



30-015-42630

November 7, 2014

BOPCO, LP
P O Box 2760
Midland, TX 79702

 **CONFIDENTIAL**

Attn: Drilling Department

RE: **Poker Lake Unit CVX JV PB No. 008H**

Please find enclosed a copy of the survey from 0.00' to 900.00' ran on the above referenced well.

If I can be of any further service please do not hesitate to call me at 800-606-4976.

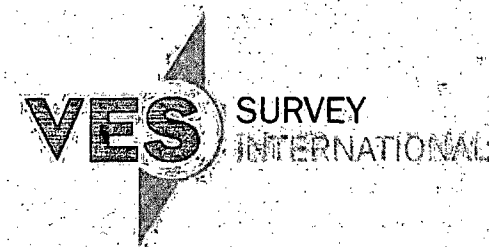
Sincerely,

Keith Havelka
Operations

VES Survey International
P.O. Box 261021 Corpus Christi, TX 78426
T (361) 767-0602 F (361) 767-0612
www.vessurvey.com



Company: Bopco
Lease/Well: Poker Lake Unit CVX JV PB /No. 008H
Location: Sec 5 T26S R31E
Rig Name: McVay 1
State/County: New Mexico/Eddy
Latitude: 32.09, Longitude: -103.79
GRID North is 0.29 Degrees East of True North
VS-Azi: 0.00 Degrees



Depth Reference : RKB= 20 Feet

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: ...e unit cvx jv pb #8h-de_01.ut

Minimum Curvature Method

Report Date/Time: 11/7/2014 / 08:45

VES Survey International
West Texas

(432) 563-5444

Surveyor: Chris Bankson

Poker Lake Unit CVX JV PB No. 008H / API 30-015-42630

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.50	305.50	100.00	0.25	-0.36	0.25	0.44	305.50	0.50
200.00	0.75	317.46	199.99	0.99	-1.15	0.99	1.52	310.62	0.28
300.00	0.99	318.36	299.98	2.12	-2.17	2.12	3.03	314.29	0.24
400.00	0.67	313.72	399.97	3.17	-3.17	3.17	4.48	315.00	0.32
500.00	0.59	304.49	499.96	3.86	-4.02	3.86	5.57	313.90	0.13
600.00	0.29	281.59	599.96	4.21	-4.69	4.21	6.30	311.92	0.34
700.00	0.14	265.43	699.96	4.25	-5.05	4.25	6.60	310.06	0.16
800.00	0.10	267.68	799.96	4.23	-5.25	4.23	6.75	308.86	0.04
900.00	0.23	310.93	899.96	4.36	-5.49	4.36	7.01	308.47	0.17

GTI

VES Surey International

West Texas

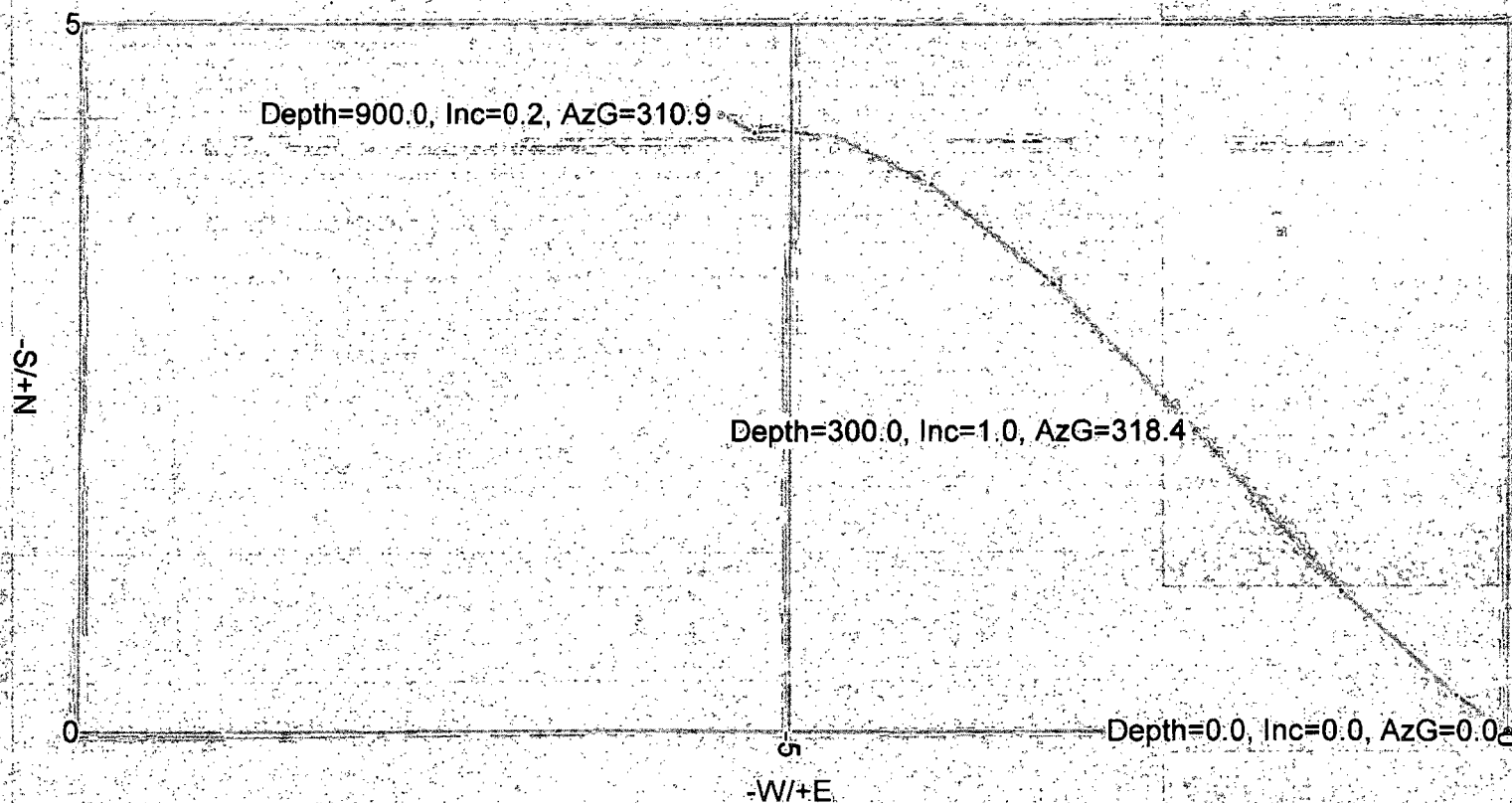
(432) 563-5444

Surveyor: Chris Bankson

Poker Lake Unit CVX JV PB No. 008H / API 30-015-42630

VES

SURVEY
INTERNATIONAL



VES Survey Date: 10/22/2014

CONFIDENTIAL

30-015-42430

BOPCO, L.P.

Poker Lake Unit PB CVX JV #008H
Eddy Co, NM



Plan Data for Poker Lake Unit PB CVX JV #008H

Plan Point Information:									
DogLeg Severity Unit: */100,000									
MD	Inc	Az	TVD	N/-S	E/-W	Northing	Easting	VSec	DLS
(USft)	(")	(")	(USft)	(USft)	(USft)	(USft)	(USft)	(USft)	(DLSU)
12564.00	89.38	180.58	10136.86	-2739.19	22.52	393369.31	667223.62	2739.26	1.86
12663.79	88.00	180.00	10139.14	-2838.95	22.02	393269.55	667223.12	2839.02	1.50
13523.75	88.00	180.00	10169.15	-3698.42	22.02	392410.08	667223.12	3698.49	0.00
13624.21	90.00	179.80	10170.90	-3798.82	22.15	392309.68	667223.29	3798.88	2.00
17979.51	90.00	179.80	10171.00	-8154.10	37.10	387954.40	667238.20	8154.18	0.00

Plan Data for Poker Lake Unit PB CVX JV #008H

Target Set Information:									
Name: PLU PB CVX JV #008H									
Position offsets from Slot centre									
Name	TVD	SS	N/-S	E/-W	Northing	Easting	Shape	Comment	
	(USft)		(USft)	(USft)	(USft)	(USft)	(USft)		
PBHL #008	10171.00	-6865.00	-8154.10	37.10	387954.40	667238.20	Cuboid		
HB 1 For Dwg	10214.00	-6910.00	0.00	0.00	396108.50	667201.10	Cuboid		
HB 2 For Dwg	10208.00	-6902.00	-1998.56	9.09	394109.94	667210.19	Cuboid		
HB 3 For Dwg	10156.00	-6850.00	-8154.10	37.10	387954.40	667238.20	Cuboid		

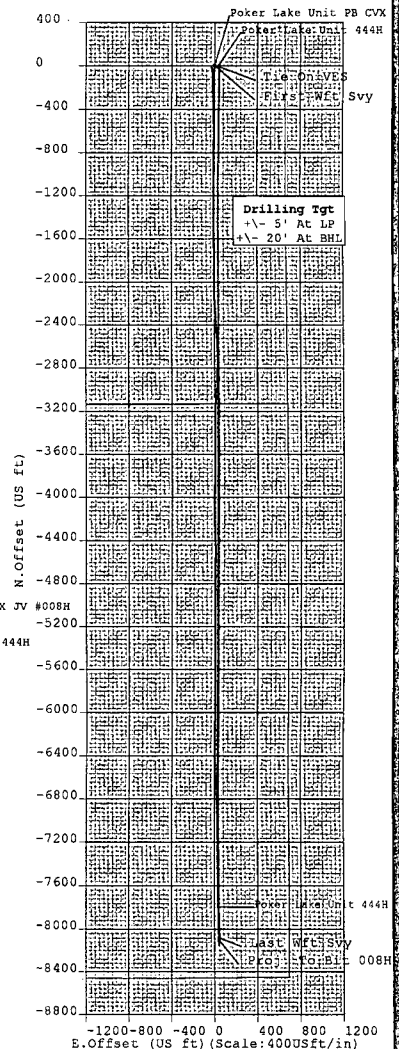
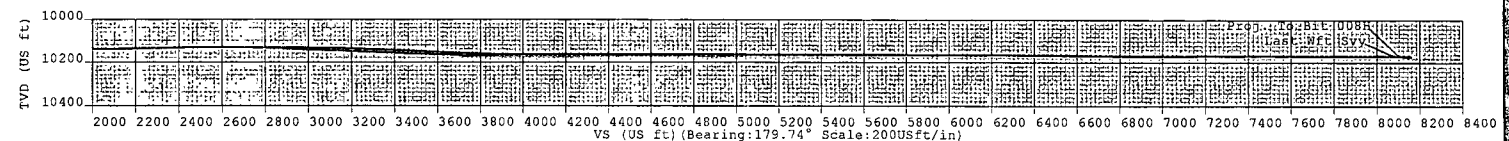
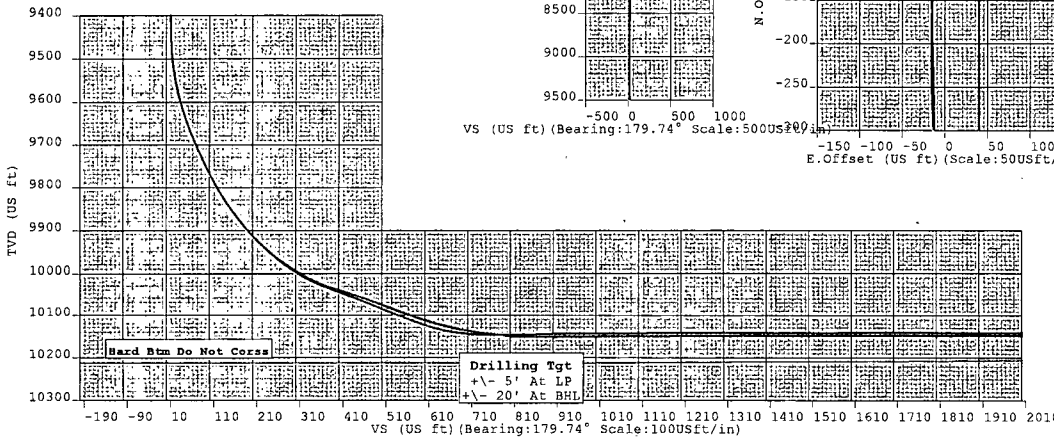
Plan Data for Poker Lake Unit PB CVX JV #008H

Slot: Poker Lake Unit PB CVX JV #008H									
Position:									
Offset is from Slot centre									
N/-S	E/-W	0.00USft	0.00USft	0.00USft	0.00USft	0.00USft	0.00USft	0.00USft	0.00USft
Northing	Easting	667201.10USft	Latitude	Longitude	-103°47'36.4"				
Elevation Above VRS: 3286.00USft									

Plan Data for Poker Lake Unit PB CVX JV #008H

Well: Poker Lake Unit PB CVX JV #008H									
Type: Main-Well									
File Number:									
Plan Folder: P3									
Plan: P3V1									
Vertical Section: Position offset of origin from Slot centre:									
N/-S	E/-W	0.00USft	0.00USft	0.00USft	0.00USft	0.00USft	0.00USft	0.00USft	0.00USft
Northing	Easting	667201.10USft	Latitude	Longitude	-103°47'36.4"				
Magnetic Parameters:									
Model:	Field Strength:	Declination:	Dip:	Date:	2014-10-15				
BGM	48159(nT)	7.44°	59.93°						

KB: 3306
GR: 3286



5D Survey Report**BOPCO, L.P.****Field Name:** *Eddy Co, NM Nad27 NMEZ***Site Name:** *Poker Lake Unit PB CVX JV #008H***Well Name:** *Poker Lake Unit PB CVX JV #008H***Survey:** *Wft MWD Svy*

14 November 2014

NM OIL CONSERVATION
ARTESIA DISTRICT

FEB 2 2015

RECEIVED



5D Survey Report

Poker Lake Unit PB CVX JV #008H

Field Name Eddy Co. NM Nad27 NMEZ	Map Units : US ft		Company Name : BOPCO, L.P.	
	Vertical Reference Datum (VRD) : Mean Sea Level			
	Projected Coordinate System : NAD27 / New Mexico East			
Comment :				
Site Name Poker Lake Unit PB CVX JV #008H	Units : US ft	North Reference : Grid	Convergence Angle : 0.29	
	Position	Northing : 396108.50 US ft	Latitude : 32° 5' 16.32"	
		Easting : 667201.10 US ft	Longitude : -103° 47' 36.43"	
Elevation above Mean Sea Level: 3286.00 US ft				
Comment :				
Slot Name Poker Lake Unit PB CVX JV #008H	Position (Offsets relative to Site Centre)			
	+N / -S : 0.00 US ft	Northing : 396108.50 US ft	Latitude : 32° 5' 16.32"	
	+E / -W : 0.00 US ft	Easting : 667201.10 US ft	Longitude : -103° 47' 36.43"	
Elevation above Mean Sea Level : 3286.00 US ft				
Comment :				
Well Name Poker Lake Unit PB CVX JV #008H	Type : Main well	UWI :		
	Rig Height <i>Kelly Bushing</i> : 20.00 US ft	Comment :		
	Relative to Mean Sea Level: 3306.00 US ft			
Closure Distance : 8107.88 US ft		Closure Azimuth : 179.68°		
Vertical Section (Position of Origin Relative to Slot)				
+N / -S : 0.00 US ft		+E / -W : 0.00 US ft		Az : 179.74°

Casing Points (Relative to Slot Centre, TVD relative to Kelly Bushing)									
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N. Offset (US ft)	E. Offset (US ft)	Northing (US ft)	Easting (US ft)	Name	
4137.00	0.52	178.00	4136.75	-5.85	-5.69	396102.65	667195.41	9 5/8 in	

Well path created using minimum curvature

Survey Points (Relative to Slot Centre, TVD relative to Kelly Bushing)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N. Offset (US ft)	E. Offset (US ft)	VS (US ft)	DLS (°/100 US ft)	Northing (US ft)	Easting (US ft)	Comment
1057.00	0.50	100.70	1056.96	4.44	-5.05	-4.46	0.00	396112.94	667196.05	First Wft Svy
1248.00	0.82	82.98	1247.95	4.45	-2.88	-4.46	0.20	396112.95	667198.22	
1439.00	0.85	93.41	1438.93	4.53	-0.11	-4.54	0.08	396113.03	667200.99	
1630.00	0.59	108.44	1629.91	4.14	2.24	-4.13	0.17	396112.64	667203.34	
1820.00	0.36	298.95	1819.91	4.12	2.64	-4.11	0.50	396112.62	667203.74	
2011.00	0.20	346.06	2010.91	4.73	2.04	-4.72	0.14	396113.23	667203.14	
2202.00	0.07	87.33	2201.91	5.06	2.07	-5.05	0.12	396113.56	667203.17	
2393.00	0.91	290.64	2392.90	5.60	0.77	-5.60	0.51	396114.10	667201.87	
2584.00	1.04	258.22	2583.87	5.78	-2.34	-5.79	0.29	396114.28	667198.76	
2775.00	0.56	257.49	2774.85	5.23	-4.95	-5.25	0.25	396113.73	667196.15	
2966.00	0.44	263.83	2965.85	4.95	-6.59	-4.98	0.07	396113.45	667194.51	
3156.00	0.35	270.66	3155.84	4.87	-7.90	-4.91	0.05	396113.37	667193.20	
3346.00	0.29	253.06	3345.84	4.74	-8.94	-4.78	0.06	396113.24	667192.16	
3537.00	0.78	160.59	3536.83	3.37	-8.97	-3.41	0.44	396111.87	667192.13	
3727.00	0.87	157.87	3726.81	0.82	-8.00	-0.85	0.05	396109.32	667193.10	

5D Survey Report

Survey Points (Relative to Slot centre, TVD relative to Kelly Bushing)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N. Offset (US ft)	E. Offset (US ft)	VS (US ft)	DLS (%/100 US ft)	Northing (US ft)	Easting (US ft)	Comment
3917.00	1.35	157.01	3916.78	-2.58	-6.58	2.55	0.25	396105.92	667194.52	
4095.00	0.60	177.09	4094.75	-5.44	-5.71	5.41	0.46	396103.06	667195.39	
4137.00	0.52	178.00	4136.75	-5.85	-5.69	5.82	0.20	396102.65	667195.41	9 5/8 in
4205.00	0.38	180.32	4204.74	-6.38	-5.68	6.35	0.20	396102.12	667195.42	
4396.00	0.29	175.95	4395.74	-7.50	-5.65	7.47	0.05	396101.00	667195.45	
4587.00	0.29	131.31	4586.74	-8.30	-5.26	8.27	0.12	396100.20	667195.84	
4778.00	0.30	129.22	4777.74	-8.93	-4.51	8.91	0.01	396099.57	667196.59	
4968.00	0.29	171.09	4967.73	-9.72	-4.05	9.70	0.11	396098.78	667197.05	
5159.00	0.25	205.92	5158.73	-10.57	-4.15	10.56	0.09	396097.93	667196.95	
5350.00	0.30	204.23	5349.73	-11.40	-4.54	11.38	0.03	396097.10	667196.56	
5541.00	0.51	199.14	5540.73	-12.66	-5.03	12.64	0.11	396095.84	667196.07	
5731.00	0.63	212.26	5730.72	-14.35	-5.86	14.32	0.09	396094.15	667195.24	
5922.00	0.64	191.21	5921.70	-16.28	-6.63	16.25	0.12	396092.22	667194.47	
6113.00	0.71	174.19	6112.69	-18.50	-6.72	18.47	0.11	396090.00	667194.38	
6304.00	0.60	150.05	6303.68	-20.55	-6.10	20.52	0.15	396087.95	667195.00	
6494.00	0.55	166.01	6493.67	-22.29	-5.38	22.27	0.09	396086.21	667195.72	
6684.00	0.49	185.26	6683.66	-23.99	-5.23	23.96	0.10	396084.51	667195.87	
6874.00	0.56	189.70	6873.65	-25.71	-5.46	25.69	0.04	396082.79	667195.64	
7065.00	0.60	192.08	7064.64	-27.61	-5.83	27.58	0.02	396080.89	667195.27	
7255.00	0.35	308.94	7254.64	-28.22	-6.49	28.19	0.43	396080.28	667194.61	
7444.00	0.66	350.15	7443.63	-26.78	-7.13	26.75	0.24	396081.72	667193.97	
7634.00	0.58	342.00	7633.62	-24.79	-7.61	24.76	0.06	396083.71	667193.49	
7823.00	0.29	305.60	7822.62	-23.60	-8.29	23.56	0.20	396084.90	667192.81	
8013.00	0.80	341.33	8012.61	-22.07	-9.11	22.02	0.31	396086.43	667191.99	
8203.00	0.75	281.13	8202.59	-20.57	-10.75	20.52	0.41	396087.93	667190.35	
8393.00	1.29	350.58	8392.57	-18.22	-12.32	18.16	0.65	396090.28	667188.78	
8583.00	1.03	338.78	8582.53	-14.52	-13.29	14.46	0.19	396093.98	667187.81	
8773.00	1.44	315.14	8772.49	-11.23	-15.60	11.16	0.34	396097.27	667185.50	
8963.00	1.50	311.90	8962.42	-7.88	-19.13	7.79	0.05	396100.62	667181.97	
9155.00	0.85	270.18	9154.39	-6.20	-22.42	6.10	0.54	396102.30	667178.68	
9370.00	1.43	208.71	9369.35	-8.55	-25.31	8.43	0.59	396099.95	667175.79	
9465.00	1.70	186.73	9464.31	-10.98	-26.04	10.87	0.69	396097.52	667175.06	
9497.00	5.10	173.02	9496.25	-12.87	-25.93	12.75	10.85	396095.63	667175.17	
9529.00	8.18	171.21	9528.04	-16.53	-25.40	16.42	9.65	396091.97	667175.70	
9561.00	11.52	169.60	9559.56	-21.93	-24.48	21.81	10.47	396086.57	667176.62	
9593.00	14.66	168.75	9590.72	-29.04	-23.11	28.94	9.83	396079.46	667177.99	
9625.00	17.43	168.42	9621.47	-37.71	-21.36	37.61	8.66	396070.79	667179.74	
9656.00	19.82	169.34	9650.85	-47.42	-19.46	47.34	7.77	396061.08	667181.64	
9688.00	21.97	173.35	9680.74	-58.70	-17.76	58.62	8.07	396049.80	667183.34	
9720.00	23.63	177.14	9710.24	-71.06	-16.75	70.98	6.92	396037.44	667184.35	
9752.00	25.30	180.08	9739.37	-84.30	-16.44	84.22	6.46	396024.20	667184.66	
9784.00	26.67	179.74	9768.14	-98.32	-16.41	98.24	4.31	396010.18	667184.69	
9816.00	28.83	179.54	9796.45	-113.22	-16.32	113.14	6.76	395995.28	667184.78	
9848.00	31.81	179.28	9824.07	-129.37	-16.15	129.30	9.32	395979.13	667184.95	
9879.00	34.95	178.98	9849.96	-146.42	-15.89	146.35	10.14	395962.08	667185.21	
9911.00	37.44	180.21	9875.78	-165.32	-15.76	165.24	8.11	395943.18	667185.34	
9943.00	40.58	180.75	9900.64	-185.46	-15.93	185.38	9.87	395923.04	667185.17	
9975.00	43.66	180.95	9924.37	-206.91	-16.25	206.84	9.63	395901.59	667184.85	
10006.00	46.99	179.38	9946.17	-228.95	-16.31	228.88	11.33	395879.55	667184.79	
10038.00	50.84	178.28	9967.19	-253.06	-15.81	252.99	12.31	395855.44	667185.29	
10070.00	55.05	177.87	9986.47	-278.58	-14.95	278.51	13.20	395829.92	667186.15	
10101.00	59.63	177.20	10003.20	-304.65	-13.82	304.58	14.89	395803.85	667187.28	
10133.00	63.23	177.51	10018.50	-332.71	-12.53	332.65	11.28	395775.79	667188.57	
10165.00	66.70	178.20	10032.04	-361.68	-11.44	361.63	11.02	395746.82	667189.66	
10197.00	67.62	178.58	10044.46	-391.16	-10.62	391.11	3.08	395717.34	667190.48	
10229.00	67.75	178.31	10056.61	-420.76	-9.81	420.71	0.88	395687.74	667191.29	
10260.00	68.07	178.48	10068.27	-449.47	-9.01	449.42	1.15	395659.03	667192.09	
10292.00	67.99	178.55	10080.24	-479.13	-8.24	479.09	0.32	395629.37	667192.86	
10323.00	68.07	178.39	10091.84	-507.87	-7.47	507.83	0.54	395600.63	667193.63	

5D Survey Report

Survey Points (Relative to Slot centre, TVD relative to Kelly Bushing)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N. Offset (US ft)	E. Offset (US ft)	VS (US ft)	DLS (°/100 US ft)	Northing (US ft)	Easting (US ft)	Comment
10355.00	68.22	178.45	10103.75	-537.56	-6.65	537.53	0.50	395570.94	667194.45	
10386.00	69.04	179.37	10115.05	-566.42	-6.10	566.39	3.83	395542.08	667195.00	
10418.00	71.93	179.94	10125.73	-596.58	-5.92	596.55	9.19	395511.92	667195.18	
10450.00	75.93	180.05	10134.59	-627.33	-5.92	627.29	12.50	395481.17	667195.18	
10482.00	80.01	180.72	10141.26	-658.62	-6.13	658.58	12.91	395449.88	667194.97	
10513.00	83.83	180.72	10145.61	-689.30	-6.52	689.26	12.32	395419.20	667194.58	
10545.00	87.34	180.74	10148.08	-721.20	-6.92	721.16	10.97	395387.30	667194.18	
10577.00	89.72	181.50	10148.90	-753.18	-7.55	753.14	7.81	395355.32	667193.55	
10609.00	91.54	181.07	10148.55	-785.17	-8.27	785.12	5.84	395323.33	667192.83	
10753.00	90.62	179.34	10145.83	-929.13	-8.78	929.08	1.36	395179.37	667192.32	
10943.00	90.31	179.68	10144.29	-1119.12	-7.16	1119.08	0.24	394989.38	667193.94	
11133.00	89.69	180.08	10144.29	-1309.12	-6.76	1309.07	0.39	394799.38	667194.34	
11324.00	90.56	180.31	10143.87	-1500.11	-7.41	1500.06	0.47	394608.39	667193.69	
11514.00	90.00	179.04	10142.94	-1690.10	-6.33	1690.06	0.73	394418.40	667194.77	
11705.00	89.65	180.98	10143.53	-1881.09	-6.37	1881.05	1.03	394227.41	667194.73	
11896.00	90.49	179.21	10143.30	-2072.08	-6.68	2072.03	1.03	394036.42	667194.42	
12087.00	91.67	175.87	10139.69	-2262.84	1.51	2262.83	1.85	393845.66	667202.61	
12278.00	90.68	176.50	10135.78	-2453.38	14.22	2453.42	0.61	393655.12	667215.32	
12469.00	89.32	178.81	10135.78	-2644.20	22.03	2644.27	1.40	393464.30	667223.13	
12564.00	89.38	180.58	10136.86	-2739.19	22.54	2739.26	1.86	393369.31	667223.64	
12756.00	90.18	184.25	10137.59	-2930.98	14.45	2931.02	1.96	393177.52	667215.55	
12948.00	88.33	182.33	10140.09	-3122.63	3.43	3122.62	1.39	392985.87	667204.53	
13140.00	87.84	180.36	10146.51	-3314.46	-1.07	3314.42	1.06	392794.04	667200.03	
13333.00	87.66	179.64	10154.08	-3507.31	-1.07	3507.27	0.38	392601.19	667200.03	
13524.00	87.65	180.03	10161.90	-3698.15	-0.52	3698.11	0.20	392410.35	667200.58	
13714.00	89.14	183.67	10167.22	-3887.94	-6.66	3887.87	2.07	392220.56	667194.44	
13907.00	90.25	179.40	10168.25	-4080.82	-11.82	4080.72	2.29	392027.68	667189.28	
14098.00	90.49	176.98	10167.02	-4271.71	-5.79	4271.64	1.27	391836.79	667195.31	
14290.00	89.63	177.66	10166.81	-4463.49	3.18	4463.46	0.57	391645.01	667204.28	
14482.00	90.09	178.16	10167.28	-4655.36	10.19	4655.36	0.35	391453.14	667211.29	
14674.00	89.94	180.68	10167.23	-4847.34	12.13	4847.34	1.31	391261.16	667213.23	
14865.00	89.44	179.83	10168.27	-5038.33	11.28	5038.33	0.52	391070.17	667212.38	
15057.00	89.94	180.23	10169.31	-5230.33	11.18	5230.32	0.33	390878.17	667212.28	
15248.00	90.31	179.29	10168.89	-5421.32	11.98	5421.32	0.53	390687.18	667213.08	
15440.00	89.51	180.70	10169.19	-5613.32	12.00	5613.31	0.84	390495.18	667213.10	
15631.00	90.19	180.83	10169.69	-5804.30	9.45	5804.28	0.36	390304.20	667210.55	
15821.00	90.06	179.45	10169.28	-5994.29	8.98	5994.27	0.73	390114.21	667210.08	
16013.00	90.00	181.35	10169.18	-6186.28	7.64	6186.25	0.99	389922.22	667208.74	
16204.00	89.44	177.69	10170.11	-6377.24	9.24	6377.21	1.94	389731.26	667210.34	
16396.00	89.44	178.50	10171.99	-6569.12	15.62	6569.12	0.42	389539.38	667216.72	
16588.00	89.38	179.03	10173.96	-6761.06	19.76	6761.08	0.28	389347.44	667220.86	
16781.00	90.00	178.57	10175.01	-6954.02	23.80	6954.05	0.40	389154.48	667224.90	
16969.00	90.37	179.40	10174.40	-7141.98	27.13	7142.03	0.48	388966.52	667228.23	
17158.00	90.37	179.43	10173.18	-7330.97	29.06	7331.03	0.02	388777.53	667230.16	
17349.00	89.81	178.06	10172.88	-7521.92	33.25	7521.99	0.77	388586.58	667234.35	
17539.00	89.75	179.88	10173.61	-7711.88	36.66	7711.97	0.96	388396.62	667237.76	
17729.00	90.37	178.83	10173.41	-7901.86	38.80	7901.96	0.64	388206.64	667239.90	
17912.00	90.06	177.69	10172.72	-8084.78	44.36	8084.89	0.65	388023.72	667245.46	Last Wft Svy
17935.00	90.01	177.52	10172.71	-8107.76	45.32	8107.88	0.77	388000.74	667246.42	Proj. To Bit 008H