	450,251 10	651,663 02	
8,486 0	87 85	336 56	7,937 9	4,398 3	476 6	-571 5	735 4	5 22	450,279 60	651,650 85	
8,517 0	87 67	336 50	7,939 1	4,399 5	505 0	-583 9	764 9	0 61	450,308 01	651,638 51	
8,548 0	89 08	336 87	7,940 0	4,400 4	533 5	-596 1	794 3	4 70	450,336 47	651,626 25	
8,579 0	89.78	337 11	7,940 3	4,400 7	562 0	-608 2	823 7	2 39	450,365 00	651,614 13	
8,610 0	90 13	336 71	7,940 3	4,400 7	590 5	-620 4	853 2	1 71	450,393 52	651,601 98	
8,641 0	90.13	336 14	7,940.3	4,400.7	618 9	-632 8	882 7	1 84	450,421 93	651,589 58	
8,672 0	90 40	335 68	7,940 1	4,400 5	647 2	-645 4	912 3	1 72	450,450 23	651,576 92	
8,702.0	90 75	335 82	7,939 8	4,400 2	674 6	-657 8	941 0	1 26	450,477 58	651,564 60	
8,733 0	90 22	334 80	7,939 5	4,399 9	702.8	-670 7	970 7	3 71	450,505 75	651,551 65	
8,764 0	89 25	334 02	7,939 7	4,400 1	730 7	-684 1	1,000 5	4 02	450,533 71	651,538 27	
8,795.0	89 16	333 42	7,940 1	4,400 5	758 5	-697 8	1,030 4	1 96	450,561 50	651,524.54	
8,826 0	89 43	333 98	7,940 5	4,400 9	786 3	-711 6	1,060 4	2 01	450,589 29	651,510 81	
8,857 0	90 04	334 85	7,940 6	4,401 0	814 3	-725 0	1,090 2	3 43	450,617 25	651,497 42	
8,889 0	90 48	335 19	7,940 5	4,400 9	843 3	-738 5	1,120 9	1 74	450,646 25	651,483 91	
8,920 0	91 10	334 63	7,940 1	4,400 5	871 3	-751 6	1,150 7	2 69	450,674 33	651,470 76	
8,951 0	91 80	335 08	7,939 3	4,399 7	899 4	-764 8	1,180 4	2 68	450,702 38	651,457 59	
8,983 0	91 89	335 28	7,938 3	4,398 7	928 4	-778 2	1,211 1	0 69	450,731 41	651,444 17	
9,013 0	90 04	334 59	7,937 8	4,398 2	955 6	-790 9	1,239 9	6 58	450,758 58	651,431.46	
9,133 0	90 92	334 24	7,936 7	4,397 1	1,063 8	-842 7	1,355 3	0 79	450,866 81	651,379 64	
9,196.0	92 86	334 68	7,934 7	4,395 1	1,120 6	-869 9	1,415 9	3 16	450,923 62	651,352 50	
9,228 0	92 59	334 32	7,933 2	4,393 6	1,149 5	-883 6	1,446 7	1 41	450,952 47	651,338 74	



Pathfinder
PathfinderX & Y Report

PATHFINDER
A Schlumberger Company

Company:	BOPCO, L P	Local Co-ordinate Reference:	Well #327H
Project:	Eddy County(NAD27)	TVD Reference:	KB = 23 1 @ 3539 6usft (Latshaw #3)
Site:	Poker Lake Unit	MD Reference:	KB = 23 1 @ 3539 6usft (Latshaw #3)
Well:	#327H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000 1 Single User Db

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
9,260 0	92 86	335 11	7,931 6	4,392 0	1,178 4	-897 3	1,477 4	2 61	450,981 37	651,325 08	
9,292 0	92 24	334 58	7,930 2	4,390 6	1,207 3	-910 9	1,508 1	2 55	451,010 30	651,311 49	
9,323 0	91 96	334 71	7,929 1	4,389 5	1,235 3	-924 1	1,537 9	1 00	451,038 30	651,298 23	
9,355 0	91 19	335 03	7,928 2	4,388 6	1,264 3	-937 7	1,568 6	2 61	451,067 26	651,284 64	
9,387 0	91 10	334 67	7,927 6	4,388 0	1,293 2	-951 3	1,599 3	1 16	451,096 22	651,271 05	
9,419 0	90 57	333 88	7,927 1	4,387 5	1,322 1	-965 2	1,630 1	2 97	451,125 04	651,257 16	
9,452 0	90 22	333 97	7,926 9	4,387 3	1,351 7	-979 7	1,661 9	1 10	451,154 68	651,242 65	
9,484 0	91 10	333 36	7,926 5	4,386 9	1,380 4	-993 9	1,692 8	3 35	451,183 36	651,228 46	
9,515 0	90 84	332 21	7,926 0	4,386 4	1,407 9	-1,008 1	1,722 9	3 80	451,210 92	651,214 29	
9,547 0	90 40	330 98	7,925 6	4,386 0	1,436 1	-1,023 3	1,754 1	4 08	451,239 07	651,199 06	
9,579 0	90 13	330 54	7,925 5	4,385 9	1,464 0	-1,038 9	1,785 4	1 61	451,266 99	651,183 43	
9,610 0	88 72	329 05	7,925 8	4,386 2	1,490 8	-1,054 5	1,815 8	6 62	451,293 78	651,167 84	
9,642 0	89 16	328 43	7,926 4	4,386 8	1,518 1	-1,071 1	1,847 3	2 38	451,321 13	651,151 24	
9,674 0	89 16	327 20	7,926 8	4,387 2	1,545 2	-1,088 2	1,878 9	3 84	451,348 21	651,134 19	
9,706 0	88 99	326 06	7,927 4	4,387 8	1,571 9	-1,105 8	1,910 6	3 60	451,374 93	651,116 59	
9,738 0	89 52	324 92	7,927 8	4,388 2	1,598 3	-1,123 9	1,942 3	3 93	451,401 30	651,098 47	
9,769 0	89 25	322 28	7,928 1	4,388 5	1,623 3	-1,142 3	1,973 2	8 56	451,426 24	651,080 07	
9,800 0	88 90	320 00	7,928 6	4,389 0	1,647 4	-1,161 7	2,004 2	7 44	451,450 38	651,060 63	
9,831 0	88 46	319 12	7,929 3	4,389 7	1,671 0	-1,181 8	2,035 2	3 17	451,473 96	651,040 53	
9,863 0	90 22	319 82	7,929 7	4,390 1	1,695 3	-1,202 6	2,067 2	5 92	451,498 28	651,019 73	
9,895 0	89 87	318 24	7,929 7	4,390 1	1,719 5	-1,223 6	2,099 2	5 06	451,522 44	650,998 75	
9,927 0	88 90	317 54	7,930 0	4,390 4	1,743 2	-1,245 1	2,131 1	3 74	451,546 18	650,977 30	
9,959 0	90 04	318 06	7,930 3	4,390 7	1,766 9	-1,266 6	2,163 1	3 92	451,569 89	650,955 80	
9,991 0	89 52	316 74	7,930 4	4,390 8	1,790 5	-1,288 2	2,195 1	4 43	451,593 44	650,934 14	
10,022 0	89 69	316 83	7,930 6	4,391 0	1,813 0	-1,309 5	2,226 1	0 62	451,616 03	650,912 92	
10,054 0	90 22	316 39	7,930 7	4,391 1	1,836 3	-1,331 4	2,258 1	2 15	451,639 29	650,890 93	
10,086 0	90 40	315 87	7,930 5	4,390 9	1,859 4	-1,353 6	2,290 1	1 72	451,662 36	650,868 76	



Pathfinder
PathfinderX & Y Report

PATHFINDER
A Schlumberger Company

Company:	BOPCO, L.P.	Local Co-ordinate Reference:	Well #327H
Project:	Eddy County(NAD27)	TVD Reference:	KB = 23 1 @ 3539 6usft (Latshaw #3)
Site:	Poker Lake Unit	MD Reference:	KB = 23 1 @ 3539 6usft (Latshaw #3)
Well:	#327H	North Reference:	Gnd
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000 1 Single User Db

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
10,117 0	90 13	315 16	7,930 3	4,390 7	1,881 5	-1,375 3	2,321 0	2 45	451,684 47	650,847 04	
10,150 0	90 84	315 34	7,930 1	4,390 5	1,904 9	-1,398 6	2,354 0	2 22	451,707 91	650,823 80	
10,181 0	90 75	314 99	7,929 6	4,390 0	1,926 9	-1,420 4	2,384 9	1 17	451,729 89	650,801 95	
10,212 0	91 54	314 02	7,929 0	4,389 4	1,948 6	-1,442 5	2,415 8	4 03	451,751 61	650,779 84	
10,244 0	91 28	313 85	7,928 2	4,388 6	1,970 8	-1,465 6	2,447 7	0 97	451,773 81	650,756 81	
10,276 0	90 48	313 32	7,927 7	4,388 1	1,992 9	-1,488 7	2,479 6	3 00	451,795 87	650,733 63	
10,308 0	90 40	313 67	7,927 5	4,387 9	2,014 9	-1,512 0	2,511 4	1 12	451,817 89	650,710 42	
10,340 0	91 19	313 49	7,927 1	4,387 5	2,037 0	-1,535 1	2,543 3	2 53	451,839 95	650,687 24	
10,372 0	91 45	313 40	7,926 3	4,386 7	2,059 0	-1,558 4	2,575 2	0 86	451,861 95	650,664 01	
10,404 0	91 45	311 82	7,925 5	4,385 9	2,080 6	-1,581 9	2,607 0	4 94	451,883 61	650,640 47	
10,436 0	91 10	310 42	7,924 8	4,385 2	2,101 7	-1,606 0	2,638 7	4 51	451,904 65	650,616 37	
10,467 0	91 10	310 15	7,924 2	4,384 6	2,121 7	-1,629 6	2,669 4	0 87	451,924 69	650,592 73	
10,500 0	90 92	309 19	7,923 6	4,384 0	2,142 8	-1,655 0	2,701 9	2 96	451,945 75	650,567 33	
10,532 0	90 75	308 39	7,923 1	4,383 5	2,162 8	-1,680 0	2,733 5	2 56	451,965 79	650,542 39	
10,627 0	90 13	306 81	7,922 4	4,382 8	2,220 8	-1,755 2	2,826 7	1 79	452,023 75	650,467 13	
10,723 0	90 92	307 52	7,921 5	4,381 9	2,278 8	-1,831 7	2,920 8	1 11	452,081 74	650,390 63	
10,755 0	89 60	305 85	7,921 4	4,381 8	2,297 9	-1,857 4	2,952 1	6 65	452,100 86	650,364 97	
10,786 0	89 16	306 11	7,921 7	4,382 1	2,316 1	-1,882 5	2,982 3	1 65	452,119 07	650,339 88	
10,819 0	90 57	307 60	7,921 8	4,382 2	2,335 9	-1,908 9	3,014 6	6 22	452,138 86	650,313 48	
10,882 0	89 78	308 83	7,921 6	4,382 0	2,374 8	-1,958 4	3,076 6	2 32	452,177 84	650,263 98	
10,914 0	89 16	310 42	7,921 9	4,382 3	2,395 3	-1,983 0	3,108 2	5 33	452,198 24	650,239 34	
10,946 0	90 40	311 73	7,922 0	4,382 4	2,416 3	-2,007 2	3,139 9	5 64	452,219 27	650,215 22	
11,009 0	94 18	312 09	7,919 5	4,379 9	2,458 3	-2,054 0	3,202 4	6 03	452,261 31	650,168 38	
11,105 0	93 83	311 38	7,912 8	4,373 2	2,522 1	-2,125 5	3,297 5	0 82	452,325 06	650,096 91	
11,200 0	92 77	313 76	7,907 3	4,367 7	2,586 2	-2,195 3	3,391 8	2 74	452,389 21	650,027 07	
11,295 0	90 66	316 57	7,904 5	4,364 9	2,653 5	-2,262 2	3,486 5	3 70	452,456 54	649,960 13	
11,390 0	92 42	317 89	7,901 9	4,362 3	2,723 3	-2,326 7	3,581 5	2 32	452,526 25	649,895 65	



Pathfinder
PathfinderX & Y Report

PATHFINDER
A Schlumberger Company

Company:	BOPCO, L P	Local Co-ordinate Reference:	Well #327H
Project:	Eddy County(NAD27)	TVD Reference:	KB = 23 1 @ 3539 6usft (Latshaw #3)
Site:	Poker Lake Unit	MD Reference:	KB = 23 1 @ 3539 6usft (Latshaw #3)
Well:	#327H	North Reference:	Grd
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000 1 Single User Db

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
11,485 0	88 37	316 22	7,901 3	4,361 7	2,792 8	-2,391 4	3,676 4	4 61	452,595 77	649,830 95	
11,580 0	89 52	317 10	7,903 0	4,363 4	2,861 9	-2,456 6	3,771 3	1 52	452,664 85	649,765 76	
11,675 0	89 60	317 36	7,903 8	4,364 2	2,931 6	-2,521 1	3,866 3	0 29	452,734 59	649,701 25	
11,770 0	89 34	316 83	7,904 6	4,365 0	3,001 2	-2,585 8	3,961 3	0 62	452,804 17	649,636 58	
11,867 0	90 92	318 50	7,904 4	4,364 8	3,072 9	-2,651 1	4,058 2	2 37	452,875 87	649,571 26	
11,962 0	91 28	318 06	7,902 6	4,363 0	3,143 8	-2,714 3	4,153 2	0 60	452,946 76	649,508 05	
12,057 0	91 19	317 62	7,900 6	4,361 0	3,214 2	-2,778 1	4,248 2	0 47	453,017 17	649,444 30	
12,154 0	90 84	317 18	7,898 8	4,359 2	3,285 6	-2,843 7	4,345 2	0 58	453,088 56	649,378 65	
12,250 0	91 80	316 74	7,896 6	4,357 0	3,355 7	-2,909 2	4,441 1	1 10	453,158 70	649,313 15	
12,345 0	91 36	312 88	7,894 0	4,354 4	3,422 6	-2,976 6	4,535 8	4 09	453,225 61	649,245 79	
12,440 0	89 60	311 30	7,893 2	4,353 6	3,486 3	-3,047 1	4,630 2	2 49	453,289 29	649,175 30	
12,535 0	91 19	313 58	7,892 6	4,353 0	3,550 4	-3,117 2	4,724 6	2 93	453,353 39	649,105 20	
12,631 0	88 99	312 09	7,892 4	4,352 8	3,615 7	-3,187 6	4,820 1	2 77	453,418 65	649,034 81	
12,640 0	88 99	311 65	7,892 6	4,353 0	3,621 7	-3,194 3	4,829 1	4 89	453,424 66	649,028 10	
12,704 0	88 99	311 65	7,893 7	4,354 1	3,664 2	-3,242 1	4,892 6	0 00	453,467 18	648,980 29	
BHL - 12704.0 'MD, 7893.7 'TVD, 3664.2 'N, -3242.1 'E											



Pathfinder
PathfinderX & Y Report

PATHFINDER
A Schlumberger Company

Company:	BOPCO, L P	Local Co-ordinate Reference:	Well #327H
Project:	Eddy County(NAD27)	TVD Reference:	KB = 23 1 @ 3539 6usft (Latshaw #3)
Site:	Poker Lake Unit	MD Reference:	KB = 23 1 @ 3539 6usft (Latshaw #3)
Well:	#327H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000 1 Single User Db

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,168 9	4,168 6	T/Ramsey		0 00		
8,054 1	7,911 6	T/Lwr Brushy Canyon Y Sand		0 00		
846 7	846 6	T/Salt		0 00		
401 6	401 6	T/Fresh Water		0 00		
7,769 3	7,741 6	T/Lwr Brushy Canyon 8A		0 00		
6,377 9	6,377 6	T/Lower Cherry Canyon		0 00		
3,921 9	3,921 6	B/Salt		0 00		
4,139 9	4,139 6	T/Lamar		0 00		
489 6	489 6	T/Rustler		0 00		

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
7,320 0	7,319 6	-13 0	-20 2	KOP - 7320 0 'MD, 7319 6 'TVD, -13 0 'N, -20 2 'E	
8,237 0	7,942 3	249 8	-470 0	LP - 8237 0 'MD, 7942 3 'TVD, 249 8 'N, -470 0 'E	
12,704 0	7,893 7	3,664 2	-3,242 1	BHL - 12704 0 'MD, 7893 7 'TVD, 3664 2 'N, -3242 1 'E	

Checked By	Approved By	Date:
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