

Results of Directional Survey

API number:	30-025-40860		
OGRID:		Operator:	CHEVRON U S A INC
		Property:	MCCLOY RANCH 2 24 32 STATE COM # 2H

surface	ULSTR:	M	02	T 24S	R 32E
				100 FSL	400 FWL

BH Loc	ULSTR:	D	02	T 24S	R 32E
14578	MD	9688.1	TVD	235 FNL	331 FWL
				5045 FSL	

Top Perf/OH	ULSTR:	M	02	T 24S	R 32E
9939	MD	9760.9	TVD	412 FSL	394 FWL

Bot Perf/OH	ULSTR:	D	02	T 24S	R 32E
14541	MD	9687.8	TVD	272 FNL	335 FWL
				5008 FSL	

	MD	N/S	E/W	VD
	9899	272.61	-2.59	9752.68
TOP PERFS/OH	9939	311.56	-6.02	9760.93
	9944	316.43	-6.45	9761.96
	14527	4894.53	-63.80	9687.68
BOT PERFS/OH	14541	4908.45	-65.24	9687.80
	14578	4945.25	-69.05	9688.12

NEXT TO LAST	14527	4894.53	-63.80	9687.68
LAST READING	14578	4945.25	-69.05	9688.12
TD	14578	4945.25	-69.05	9688.12

Surface Location	100	FS	400	FW
Projected BHL	5045	FS	331	FW
Location of				
Top Perfs/OH	412	FS	394	FW
Bottom Perfs/OH	5008	FS	335	FW

SUMMARY of Subsurface Locations

Surface Location	M-02-24S-32E	100	FS	400	FW	Vert. Depth
Top Perfs/OH	M-02-24S-32E	412	FS	394	FW	9760.93
Bottom Perfs/OH	D-02-24S-32E	5008	FS	335	FW	9687.80
Projected TD	D-02-24S-32E	5045	FS	331	FW	9688.12

MAR 19 2014



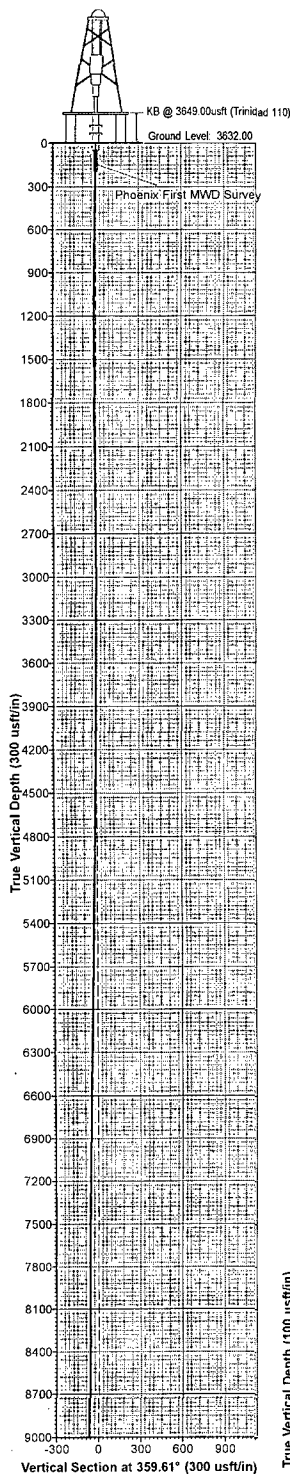
Project: Lea County, NM (NAD27)
Site: McCloy Ranch 2-24-32 State Com
Well: #2H
Wellbore: Wellbore #1 / Job #1310061
Design: Plan #5 02-06-13



PHOENIX
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Azimuths to Grid North
True North: -0.36°
Magnetic North: 7.06°
Magnetic Field
Strength: 48451.5nT
Dip Angle: 60.15°
Date: 02/03/2013
Model: IGRF2010_14



WELL DETAILS													
+N/-S		+E/-W		Northing		Ground Level: 3632.00		Easting		Latitude		Longitude	
0.00		0.00		451536.00				710605.00		32° 14' 22.3930 N		103° 39' 7.8509 W	

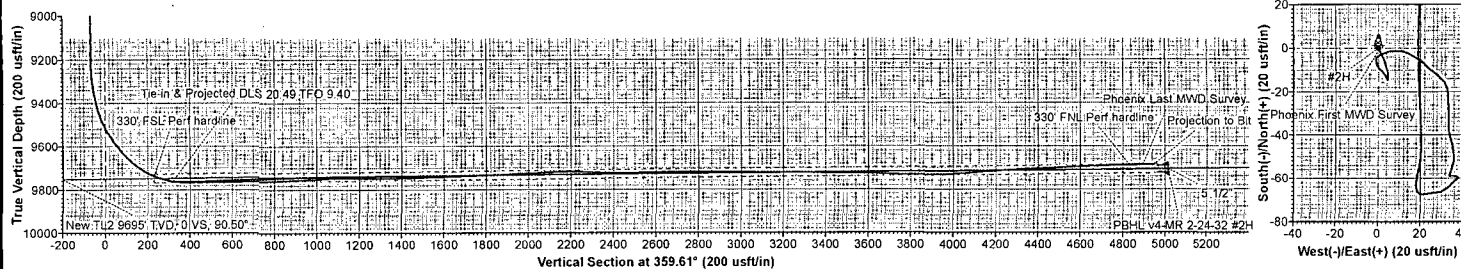
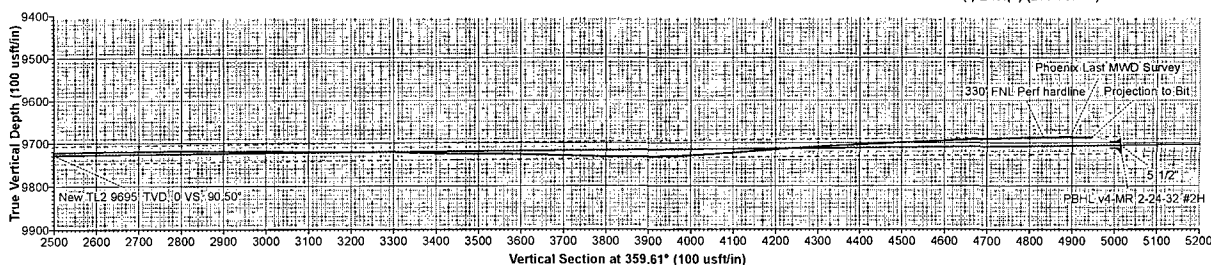
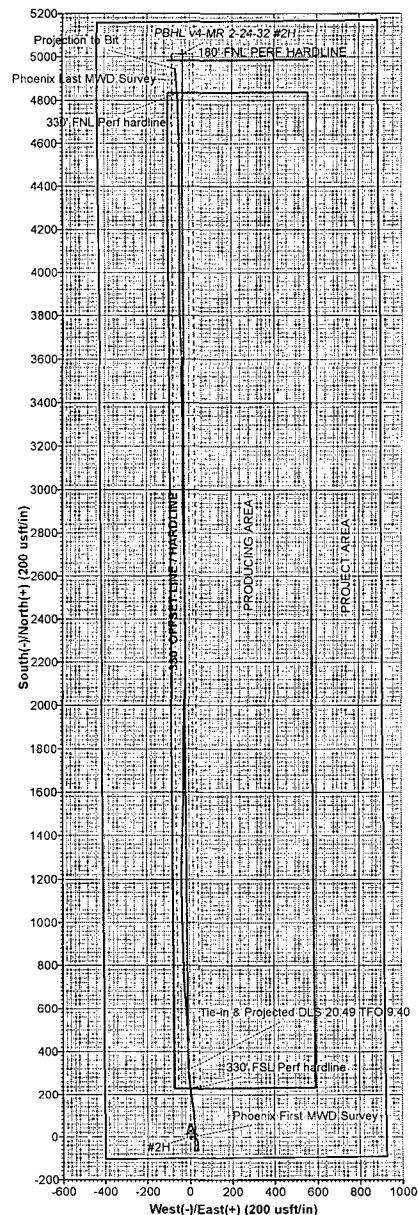
SECTION DETAILS											
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target	Annotation
1	9944.00	81.90	356.50	9781.96	316.43	-6.45	0.00	0.00	316.47		Tie-in & Projected DLS 20.49 TFO 9.40
2	9989.00	81.00	358.00	9764.74	361.25	-8.60	20.49	9.40	361.30		KOP Start DLS 3.00 TFO 59.51
3	10054.73	92.00	359.70	9763.02	426.94	-9.92	3.00	59.51	426.99		Start 615.00 hold at 10054.73 MD
4	10669.73	92.00	359.70	9741.56	1041.55	-13.13	0.00	0.00	1041.62		LP Start DLS 3.00 TFO -179.96
5	10719.73	90.50	359.70	9740.46	1091.54	-13.40	3.00	-179.96	1091.61		Start 3921.66 hold at 10719.73 MD
6	14641.39	90.50	359.70	9705.25	5013.00	-34.00	0.00	0.00	5013.12	PBHL v4-MR 2-24-32 #2H	TD at 14641.39

DESIGN TARGET DETAILS											
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape			
PBHL v4-MR 2-24-32 #2H 9706.25	5013.00	-34.00	456549.00	710571.00	32° 15' 12.0020 N	103° 39' 7.8766 W	Rectangle (Sides: L40.00 W100.00)				- plan hits target center

SITE DETAILS: McCloy Ranch 2-24-32 State Com						Map System: US State Plane 1927 (Exact solution)					
Site Centre Northing: 451536.00						Datum: NAD 1927 (NADCON CONUS)					
Easting: 710605.00						Ellipsoid: Clarke 1866					
Positional Uncertainty: 0.00						Zone Name: New Mexico East 3001					
Convergence: 0.36						Local Origin: Well #2H, Grid North					
Local North: Grid						Latitude: 32° 14' 22.3930 N					
						Longitude: 103° 39' 7.8509 W					
						Grid East: 710605.00					
						Grid North: 451536.00					
						Scale Factor: 1.000					
						Geomagnetic Model: IGRF2010_14					
						Sample Date: 03-Feb-13					
						Magnetic Declination: 7.42°					
						Dip Angle from Horizontal: 60.15°					
						Magnetic Field Strength: 48452					
						To convert a Magnetic Direction to a Grid Direction, Add 7.06°					
						To convert a Magnetic Direction to a True Direction, Add 7.42° East					
						To convert a True Direction to a Grid Direction, Subtract 0.36°					

CASING DETAILS						FORMATION TOP DETAILS					
TVD	MD	Name	Size			TVDPath	MDPath	Formation	DipAngle	DipDir	
1300.00		13 3/8"	13-3/8			9740.42	10725.70	New TL2 9695 TVD: 0 VS: 90.50°	-0.50	359.61	
4775.00		8 5/8"	8-5/8								
9706.25	14641.39	5 1/2"	5-1/2								

LEGEND	
—●—	#2H, Wellbore #1 / Job #1310061, Surveys (Trinidad 110) V0
—●—	Plan #5 02-06-13





Chesapeake Operating Inc.

Lea County, NM (NAD27)

McCloy Ranch 2-24-32 State Com #2H

Wellbore #1 / Job #1310061

Survey: Phoenix MWD Surveys

Phoenix Final Survey Report

11 February, 2013

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JUN 24 2013

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Phoenix Technology Services
Phoenix Final Survey Report



Company:	Chesapeake Operating Inc.	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM (NAD27)	TVD Reference:	KB @ 3649.00usft (Trinidad 110)
Site:	McCloy Ranch 2-24-32 State Com	MD Reference:	KB @ 3649.00usft (Trinidad 110)
Well:	#2H	North Reference:	Grid
Wellbore:	Wellbore #1 / Job #1310061	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Trinidad 110)	Database:	GCR DB

Project	Lea County, NM (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	McCloy Ranch 2-24-32 State Com		
Site Position:		Northing:	451,536.00 usft
From:	Map	Easting:	710,605.00 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 14' 22.3930 N
		Longitude:	103° 39' 7.8509 W
		Grid Convergence:	0.36 °

Well	#2H, x					
Well Position	+N/-S	0.00 usft	Northing:	451,536.00 usft	Latitude:	32° 14' 22.3930 N
	+E/-W	0.00 usft	Easting:	710,605.00 usft	Longitude:	103° 39' 7.8509 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,632.00 usft

Wellbore	Wellbore #1 / Job #1310061				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	02/03/13	7.42	60.15	48,452

Design:	Surveys (Trinidad 110)			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	359.61

Survey Program	Date 02/11/13			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
143.00	14,578.00	Phoenix MWD Surveys (Wellbore #1 / Job	MWD	MWD - Standard



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Site:	McCloy Ranch 2-24-32 State Com	MD Reference:	KB @ 3649.00usft (Trinidad 110)
Well:	#2H	North Reference:	Grid
Wellbore:	Wellbore #1 / Job #1310061	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Trinidad 110)	Database:	GCR DB

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
0.00	0.00	0.00	3,649.00	0.00	0.00	0.00	0.00	0.00	451,536.00	710,605.00
143.00	0.70	151.70	3,506.00	143.00	-0.77	0.41	-0.77	0.49	451,535.23	710,605.41
Phoenix First MWD Survey										
326.00	0.90	153.80	3,323.02	325.98	-3.04	1.58	-3.05	0.11	451,532.96	710,606.58
479.00	0.90	159.70	3,170.04	478.96	-5.25	2.53	-5.27	0.06	451,530.75	710,607.53
669.00	0.70	162.40	2,980.06	668.94	-7.75	3.39	-7.78	0.11	451,528.25	710,608.39
859.00	0.70	162.00	2,790.07	858.93	-9.96	4.10	-9.99	0.00	451,526.04	710,609.10
1,049.00	0.90	181.70	2,600.09	1,048.91	-12.56	4.42	-12.59	0.18	451,523.44	710,609.42
1,204.00	0.50	162.60	2,445.10	1,203.90	-14.42	4.58	-14.45	0.30	451,521.58	710,609.58
1,365.00	0.40	326.60	2,284.10	1,364.90	-14.62	4.49	-14.65	0.55	451,521.38	710,609.49
1,555.00	0.50	332.60	2,094.11	1,554.89	-13.33	3.74	-13.36	0.06	451,522.67	710,608.74
1,746.00	0.60	318.20	1,903.12	1,745.88	-11.85	2.69	-11.87	0.09	451,524.15	710,607.69
1,936.00	0.70	316.30	1,713.13	1,935.87	-10.27	1.22	-10.27	0.05	451,525.73	710,606.22
2,126.00	0.50	320.50	1,523.14	2,125.86	-8.79	-0.11	-8.79	0.11	451,527.21	710,604.89
2,316.00	0.50	342.50	1,333.15	2,315.85	-7.36	-0.88	-7.35	0.10	451,528.64	710,604.12
2,506.00	0.50	355.20	1,143.16	2,505.84	-5.74	-1.20	-5.73	0.06	451,530.26	710,603.80
2,696.00	0.50	37.20	953.16	2,695.84	-4.25	-0.77	-4.25	0.19	451,531.75	710,604.23
2,887.00	0.60	71.80	762.17	2,886.83	-3.28	0.69	-3.28	0.18	451,532.72	710,605.69
3,077.00	0.70	65.40	572.18	3,076.82	-2.48	2.69	-2.50	0.06	451,533.52	710,607.69
3,267.00	0.90	73.90	382.20	3,266.80	-1.59	5.17	-1.62	0.12	451,534.41	710,610.17
3,457.00	1.00	91.60	192.23	3,456.77	-1.22	8.27	-1.28	0.16	451,534.78	710,613.27
3,647.00	0.70	100.50	2.25	3,646.75	-1.48	11.06	-1.55	0.17	451,534.52	710,616.06
3,838.00	0.70	114.60	-188.74	3,837.74	-2.18	13.27	-2.27	0.09	451,533.82	710,618.27
4,027.00	0.70	113.90	-377.72	4,026.72	-3.12	15.38	-3.23	0.00	451,532.88	710,620.38
4,217.00	1.20	122.10	-567.70	4,216.70	-4.65	18.12	-4.78	0.27	451,531.35	710,623.12
4,408.00	1.20	131.50	-758.65	4,407.65	-7.04	21.32	-7.18	0.10	451,528.96	710,626.32
4,598.00	1.90	129.80	-948.58	4,597.58	-10.37	25.23	-10.55	0.37	451,525.63	710,630.23



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Site:	McCloy Ranch 2-24-32 State Com	MD Reference:	KB @ 3649.00usft (Trinidad 110)
Well:	#2H	North Reference:	Grid
Wellbore:	Wellbore #1 / Job #1310061	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Trinidad 110)	Database:	GCR DB

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
4,723.00	1.80	125.70	-1,073.52	4,722.52	-12.85	28.41	-13.04	0.13	451,523.15	710,633.41	
4,866.00	1.20	139.80	-1,216.47	4,865.47	-15.30	31.20	-15.51	0.49	451,520.70	710,636.20	
5,057.00	1.10	172.40	-1,407.43	5,056.43	-18.65	32.74	-18.87	0.34	451,517.35	710,637.74	
5,247.00	1.10	177.20	-1,597.40	5,246.40	-22.27	33.07	-22.50	0.05	451,513.73	710,638.07	
5,437.00	1.00	178.10	-1,787.37	5,436.37	-25.75	33.21	-25.98	0.05	451,510.25	710,638.21	
5,627.00	1.00	174.80	-1,977.34	5,626.34	-29.06	33.42	-29.29	0.03	451,506.94	710,638.42	
5,817.00	0.90	182.50	-2,167.31	5,816.31	-32.20	33.50	-32.43	0.09	451,503.80	710,638.50	
6,008.00	0.80	180.10	-2,358.29	6,007.29	-35.04	33.43	-35.26	0.06	451,500.96	710,638.43	
6,198.00	0.80	181.30	-2,548.27	6,197.27	-37.69	33.40	-37.91	0.01	451,498.31	710,638.40	
6,383.00	1.10	162.50	-2,733.25	6,382.25	-40.67	33.91	-40.90	0.23	451,495.33	710,638.91	
6,563.00	0.80	165.10	-2,913.22	6,562.22	-43.54	34.75	-43.77	0.17	451,492.46	710,639.75	
6,744.00	1.00	171.00	-3,094.20	6,743.20	-46.32	35.32	-46.56	0.12	451,489.68	710,640.32	
6,925.00	1.00	173.40	-3,275.17	6,924.17	-49.45	35.75	-49.69	0.02	451,486.55	710,640.75	
7,106.00	0.80	189.70	-3,456.15	7,105.15	-52.26	35.72	-52.50	0.18	451,483.74	710,640.72	
7,286.00	1.00	202.80	-3,636.13	7,285.13	-54.95	34.90	-55.18	0.16	451,481.05	710,639.90	
7,467.00	0.80	187.40	-3,817.11	7,466.11	-57.66	34.12	-57.89	0.17	451,478.34	710,639.12	
7,647.00	0.30	231.80	-3,997.10	7,646.10	-59.19	33.59	-59.42	0.35	451,476.81	710,638.59	
7,828.00	0.80	73.90	-4,178.09	7,827.09	-59.14	34.43	-59.37	0.60	451,476.86	710,639.43	
8,008.00	0.60	111.60	-4,358.08	8,007.08	-59.13	36.51	-59.38	0.27	451,476.87	710,641.51	
8,189.00	0.30	102.80	-4,539.07	8,188.07	-59.59	37.86	-59.84	0.17	451,476.41	710,642.86	
8,369.00	0.60	239.60	-4,719.07	8,368.07	-60.17	37.50	-60.42	0.47	451,475.83	710,642.50	
8,549.00	1.00	224.20	-4,899.05	8,548.05	-61.77	35.60	-62.01	0.25	451,474.23	710,640.60	
8,730.00	1.30	225.90	-5,080.02	8,729.02	-64.33	33.02	-64.56	0.17	451,471.67	710,638.02	
8,911.00	1.50	252.30	-5,260.96	8,909.96	-66.48	29.29	-66.68	0.37	451,469.52	710,634.29	
9,104.00	2.40	268.80	-5,453.85	9,102.85	-67.34	22.84	-67.49	0.55	451,468.66	710,627.84	
9,177.00	2.20	259.10	-5,526.79	9,175.79	-67.63	19.94	-67.77	0.60	451,468.37	710,624.94	
9,222.00	3.50	334.60	-5,571.75	9,220.75	-66.55	18.50	-66.68	8.08	451,469.45	710,623.50	



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Wellbore:	Wellbore #1 / Job #1310061	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Trinidad 110)	Database:	GCR DB

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
9,267.00	4.30	357.30	-5,616.65	9,265.65	-63.63	17.83	-63.75	3.83	451,472.37	710,622.83
9,313.00	7.60	15.00	-5,662.40	9,311.40	-58.97	18.54	-59.09	8.13	451,477.03	710,623.54
9,358.00	9.30	8.30	-5,706.91	9,355.91	-52.49	19.83	-52.63	4.36	451,483.51	710,624.83
9,403.00	14.20	0.70	-5,750.95	9,399.95	-43.37	20.43	-43.51	11.40	451,492.63	710,625.43
9,448.00	18.50	356.50	-5,794.13	9,443.13	-30.72	20.06	-30.85	9.90	451,505.28	710,625.06
9,493.00	23.30	357.20	-5,836.15	9,485.15	-14.69	19.19	-14.82	10.68	451,521.31	710,624.19
9,538.00	28.70	0.70	-5,876.59	9,525.59	5.02	18.88	4.89	12.47	451,541.02	710,623.88
9,583.00	35.00	4.10	-5,914.79	9,563.79	28.72	19.94	28.58	14.55	451,564.72	710,624.94
9,629.00	38.40	358.70	-5,951.68	9,600.68	56.17	20.56	56.03	10.18	451,592.17	710,625.56
9,674.00	43.40	354.80	-5,985.69	9,634.69	85.57	18.84	85.44	12.47	451,621.57	710,623.84
9,719.00	48.30	353.10	-6,017.02	9,666.02	117.66	15.42	117.55	11.22	451,653.66	710,620.42
9,764.00	54.50	354.00	-6,045.09	9,694.09	152.59	11.48	152.51	13.87	451,688.59	710,616.48
9,809.00	60.40	353.70	-6,069.29	9,718.29	190.29	7.42	190.23	13.12	451,726.29	710,612.42
9,853.57	67.53	352.61	-6,088.84	9,737.84	230.02	2.64	230.00	16.15	451,766.02	710,607.64
330' FSL Perf hardline										
9,854.00	67.60	352.60	-6,089.00	9,738.00	230.41	2.58	230.39	16.15	451,766.41	710,607.58
9,899.00	74.30	353.40	-6,103.68	9,752.68	272.61	-2.59	272.62	14.98	451,808.61	710,602.41
9,944.00	81.90	356.50	-6,112.96	9,761.96	316.43	-6.45	316.47	18.18	451,852.43	710,598.55
9,989.00	89.00	358.90	-6,116.52	9,765.52	361.22	-8.24	361.27	16.65	451,897.22	710,596.76
10,080.00	89.20	359.10	-6,117.95	9,766.95	452.20	-9.83	452.26	0.31	451,988.20	710,595.17
10,170.00	91.30	356.80	-6,117.56	9,766.56	542.13	-13.05	542.21	3.46	452,078.13	710,591.95
10,260.00	91.30	355.90	-6,115.52	9,764.52	631.92	-18.78	632.04	1.00	452,167.92	710,586.22
10,350.00	90.90	354.90	-6,113.79	9,762.79	721.62	-25.99	721.78	1.20	452,257.62	710,579.01
10,440.00	92.30	0.00	-6,111.28	9,760.28	811.46	-29.99	811.65	5.88	452,347.46	710,575.01
10,531.00	92.30	359.20	-6,107.62	9,756.62	902.38	-30.62	902.57	0.88	452,438.38	710,574.38
10,621.00	93.10	358.80	-6,103.38	9,752.38	992.27	-32.19	992.47	0.99	452,528.27	710,572.81
10,712.00	92.30	357.80	-6,099.10	9,748.10	1,083.13	-34.89	1,083.34	1.41	452,619.13	710,570.11



Phoenix Technology Services

Phoenix Final Survey Report



Company:	Chesapeake Operating Inc.	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM (NAD27)	TVD Reference:	KB @ 3649.00usft (Trinidad 110)
Site:	McCloy Ranch 2-24-32 State Com	MD Reference:	KB @ 3649.00usft (Trinidad 110)
Well:	#2H	North Reference:	Grid
Wellbore:	Wellbore #1 / Job #1310061	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Trinidad 110)	Database:	GCR DB

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg. (°/100usft)	Northing (usft)	Easting (usft)	
10,801.00	88.00	0.00	-6,098.86	9,747.86	1,172.08	-36.59	1,172.30	5.43	452,708.08	710,568.41	
10,892.00	89.40	1.40	-6,100.93	9,749.93	1,263.05	-35.48	1,263.26	2.17	452,799.05	710,569.52	
10,982.00	92.00	1.80	-6,099.83	9,748.83	1,353.00	-32.96	1,353.19	2.92	452,889.00	710,572.04	
11,072.00	90.40	1.80	-6,097.94	9,746.94	1,442.93	-30.14	1,443.10	1.78	452,978.93	710,574.86	
11,162.00	93.00	1.00	-6,095.27	9,744.27	1,532.86	-27.94	1,533.01	3.02	453,068.86	710,577.06	
11,252.00	92.10	0.50	-6,091.27	9,740.27	1,622.76	-26.76	1,622.90	1.14	453,158.76	710,578.24	
11,343.00	92.40	0.30	-6,087.70	9,736.70	1,713.69	-26.13	1,713.82	0.40	453,249.69	710,578.87	
11,433.00	92.40	0.50	-6,083.93	9,732.93	1,803.60	-25.50	1,803.74	0.22	453,339.60	710,579.50	
11,523.00	91.60	0.70	-6,080.79	9,729.79	1,893.54	-24.56	1,893.67	0.92	453,429.54	710,580.44	
11,613.00	92.90	1.20	-6,077.26	9,726.26	1,983.46	-23.07	1,983.57	1.55	453,519.46	710,581.93	
11,703.00	93.80	1.60	-6,072.00	9,721.00	2,073.28	-20.87	2,073.37	1.09	453,609.28	710,584.13	
11,794.00	90.70	0.80	-6,068.42	9,717.42	2,164.18	-18.97	2,164.26	3.52	453,700.18	710,586.03	
11,884.00	87.70	359.90	-6,069.68	9,718.68	2,254.16	-18.42	2,254.23	3.48	453,790.16	710,586.58	
11,974.00	86.90	358.90	-6,073.92	9,722.92	2,344.05	-19.36	2,344.13	1.42	453,880.05	710,585.64	
12,064.00	90.80	359.80	-6,075.73	9,724.73	2,434.01	-20.38	2,434.09	4.45	453,970.01	710,584.62	
12,154.00	91.60	359.50	-6,073.84	9,722.84	2,523.98	-20.93	2,524.07	0.95	454,059.98	710,584.07	
12,245.00	90.80	359.20	-6,071.94	9,720.94	2,614.96	-21.96	2,615.05	0.94	454,150.96	710,583.04	
12,335.00	90.50	358.50	-6,070.91	9,719.91	2,704.93	-23.77	2,705.03	0.85	454,240.93	710,581.23	
12,425.00	90.40	358.40	-6,070.21	9,719.21	2,794.90	-26.20	2,795.01	0.16	454,330.90	710,578.80	
12,515.00	89.00	356.90	-6,070.68	9,719.68	2,884.82	-29.89	2,884.95	2.28	454,420.82	710,575.11	
12,606.00	90.30	1.50	-6,071.23	9,720.23	2,975.78	-31.16	2,975.92	5.25	454,511.78	710,573.84	
12,696.00	88.40	0.00	-6,072.26	9,721.26	3,065.76	-29.98	3,065.89	2.69	454,601.76	710,575.02	
12,786.00	91.00	0.70	-6,072.73	9,721.73	3,155.75	-29.43	3,155.87	2.99	454,691.75	710,575.57	
12,876.00	89.70	359.80	-6,072.18	9,721.18	3,245.74	-29.03	3,245.86	1.76	454,781.74	710,575.97	
12,966.00	88.00	358.50	-6,073.98	9,722.98	3,335.71	-30.37	3,335.84	2.38	454,871.71	710,574.63	
13,057.00	88.70	359.20	-6,076.60	9,725.60	3,426.65	-32.19	3,426.79	1.09	454,962.65	710,572.81	
13,147.00	90.60	359.10	-6,077.15	9,726.15	3,516.64	-33.53	3,516.78	2.11	455,052.64	710,571.47	



Phoenix Technology Services

Phoenix Final Survey Report



Company:	Chesapeake Operating Inc.	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM (NAD27)	TVD Reference:	KB @ 3649.00usft (Trinidad 110)
Site:	McCloy Ranch 2-24-32 State Com	MD Reference:	KB @ 3649.00usft (Trinidad 110)
Well:	#2H	North Reference:	Grid
Wellbore:	Wellbore #1 / Job #1310061	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Trinidad 110)	Database:	GCR DB

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
13,237.00	88.40	358.10	-6,077.94	9,726.94	3,606.60	-35.73	3,606.76	2.69	455,142.60	710,569.27
13,327.00	88.10	357.50	-6,080.69	9,729.69	3,696.49	-39.18	3,696.67	0.75	455,232.49	710,565.82
13,418.00	88.90	357.90	-6,083.07	9,732.07	3,787.38	-42.83	3,787.59	0.98	455,323.38	710,562.17
13,508.00	90.00	359.20	-6,083.93	9,732.93	3,877.35	-45.11	3,877.57	1.89	455,413.35	710,559.89
13,598.00	92.10	0.60	-6,082.28	9,731.28	3,967.33	-45.27	3,967.54	2.80	455,503.33	710,559.73
13,689.00	94.30	0.90	-6,077.20	9,726.20	4,058.17	-44.08	4,058.38	2.44	455,594.17	710,560.92
13,779.00	94.20	0.00	-6,070.53	9,719.53	4,147.92	-43.37	4,148.12	1.00	455,683.92	710,561.63
13,869.00	94.70	0.00	-6,063.55	9,712.55	4,237.65	-43.36	4,237.84	0.56	455,773.65	710,561.64
13,959.00	91.80	359.80	-6,058.45	9,707.45	4,327.49	-43.51	4,327.69	3.23	455,863.49	710,561.49
14,049.00	92.40	359.20	-6,055.15	9,704.15	4,417.43	-44.30	4,417.63	0.94	455,953.43	710,560.70
14,140.00	93.30	359.30	-6,050.63	9,699.63	4,508.31	-45.49	4,508.51	1.00	456,044.31	710,559.51
14,230.00	92.00	358.30	-6,046.47	9,695.47	4,598.19	-47.37	4,598.40	1.82	456,134.19	710,557.63
14,320.00	92.40	358.00	-6,043.01	9,692.01	4,688.07	-50.27	4,688.31	0.56	456,224.07	710,554.73
14,410.00	91.70	356.70	-6,039.79	9,688.79	4,777.92	-54.43	4,778.18	1.64	456,313.92	710,550.57
14,464.51	90.62	355.56	-6,038.69	9,687.69	4,832.29	-58.11	4,832.57	2.88	456,368.29	710,546.89
330' FNL Perf hardline										
14,501.00	89.90	354.80	-6,038.52	9,687.52	4,868.65	-61.18	4,868.95	2.88	456,404.65	710,543.82
14,527.00	89.50	354.10	-6,038.66	9,687.66	4,894.53	-63.69	4,894.85	3.10	456,430.53	710,541.31
Phoenix Last MWD Survey										
14,578.00	89.50	354.10	-6,039.10	9,688.10	4,945.26	-68.93	4,945.61	0.00	456,481.26	710,536.07
Projection to Bit										



Phoenix Technology Services
Phoenix Final Survey Report



Company:	Chesapeake Operating Inc.	Local Co-ordinate Reference:	Well #2H
Project:	Lea County - NM (NAD27)	TVD Reference:	KB @ 3649.00usft (Trinidad 110)
Site:	McCloy Ranch 2-24-32 State Com	MD Reference:	KB @ 3649.00usft (Trinidad 110)
Well:	#2H	North Reference:	Grid
Wellbore:	Wellbore #1 / Job #1310061	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Trinidad 110)	Database:	GCR_DB

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
143.00	143.00	-0.77	0.41	Phoenix First MWD Survey
9,853.57	9,737.84	230.02	2.64	330' FSL Perf hardline
14,464.51	9,687.69	4,832.29	-58.11	330' FNL Perf hardline
14,527.00	9,687.66	4,894.53	-63.69	Phoenix Last MWD Survey
14,578.00	9,688.10	4,945.26	-68.93	Projection to Bit

Checked By: _____	Approved By: _____	Date: _____
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Directional Survey

Well Name *CHK*MCCLOY RANCH 2-24-32 ST COM 002H		Lease MCCLOY RANCH 2-24-32 STATE COM	Field Name TRISTE DRAW	Business Unit Mid-Continent	
Ground Elevation (ft)	Original RKB (ft)	Current RKB Elevation		Mud Line Elevation (ft)	Water Depth (ft)

Wellbore Name Original Hole		Parent Wellbore Original Hole		Kick Off Depth (ftKB) 9,223		Vertical Section Direction (°) 359.61					
UTM Northing (Y) (ft)			UTM Easting (X) (ft)			UTM Grid Zone					
Date 1/24/2013		Definitive? N		Description Actual Survey		Planned? N					
MD Tie In (ftKB)		TVD Tie In (ftKB)		Inclination Tie In (°)		Azimuth Tie In (°)		NST Tie In (ft)		EWT Tie In (ft)	

Survey Data

MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Method	Survey Company	Build (°/100ft)	Depart (ft)	Turn (°/100ft)	Unuse d data
143	0.70	151.70	143.00	-0.77	0.41	-0.77	0.49	MWD	Phoenix	0.49	0.87	106.08	N
326	0.90	153.80	325.98	-3.04	1.58	-3.05	0.11	MWD	Phoenix	0.11	3.43	1.15	N
479	0.90	159.70	478.96	-5.25	2.53	-5.27	0.06	MWD	Phoenix	0.00	5.82	3.86	N
669	0.70	162.40	668.94	-7.75	3.39	-7.78	0.11	MWD	Phoenix	-0.11	8.46	1.42	N
859	0.70	162.00	858.93	-9.96	4.10	-9.99	0.00	MWD	Phoenix	0.00	10.78	-0.21	N
1,049	0.90	181.70	1,048.91	-12.56	4.42	-12.59	0.18	MWD	Phoenix	0.11	13.31	10.37	N
1,204	0.50	162.60	1,203.90	-14.42	4.58	-14.45	0.30	MWD	Phoenix	-0.26	15.13	-12.32	N
1,365	0.40	326.60	1,364.90	-14.62	4.49	-14.65	0.55	MWD	Phoenix	-0.06	15.30	101.86	N
1,555	0.50	332.60	1,554.89	-13.33	3.74	-13.36	0.06	MWD	Phoenix	0.05	13.85	3.16	N
1,746	0.60	318.20	1,745.88	-11.85	2.69	-11.87	0.09	MWD	Phoenix	0.05	12.15	-7.54	N
1,936	0.70	316.30	1,935.87	-10.27	1.22	-10.27	0.05	MWD	Phoenix	0.05	10.34	-1.00	N
2,126	0.50	320.50	2,125.86	-8.79	-0.11	-8.79	0.11	MWD	Phoenix	-0.11	8.79	2.21	N
2,316	0.50	342.50	2,315.85	-7.36	-0.88	-7.35	0.10	MWD	Phoenix	0.00	7.41	11.58	N
2,506	0.50	355.20	2,505.84	-5.74	-1.20	-5.73	0.06	MWD	Phoenix	0.00	5.87	6.68	N
2,696	0.50	37.20	2,695.84	-4.25	-0.77	-4.25	0.19	MWD	Phoenix	0.00	4.32	-	N
2,887	0.60	71.80	2,886.83	-3.28	0.69	-3.28	0.18	MWD	Phoenix	0.05	3.35	18.12	N
3,077	0.70	65.40	3,076.82	-2.48	2.69	-2.50	0.06	MWD	Phoenix	0.05	3.66	-3.37	N
3,267	0.90	73.90	3,266.80	-1.59	5.17	-1.62	0.12	MWD	Phoenix	0.11	5.41	4.47	N
3,457	1.00	91.60	3,456.77	-1.22	8.27	-1.28	0.16	MWD	Phoenix	0.05	8.35	9.32	N
3,647	0.70	100.50	3,646.75	-1.48	11.06	-1.55	0.17	MWD	Phoenix	-0.16	11.16	4.68	N
3,838	0.70	114.60	3,837.74	-2.18	13.27	-2.27	0.09	MWD	Phoenix	0.00	13.45	7.38	N
4,027	0.70	113.90	4,026.72	-3.12	15.38	-3.23	0.00	MWD	Phoenix	0.00	15.69	-0.37	N
4,217	1.20	122.10	4,216.70	-4.65	18.12	-4.78	0.27	MWD	Phoenix	0.26	18.71	4.32	N
4,408	1.20	131.50	4,407.65	-7.04	21.32	-7.18	0.10	MWD	Phoenix	0.00	22.45	4.92	N
4,598	1.90	129.80	4,597.58	-10.37	25.23	-10.55	0.37	MWD	Phoenix	0.37	27.28	-0.89	N
4,723	1.80	125.70	4,722.52	-12.85	28.41	-13.04	0.13	MWD	Phoenix	-0.08	31.18	-3.28	N
4,866	1.20	139.80	4,865.47	-15.30	31.20	-15.51	0.49	MWD	Phoenix	-0.42	34.75	9.86	N
5,057	1.10	172.40	5,056.43	-18.65	32.74	-18.87	0.34	MWD	Phoenix	-0.05	37.67	17.07	N
5,247	1.10	177.20	5,246.40	-22.27	33.07	-22.50	0.05	MWD	Phoenix	0.00	39.87	2.53	N
5,437	1.00	178.10	5,436.37	-25.75	33.21	-25.98	0.05	MWD	Phoenix	-0.05	42.03	0.47	N
5,627	1.00	174.80	5,626.34	-29.06	33.42	-29.29	0.03	MWD	Phoenix	0.00	44.29	-1.74	N
5,817	0.90	182.50	5,816.31	-32.20	33.50	-32.43	0.09	MWD	Phoenix	-0.05	46.47	4.05	N
6,008	0.80	180.10	6,007.29	-35.04	33.43	-35.26	0.06	MWD	Phoenix	-0.05	48.43	-1.26	N
6,198	0.80	181.30	6,197.27	-37.69	33.40	-37.91	0.01	MWD	Phoenix	0.00	50.36	0.83	N
6,383	1.10	162.50	6,382.25	-40.67	33.91	-40.90	0.23	MWD	Phoenix	0.16	52.95	-10.16	N
6,563	0.80	165.10	6,562.22	-43.54	34.75	-43.77	0.17	MWD	Phoenix	-0.17	55.70	1.44	N
6,744	1.00	171.00	6,743.20	-46.32	35.32	-46.56	0.12	MWD	Phoenix	0.11	58.25	3.26	N
6,925	1.00	173.40	6,924.17	-49.45	35.75	-49.69	0.02	MWD	Phoenix	0.00	61.01	1.33	N
7,106	0.80	189.70	7,105.15	-52.26	35.72	-52.50	0.18	MWD	Phoenix	-0.11	63.30	9.01	N
7,286	1.00	202.80	7,285.13	-54.95	34.90	-55.18	0.16	MWD	Phoenix	0.11	65.09	7.28	N
7,467	0.80	187.40	7,466.11	-57.66	34.12	-57.89	0.17	MWD	Phoenix	-0.11	67.00	-8.51	N
7,647	0.30	231.80	7,646.10	-59.19	33.59	-59.42	0.35	MWD	Phoenix	-0.28	68.06	24.67	N
7,828	0.80	73.90	7,827.09	-59.14	34.43	-59.37	0.60	MWD	Phoenix	0.28	68.43	-87.24	N
8,008	0.60	111.60	8,007.08	-59.13	36.51	-59.38	0.27	MWD	Phoenix	-0.11	69.50	20.94	N
8,189	0.30	102.80	8,188.07	-59.59	37.86	-59.84	0.17	MWD	Phoenix	-0.17	70.60	-4.86	N
8,369	0.60	239.60	8,368.07	-60.17	37.50	-60.42	0.47	MWD	Phoenix	0.17	70.90	76.00	N



Directional Survey

Well Name *CHK*MCCLOY RANCH 2-24-32 ST COM 002H		Lease MCCLOY RANCH 2-24-32 STATE COM		Field Name TRISTE DRAW		Business Unit Mid-Continent	
Ground Elevation (ft)	Original RKB (ft)	Current RKB Elevation				Mud Line Elevation (ft)	Water Depth (ft)

Survey Data

MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Method	Survey Company	Build (°/100ft)	Depart (ft)	Turn (°/100ft)	Unuse d data
8,549	1.00	224.20	8,548.05	-61.77	35.60	-62.01	0.25	MWD	Phoenix	0.22	71.29	-8.56	N
8,730	1.30	225.90	8,729.02	-64.33	33.02	-64.56	0.17	MWD	Phoenix	0.17	72.31	0.94	N
8,911	1.50	252.30	8,909.96	-66.48	29.29	-66.68	0.37	MWD	Phoenix	0.11	72.65	14.59	N
9,104	2.40	268.80	9,102.85	-67.34	22.84	-67.49	0.55	MWD	Phoenix	0.47	71.10	8.55	N
9,177	2.20	259.10	9,175.79	-67.63	19.94	-67.77	0.60	MWD	Phoenix	-0.27	70.51	-13.29	N
9,222	3.50	334.60	9,220.75	-66.55	18.50	-66.68	8.08	MWD	Phoenix	2.89	69.08	167.78	N
9,267	4.30	357.30	9,265.65	-63.63	17.83	-63.75	3.83	MWD	Phoenix	1.78	66.08	50.44	N
9,313	7.60	15.00	9,311.40	-58.97	18.54	-59.09	8.13	MWD	Phoenix	7.17	61.81	-	N
												744.13	
9,358	9.30	8.30	9,355.91	-52.49	19.83	-52.63	4.36	MWD	Phoenix	3.78	56.11	-14.89	N
9,403	14.20	0.70	9,399.95	-43.37	20.43	-43.51	11.40	MWD	Phoenix	10.89	47.94	-16.89	N
9,448	18.50	356.50	9,443.13	-30.72	20.06	-30.85	9.90	MWD	Phoenix	9.56	36.69	790.67	N
9,493	23.30	357.20	9,485.15	-14.69	19.19	-14.82	10.68	MWD	Phoenix	10.67	24.17	1.56	N
9,538	28.70	0.70	9,525.59	5.02	18.88	4.89	12.47	MWD	Phoenix	12.00	19.54	-	N
												792.22	
9,583	35.00	4.10	9,563.79	28.72	19.94	28.58	14.55	MWD	Phoenix	14.00	34.96	7.56	N
9,629	38.40	358.70	9,600.68	56.17	20.56	56.03	10.18	MWD	Phoenix	7.39	59.82	770.87	N
9,674	43.40	354.80	9,634.69	85.57	18.84	85.44	12.47	MWD	Phoenix	11.11	87.62	-8.67	N
9,719	48.30	353.10	9,666.02	117.66	15.42	117.55	11.22	MWD	Phoenix	10.89	118.67	-3.78	N
9,764	54.50	354.00	9,694.09	152.59	11.48	152.51	13.87	MWD	Phoenix	13.78	153.02	2.00	N
9,809	60.40	353.70	9,718.29	190.29	7.42	190.23	13.12	MWD	Phoenix	13.11	190.43	-0.67	N
9,854	67.60	352.60	9,738.00	230.41	2.58	230.39	16.15	MWD	Phoenix	16.00	230.43	-2.44	N
9,899	74.30	353.40	9,752.68	272.61	-2.59	272.62	14.98	MWD	Phoenix	14.89	272.62	1.78	N
9,944	81.90	356.50	9,761.96	316.43	-6.45	316.47	18.18	MWD	Phoenix	16.89	316.50	6.89	N
9,989	89.00	358.90	9,765.52	361.22	-8.24	361.27	16.65	MWD	Phoenix	15.78	361.32	5.33	N
10,080	89.20	359.10	9,766.95	452.20	-9.83	452.26	0.31	MWD	Phoenix	0.22	452.31	0.22	N
10,170	91.30	356.80	9,766.56	542.13	-13.05	542.21	3.46	MWD	Phoenix	2.33	542.29	-2.56	N
10,260	91.30	355.90	9,764.52	631.92	-18.78	632.04	1.00	MWD	Phoenix	0.00	632.20	-1.00	N
10,351	90.90	354.90	9,762.77	722.61	-26.07	722.77	1.18	MWD	Phoenix	-0.44	723.08	-1.10	N
10,441	92.30	0.00	9,760.26	812.46	-30.08	812.64	5.87	MWD	Phoenix	1.56	813.01	-	N
												394.33	
10,531	92.30	359.20	9,756.64	902.38	-30.70	902.57	0.89	MWD	Phoenix	0.00	902.90	399.11	N
10,621	93.10	358.80	9,752.41	992.27	-32.27	992.46	0.99	MWD	Phoenix	0.89	992.79	-0.44	N
10,712	92.30	357.80	9,748.12	1,083.12	-34.97	1,083.34	1.41	MWD	Phoenix	-0.88	1,083.69	-1.10	N
10,801	88.00	0.00	9,747.89	1,172.08	-36.68	1,172.30	5.43	MWD	Phoenix	-4.83	1,172.65	-	N
												402.02	
10,892	89.40	1.40	9,749.95	1,263.05	-35.57	1,263.26	2.18	MWD	Phoenix	1.54	1,263.55	1.54	N
10,982	92.00	1.80	9,748.85	1,353.00	-33.05	1,353.19	2.92	MWD	Phoenix	2.89	1,353.40	0.44	N
11,072	90.40	1.80	9,746.97	1,442.93	-30.23	1,443.10	1.78	MWD	Phoenix	-1.78	1,443.25	0.00	N
11,162	93.00	1.00	9,744.30	1,532.85	-28.03	1,533.01	3.02	MWD	Phoenix	2.89	1,533.11	-0.89	N
11,252	92.10	0.50	9,740.29	1,622.76	-26.85	1,622.90	1.14	MWD	Phoenix	-1.00	1,622.98	-0.56	N
11,343	92.40	0.30	9,736.72	1,713.68	-26.22	1,713.82	0.40	MWD	Phoenix	0.33	1,713.88	-0.22	N
11,433	92.40	0.50	9,732.95	1,803.60	-25.59	1,803.73	0.22	MWD	Phoenix	0.00	1,803.78	0.22	N
11,523	91.60	0.70	9,729.81	1,893.54	-24.65	1,893.67	0.92	MWD	Phoenix	-0.89	1,893.70	0.22	N
11,613	92.90	1.20	9,726.28	1,983.46	-23.16	1,983.57	1.55	MWD	Phoenix	1.44	1,983.59	0.56	N



Directional Survey

Well Name *CHK*MCCLOY RANCH 2-24-32 ST COM 002H		Lease MCCLOY RANCH 2-24-32 STATE COM		Field Name TRISTE DRAW		Business Unit Mid-Continent	
Ground Elevation (ft)	Original RKB (ft)	Current RKB Elevation				Mud Line Elevation (ft)	Water Depth (ft)

Survey Data

MD (ft)	Incl (°)	Azm (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Method	Survey Company	Build (°/100ft)	Depart (ft)	Turn (°/100ft)	Unuse d data
11,703	93.80	1.60	9,721.02	2,073.28	-20.96	2,073.37	1.09	MWD	Phoenix	1.00	2,073.38	0.44	N
11,794	90.70	0.80	9,717.44	2,164.17	-19.06	2,164.25	3.52	MWD	Phoenix	-3.41	2,164.26	-0.88	N
11,884	87.70	359.90	9,718.70	2,254.15	-18.51	2,254.23	3.48	MWD	Phoenix	-3.33	2,254.23	399.00	N
11,974	86.90	358.90	9,722.94	2,344.05	-19.45	2,344.12	1.42	MWD	Phoenix	-0.89	2,344.13	-1.11	N
12,064	90.80	359.80	9,724.75	2,434.00	-20.47	2,434.09	4.45	MWD	Phoenix	4.33	2,434.09	1.00	N
12,154	91.60	359.50	9,722.86	2,523.98	-21.02	2,524.07	0.95	MWD	Phoenix	0.89	2,524.07	-0.33	N
12,245	90.80	359.20	9,720.96	2,614.95	-22.05	2,615.04	0.94	MWD	Phoenix	-0.88	2,615.05	-0.33	N
12,335	90.50	358.50	9,719.94	2,704.93	-23.86	2,705.03	0.85	MWD	Phoenix	-0.33	2,705.04	-0.78	N
12,425	90.40	358.40	9,719.23	2,794.89	-26.29	2,795.01	0.16	MWD	Phoenix	-0.11	2,795.02	-0.11	N
12,515	89.00	356.90	9,719.70	2,884.81	-29.98	2,884.95	2.28	MWD	Phoenix	-1.56	2,884.97	-1.67	N
12,606	90.30	1.50	9,720.26	2,975.78	-31.25	2,975.92	5.25	MWD	Phoenix	1.43	2,975.94	-	N
12,696	88.40	0.00	9,721.28	3,065.76	-30.07	3,065.89	2.69	MWD	Phoenix	-2.11	3,065.90	-1.67	N
12,786	91.00	0.70	9,721.75	3,155.74	-29.52	3,155.87	2.99	MWD	Phoenix	2.89	3,155.88	0.78	N
12,876	89.70	359.80	9,721.20	3,245.74	-29.13	3,245.86	1.76	MWD	Phoenix	-1.44	3,245.87	399.00	N
12,966	88.00	358.50	9,723.00	3,335.71	-30.47	3,335.84	2.38	MWD	Phoenix	-1.89	3,335.84	-1.44	N
13,057	88.70	359.20	9,725.62	3,426.65	-32.29	3,426.79	1.09	MWD	Phoenix	0.77	3,426.80	0.77	N
13,147	90.60	359.10	9,726.17	3,516.63	-33.63	3,516.78	2.11	MWD	Phoenix	2.11	3,516.79	-0.11	N
13,237	88.40	358.10	9,726.96	3,606.60	-35.82	3,606.76	2.69	MWD	Phoenix	-2.44	3,606.77	-1.11	N
13,327	88.10	357.50	9,729.71	3,696.49	-39.28	3,696.67	0.75	MWD	Phoenix	-0.33	3,696.70	-0.67	N
13,418	88.90	357.90	9,732.09	3,787.38	-42.93	3,787.59	0.98	MWD	Phoenix	0.88	3,787.62	0.44	N
13,508	90.00	359.20	9,732.95	3,877.35	-45.21	3,877.56	1.89	MWD	Phoenix	1.22	3,877.61	1.44	N
13,598	92.10	0.60	9,731.31	3,967.32	-45.36	3,967.54	2.80	MWD	Phoenix	2.33	3,967.58	-	N
13,689	94.30	0.90	9,726.23	4,058.17	-44.17	4,058.37	2.44	MWD	Phoenix	2.42	4,058.41	0.33	N
13,779	94.20	0.00	9,719.56	4,147.92	-43.47	4,148.12	1.00	MWD	Phoenix	-0.11	4,148.14	-1.00	N
13,869	94.70	0.00	9,712.57	4,237.64	-43.47	4,237.84	0.56	MWD	Phoenix	0.56	4,237.87	0.00	N
13,959	91.80	359.80	9,707.47	4,327.49	-43.63	4,327.69	3.23	MWD	Phoenix	-3.22	4,327.71	399.78	N
14,049	92.40	359.20	9,704.17	4,417.43	-44.41	4,417.63	0.94	MWD	Phoenix	0.67	4,417.65	-0.67	N
14,140	93.30	359.30	9,699.65	4,508.30	-45.60	4,508.51	1.00	MWD	Phoenix	0.99	4,508.53	0.11	N
14,230	92.00	358.30	9,695.49	4,598.18	-47.48	4,598.40	1.82	MWD	Phoenix	-1.44	4,598.43	-1.11	N



Directional Survey

Well Name *CHK*MCCLOY RANCH 2-24-32 ST COM 002H		Lease MCCLOY RANCH 2-24-32 STATE COM		Field Name TRISTE DRAW		Business Unit Mid-Continent	
Ground Elevation (ft)	Original RKB (ft)	Current RKB Elevation				Mud Line Elevation (ft)	Water Depth (ft)

Survey Data													
MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Method	Survey Company	Build (°/100ft)	Depart (ft)	Turn (°/100ft)	Unuse d data
14,320	92.40	358.00	9,692.03	4,688.07	-50.39	4,688.31	0.56	MWD	Phoenix	0.44	4,688. 34	-0.33	N
14,410	91.70	356.70	9,688.81	4,777.92	-54.55	4,778.18	1.64	MWD	Phoenix	-0.78	4,778. 23	-1.44	N
14,501	89.90	354.80	9,687.54	4,868.65	-61.29	4,868.95	2.88	MWD	Phoenix	-1.98	4,869. 03	-2.09	N
14,527	89.50	354.10	9,687.68	4,894.53	-63.80	4,894.85	3.10	MWD	Phoenix	-1.54	4,894. 94	-2.69	N
14,578	89.50	354.10	9,688.12	4,945.25	-69.05	4,945.61	0.00	Projection	Phoenix	0.00	4,945. 74	0.00	N