

Chesapeake Operating Inc.

Eddy County, New Mexico (NAD27)

Crow Flats 14 federal 4H

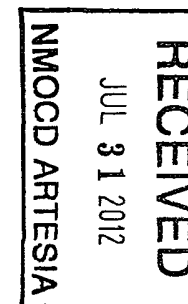
Job # 1210260

Rig: Cactus 120

Survey: Phoenix MWD Surveys

Chesapeake Energy, Survey Report

13 April, 2012



15-38466

Chesapeake Energy, Survey Report

Company:	Chesapeake Operating Inc.	Local Co-ordinate Reference:	Site Crow Flats 14 federal 4H
Project:	Eddy County, New Mexico (NAD27)	TVD Reference:	WELL @ 3618.00usft (Cactus 120)
Site:	Crow Flats 14 federal, 4H	MD Reference:	WELL @ 3618.00usft (Cactus 120)
Well:	Job # 1210260	North Reference:	Grid
Wellbore:	Rig: Cactus 120	Survey Calculation Method:	Minimum Curvature
Design:	Rig: Cactus 120	Database:	Compass5000

Project	Eddy County, New Mexico (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	Crow Flats 14 federal 4H		
Site Position:		Northing:	699,016.90 usft
From:	Map	Easting:	554,986.60 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 55' 17.5648 N
		Longitude:	104° 9' 14.9003 W
		Grid Convergence:	0.10 °

Well	Job # 1210260		
Well Position	+N/-S	0.00 usft	Northing: 699,016.90 usft
	+E/-W	0.00 usft	Easting: 554,986.60 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	25.00 usft
		Latitude:	32° 55' 17.5648 N
		Longitude:	104° 9' 14.9003 W
		Ground Level:	3,593.00 usft

Wellbore	Rig: Cactus 120		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010_14	03/26/12	7.81
			Dip Angle
			(°)
			60.71
			Field Strength
			(nT)
			48,892

Design	Rig: Cactus 120		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(°)
			90.05

Survey Program	Date: 04/13/12		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
160.00	11,077.00	Phoenix MWD Surveys (Rig: Cactus 120)	MWD
			Description
			MWD - Standard

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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)	
0.00	0.00	0.00	3,618.00	0.00	0.00	0.00	0.00	0.00	699,016.90	554,986.60	
1.00	0.00	112.30	3,617.00	1.00	0.00	0.00	0.00	0.19	699,016.90	554,986.60	
Surface											
160.00	0.30	112.30	3,458.00	160.00	-0.16	0.39	0.39	0.19	699,016.74	554,986.99	
First Phoenix MWD Survey @ 160' MD											
398.00	0.40	201.40	3,220.00	398.00	-1.17	0.66	0.66	0.21	699,015.73	554,987.26	
598.00	0.70	245.20	3,020.01	597.99	-2.33	-0.70	-0.70	0.25	699,014.57	554,985.90	
715.00	0.80	254.80	2,903.02	714.98	-2.85	-2.14	-2.14	0.14	699,014.05	554,984.46	
906.00	0.60	237.80	2,712.04	905.96	-3.73	-4.27	-4.27	0.15	699,013.17	554,982.33	
1,096.00	0.30	248.70	2,522.04	1,095.96	-4.44	-5.58	-5.57	0.16	699,012.46	554,981.02	
1,288.00	0.30	255.40	2,330.05	1,287.95	-4.75	-6.53	-6.53	0.02	699,012.15	554,980.07	
1,479.00	0.00	353.70	2,139.05	1,478.95	-4.87	-7.02	-7.01	0.16	699,012.03	554,979.58	
1,670.00	0.10	342.50	1,948.05	1,669.95	-4.71	-7.07	-7.06	0.05	699,012.19	554,979.53	
1,861.00	0.10	316.10	1,757.05	1,860.95	-4.44	-7.23	-7.23	0.02	699,012.46	554,979.37	
2,134.00	0.20	40.90	1,484.05	2,133.95	-3.90	-7.09	-7.08	0.08	699,013.00	554,979.51	
2,326.00	0.30	88.80	1,292.05	2,325.95	-3.64	-6.36	-6.36	0.12	699,013.26	554,980.24	
2,516.00	0.40	45.30	1,102.05	2,515.95	-3.16	-5.40	-5.39	0.15	699,013.74	554,981.20	
2,707.00	0.20	6.10	911.05	2,706.95	-2.36	-4.89	-4.88	0.14	699,014.54	554,981.71	
2,898.00	0.30	12.00	720.06	2,897.94	-1.54	-4.75	-4.75	0.05	699,015.36	554,981.85	
3,090.00	0.30	64.70	528.06	3,089.94	-0.84	-4.19	-4.19	0.14	699,016.06	554,982.41	
3,281.00	0.20	74.50	337.06	3,280.94	-0.53	-3.41	-3.41	0.06	699,016.37	554,983.19	
3,472.00	0.10	106.90	146.06	3,471.94	-0.49	-2.93	-2.93	0.07	699,016.41	554,983.67	
3,664.00	0.00	7.60	-45.94	3,663.94	-0.54	-2.77	-2.77	0.05	699,016.36	554,983.83	
3,855.00	0.10	226.50	-236.94	3,854.94	-0.66	-2.89	-2.89	0.05	699,016.24	554,983.71	
4,046.00	0.40	263.30	-427.94	4,045.94	-0.85	-3.68	-3.68	0.17	699,016.05	554,982.92	
4,237.00	0.60	274.70	-618.93	4,236.93	-0.84	-5.34	-5.34	0.12	699,016.06	554,981.26	
4,429.00	0.60	271.00	-810.92	4,428.92	-0.74	-7.34	-7.34	0.02	699,016.16	554,979.26	

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Site:	Crow Flats 14 federal 4H	MD Reference:	WELL @ 3618.00usft (Cactus 120)
Well:	Job # 1210260	North Reference:	Grid
Wellbore:	Rig - Cactus 120	Survey Calculation Method:	Minimum Curvature
Design:	Rig - Cactus 120	Database:	Compass5000

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)	
4,621.00	0.40	266.30	-1,002.91	4,620.91	-0.77	-9.02	-9.02	0.11	699,016.13	554,977.58	
4,812.00	0.40	285.60	-1,193.91	4,811.91	-0.63	-10.32	-10.32	0.07	699,016.27	554,976.28	
5,004.00	0.50	275.10	-1,385.90	5,003.90	-0.38	-11.80	-11.80	0.07	699,016.52	554,974.80	
5,195.00	0.80	302.00	-1,576.89	5,194.89	0.40	-13.77	-13.77	0.22	699,017.30	554,972.83	
5,386.00	0.50	37.20	-1,767.88	5,385.88	1.77	-14.39	-14.39	0.51	699,018.67	554,972.21	
5,482.00	0.40	84.90	-1,863.88	5,481.88	2.14	-13.81	-13.81	0.39	699,019.04	554,972.79	
5,672.00	0.90	96.60	-2,053.87	5,671.87	2.02	-11.66	-11.66	0.27	699,018.92	554,974.94	
5,863.00	1.80	112.20	-2,244.81	5,862.81	0.72	-7.39	-7.40	0.50	699,017.62	554,979.21	
6,045.00	2.60	105.40	-2,426.68	6,044.68	-1.46	-0.77	-0.77	0.46	699,015.44	554,985.83	
6,109.00	4.40	101.20	-2,490.55	6,108.55	-2.32	3.04	3.04	2.84	699,014.58	554,989.64	
6,141.00	6.00	97.70	-2,522.42	6,140.42	-2.78	5.90	5.90	5.10	699,014.12	554,992.50	
6,173.00	7.50	95.10	-2,554.20	6,172.20	-3.19	9.64	9.64	4.78	699,013.71	554,996.24	
6,204.00	10.50	88.70	-2,584.81	6,202.81	-3.31	14.48	14.48	10.19	699,013.59	555,001.08	
6,236.00	13.10	88.10	-2,616.13	6,234.13	-3.12	21.02	21.02	8.13	699,013.78	555,007.62	
6,268.00	15.60	88.80	-2,647.13	6,265.13	-2.91	28.95	28.95	7.83	699,013.99	555,015.55	
6,300.00	18.50	90.20	-2,677.72	6,295.72	-2.84	38.33	38.33	9.15	699,014.06	555,024.93	
6,332.00	22.00	90.10	-2,707.74	6,325.74	-2.87	49.40	49.40	10.94	699,014.03	555,036.00	
6,363.00	26.80	89.50	-2,735.96	6,353.96	-2.82	62.20	62.21	15.50	699,014.08	555,048.80	
6,395.00	31.90	88.90	-2,763.85	6,381.85	-2.59	77.88	77.88	15.96	699,014.31	555,064.48	
6,427.00	37.10	88.50	-2,790.21	6,408.21	-2.18	96.00	96.00	16.27	699,014.72	555,082.60	
6,459.00	42.00	88.40	-2,814.88	6,432.88	-1.63	116.36	116.36	15.31	699,015.27	555,102.96	
6,491.00	47.10	88.20	-2,837.67	6,455.67	-0.96	138.79	138.79	15.94	699,015.94	555,125.39	
6,522.00	52.30	88.10	-2,857.72	6,475.72	-0.19	162.41	162.41	16.78	699,016.71	555,149.01	
6,554.00	57.50	88.00	-2,876.11	6,494.11	0.70	188.57	188.57	16.25	699,017.60	555,175.17	
6,586.00	62.10	87.30	-2,892.20	6,510.20	1.84	216.19	216.19	14.50	699,018.74	555,202.79	
6,618.00	64.20	88.60	-2,906.66	6,524.66	2.85	244.72	244.72	7.50	699,019.75	555,231.32	
6,649.00	66.10	88.90	-2,919.68	6,537.68	3.47	272.85	272.84	6.19	699,020.37	555,259.45	

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Site:	Crow Flats 14 federal 4H	MD Reference:	WELL @ 3618.00usft (Cactus 120)
Well:	Job # 1210260	North Reference:	Grid
Wellbore:	Rig Cactus 120	Survey Calculation Method:	Minimum Curvature
Design:	Rig Cactus 120	Database:	Compass5000

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)
6,681.00	68.70	90.20	-2,931.98	6,549.98	3.70	302.38	302.38	8.95	699,020.60	555,288.98
6,713.00	71.00	91.10	-2,943.00	6,561.00	3.35	332.42	332.42	7.66	699,020.25	555,319.02
6,745.00	72.50	92.00	-2,953.03	6,571.03	2.53	362.80	362.80	5.40	699,019.43	555,349.40
6,777.00	74.30	91.10	-2,962.17	6,580.17	1.70	393.45	393.45	6.24	699,018.60	555,380.05
6,808.00	76.10	90.90	-2,970.09	6,588.09	1.18	423.42	423.42	5.84	699,018.08	555,410.02
6,840.00	78.70	90.80	-2,977.07	6,595.07	0.72	454.64	454.64	8.13	699,017.62	555,441.24
6,872.00	81.40	90.50	-2,982.59	6,600.59	0.36	486.16	486.16	8.49	699,017.26	555,472.76
6,890.00	83.20	88.60	-2,985.01	6,603.01	0.50	503.99	503.99	14.47	699,017.40	555,490.59
6,922.00	85.90	88.00	-2,988.05	6,606.05	1.44	535.83	535.83	8.64	699,018.34	555,522.43
7,017.00	89.10	89.20	-2,992.19	6,610.19	3.76	630.70	630.69	3.60	699,020.66	555,617.30
7,113.00	90.70	89.40	-2,992.36	6,610.36	4.93	726.69	726.68	1.68	699,021.83	555,713.29
7,208.00	90.90	90.20	-2,991.03	6,609.03	5.27	821.68	821.67	0.87	699,022.17	555,808.28
7,304.00	92.20	90.10	-2,988.43	6,606.43	5.01	917.64	917.63	1.36	699,021.91	555,904.24
7,399.00	90.40	90.40	-2,986.28	6,604.28	4.60	1,012.61	1,012.60	1.92	699,021.50	555,999.21
7,494.00	90.80	90.50	-2,985.28	6,603.28	3.85	1,107.60	1,107.60	0.43	699,020.75	556,094.20
7,590.00	89.60	91.70	-2,984.95	6,602.95	2.01	1,203.58	1,203.58	1.77	699,018.91	556,190.18
7,685.00	90.60	91.40	-2,984.78	6,602.78	-0.56	1,298.54	1,298.54	1.10	699,016.34	556,285.14
7,781.00	89.70	92.00	-2,984.53	6,602.53	-3.41	1,394.50	1,394.50	1.13	699,013.49	556,381.10
7,876.00	89.70	91.90	-2,985.03	6,603.03	-6.64	1,489.44	1,489.45	0.11	699,010.26	556,476.04
7,972.00	89.90	91.70	-2,985.36	6,603.36	-9.65	1,585.39	1,585.40	0.29	699,007.25	556,571.99
8,067.00	88.00	90.20	-2,987.10	6,605.10	-11.23	1,680.36	1,680.37	2.55	699,005.67	556,666.96
8,162.00	88.80	90.00	-2,989.76	6,607.76	-11.40	1,775.32	1,775.33	0.87	699,005.50	556,761.92
8,258.00	89.90	90.40	-2,990.85	6,608.85	-11.73	1,871.31	1,871.32	1.22	699,005.17	556,857.91
8,353.00	89.00	89.50	-2,991.76	6,609.76	-11.65	1,966.30	1,966.31	1.34	699,005.25	556,952.90
8,449.00	87.50	88.70	-2,994.69	6,612.69	-10.14	2,062.24	2,062.25	1.77	699,006.76	557,048.84
8,598.00	88.00	88.10	-3,000.54	6,618.54	-5.98	2,211.07	2,211.08	0.52	699,010.92	557,197.67
8,640.00	88.40	88.00	-3,001.86	6,619.86	-4.55	2,253.03	2,253.03	0.98	699,012.35	557,239.63

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8,735.00	88.30	87.10	-3,004.59	6,622.59	-0.50	2,347.90	2,347.90	0.95	699,016.40	557,334.50	
8,829.00	87.50	88.00	-3,008.04	6,626.04	3.52	2,441.75	2,441.74	1.28	699,020.42	557,428.35	
8,924.00	88.90	90.70	-3,011.02	6,629.02	4.60	2,536.68	2,536.68	3.20	699,021.50	557,523.28	
9,020.00	89.90	90.80	-3,012.03	6,630.03	3.34	2,632.67	2,632.66	1.05	699,020.24	557,619.27	
9,115.00	90.80	90.50	-3,011.45	6,629.45	2.26	2,727.66	2,727.66	1.00	699,019.16	557,714.26	
9,211.00	91.50	89.50	-3,009.52	6,627.52	2.26	2,823.64	2,823.64	1.27	699,019.16	557,810.24	
9,307.00	92.70	89.30	-3,006.00	6,624.00	3.27	2,919.57	2,919.56	1.27	699,020.17	557,906.17	
9,402.00	93.00	89.40	-3,001.28	6,619.28	4.34	3,014.44	3,014.44	0.33	699,021.24	558,001.04	
9,497.00	90.00	90.20	-2,998.79	6,616.79	4.67	3,109.40	3,109.39	3.27	699,021.57	558,096.00	
9,593.00	88.50	90.80	-3,000.05	6,618.05	3.84	3,205.38	3,205.38	1.68	699,020.74	558,191.98	
9,688.00	88.80	91.10	-3,002.29	6,620.29	2.26	3,300.34	3,300.34	0.45	699,019.16	558,286.94	
9,783.00	89.60	90.50	-3,003.61	6,621.61	0.94	3,395.32	3,395.32	1.05	699,017.84	558,381.92	
9,879.00	87.70	91.10	-3,005.88	6,623.88	-0.40	3,491.28	3,491.28	2.08	699,016.50	558,477.88	
9,975.00	88.60	91.70	-3,008.98	6,626.98	-2.75	3,587.20	3,587.20	1.13	699,014.15	558,573.80	
10,070.00	87.20	91.70	-3,012.46	6,630.46	-5.57	3,682.10	3,682.10	1.47	699,011.33	558,668.70	
10,165.00	87.50	90.80	-3,016.85	6,634.85	-7.64	3,776.97	3,776.98	1.00	699,009.26	558,763.57	
10,260.00	88.10	90.50	-3,020.50	6,638.50	-8.71	3,871.89	3,871.90	0.71	699,008.19	558,858.49	
10,356.00	88.70	89.90	-3,023.18	6,641.18	-9.05	3,967.85	3,967.86	0.88	699,007.85	558,954.45	
10,451.00	89.10	88.90	-3,025.00	6,643.00	-8.05	4,062.83	4,062.84	1.13	699,008.85	559,049.43	
10,546.00	89.80	88.70	-3,025.91	6,643.91	-6.06	4,157.80	4,157.81	0.77	699,010.84	559,144.40	
10,642.00	88.30	88.80	-3,027.50	6,645.50	-3.97	4,253.77	4,253.77	1.57	699,012.93	559,240.37	
10,737.00	88.50	89.00	-3,030.16	6,648.16	-2.15	4,348.71	4,348.71	0.30	699,014.75	559,335.31	
10,832.00	88.30	88.30	-3,032.81	6,650.81	0.09	4,443.65	4,443.65	0.77	699,016.99	559,430.25	
10,928.00	88.40	88.10	-3,035.57	6,653.57	3.11	4,539.56	4,539.56	0.23	699,020.01	559,526.16	
11,023.00	88.90	87.90	-3,037.81	6,655.81	6.42	4,634.48	4,634.47	0.57	699,023.32	559,621.08	

Last Phoenix MWD Surveys @ 11023' MD

Chesapeake Energy, Survey Report

Company:	Chesapeake Operating Inc	Local Co-ordinate Reference:	Site Crow Flats 14, federal 4H
Project:	Eddy County, New Mexico (NAD27)	TVD Reference:	WELL @ 3618.00usft (Cactus-120)
Site:	Crow Flats 14 federal 4H	MD Reference:	WELL @ 3618.00usft (Cactus-120)
Well:	Job # 1210260	North Reference:	Grid
Wellbore:	Rig Cactus 120	Survey Calculation Method:	Minimum Curvature
Design:	Rig Cactus 120	Database:	Compass5000

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)
11,077.00	88.90	87.90	-3,038.85	6,656.85	8.40	4,688.43	4,688.42	0.00	699,025.30	559,675.03
Projection to TD @ 11077' MD										

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
+N/-S (usft)	+E/-W (usft)			
1.00	1.00	0.00	0.00	Surface
160.00	160.00	-0.16	0.39	First Phoenix MWD Survey @ 160' MD
11,023.00	6,655.81	6.42	4,634.48	Last Phoenix MWD Surveys @ 11023' MD
11,077.00	6,656.85	8.40	4,688.43	Projection to TD @ 11077' MD

Checked By: _____	Approved By: _____	Date: _____
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MD	Inc	Az	TVDSS	TVD	N/S	E./W
0	0	0	-3618	0	0 N	0 E
160	0.3	112.3	-3458	160	0.16 S	0.39 E
398	0.4	201.4	-3220	398	1.17 S	0.66 E
598	0.7	245.2	-3020.01	597.99	2.33 S	0.7 W
715	0.8	254.8	-2903.02	714.98	2.85 S	2.14 W
906	0.6	237.8	-2712.04	905.96	3.73 S	4.27 W
1096	0.3	248.7	-2522.04	1095.96	4.44 S	5.58 W
1288	0.3	255.4	-2330.05	1287.95	4.75 S	6.53 W
1479	0	353.7	-2139.05	1478.95	4.87 S	7.02 W
1670	0.1	342.5	-1948.05	1669.95	4.71 S	7.07 W
1861	0.1	316.1	-1757.05	1860.95	4.44 S	7.23 W
2134	0.2	40.9	-1484.05	2133.95	3.9 S	7.09 W
2326	0.3	88.8	-1292.05	2325.95	3.64 S	6.36 W
2516	0.4	45.3	-1102.05	2515.95	3.16 S	5.4 W
2707	0.2	6.1	-911.05	2706.95	2.36 S	4.89 W
2898	0.3	12	-720.06	2897.94	1.54 S	4.75 W
3090	0.3	64.7	-528.06	3089.94	0.84 S	4.19 W
3281	0.2	74.5	-337.06	3280.94	0.53 S	3.41 W
3472	0.1	106.9	-146.06	3471.94	0.49 S	2.93 W
3664	0	7.6	45.94	3663.94	0.54 S	2.77 W
3855	0.1	226.5	236.94	3854.94	0.66 S	2.89 W
4046	0.4	263.3	427.94	4045.94	0.85 S	3.68 W
4237	0.6	274.7	618.93	4236.93	0.84 S	5.34 W
4429	0.6	271	810.92	4428.92	0.74 S	7.34 W
4621	0.4	266.3	1002.91	4620.91	0.77 S	9.02 W
4812	0.4	285.6	1193.91	4811.91	0.63 S	10.32 W
5004	0.5	275.1	1385.9	5003.9	0.38 S	11.8 W
5195	0.8	302	1576.89	5194.89	0.4 N	13.77 W
5386	0.5	37.2	1767.88	5385.88	1.77 N	14.39 W
5482	0.4	84.9	1863.88	5481.88	2.14 N	13.81 W
5672	0.9	96.6	2053.87	5671.87	2.02 N	11.66 W
5863	1.8	112.2	2244.81	5862.81	0.72 N	7.39 W
6045	2.6	105.4	2426.68	6044.68	1.46 S	0.77 W
6109	4.4	101.2	2490.55	6108.55	2.32 S	3.04 E
6141	6	97.7	2522.42	6140.42	2.78 S	5.9 E
6173	7.5	95.1	2554.2	6172.2	3.19 S	9.64 E
6204	10.5	88.7	2584.81	6202.81	3.31 S	14.48 E
6236	13.1	88.1	2616.13	6234.13	3.12 S	21.02 E
6268	15.6	88.8	2647.13	6265.13	2.91 S	28.95 E
6300	18.5	90.2	2677.72	6295.72	2.84 S	38.33 E
6332	22	90.1	2707.74	6325.74	2.87 S	49.4 E
6363	26.8	89.5	2735.96	6353.96	2.82 S	62.2 E
6395	31.9	88.9	2763.85	6381.85	2.59 S	77.88 E
6427	37.1	88.5	2790.21	6408.21	2.18 S	96 E
6459	42	88.4	2814.88	6432.88	1.63 S	116.36 E
6491	47.1	88.2	2837.67	6455.67	0.96 S	138.79 E

6522	52.3	88.1	2857.72	6475.72	0.19 S	162.41 E
6554	57.5	88	2876.11	6494.11	0.7 N	188.57 E
6586	62.1	87.3	2892.2	6510.2	1.84 N	216.19 E
6618	64.2	88.6	2906.66	6524.66	2.85 N	244.72 E
6649	66.1	88.9	2919.68	6537.68	3.47 N	272.85 E
6681	68.7	90.2	2931.98	6549.98	3.7 N	302.38 E
6713	71	91.1	2943	6561	3.35 N	332.42 E
6745	72.5	92	2953.03	6571.03	2.53 N	362.8 E
6777	74.3	91.1	2962.17	6580.17	1.7 N	393.45 E
6808	76.1	90.9	2970.09	6588.09	1.18 N	423.42 E
6840	78.7	90.8	2977.07	6595.07	0.72 N	454.64 E
6872	81.4	90.5	2982.59	6600.59	0.36 N	486.16 E
6890	83.2	88.6	2985.01	6603.01	0.5 N	503.99 E
6922	85.9	88	2988.05	6606.05	1.44 N	535.83 E
7017	89.1	89.2	2992.19	6610.19	3.76 N	630.7 E
7113	90.7	89.4	2992.36	6610.36	4.93 N	726.69 E
7208	90.9	90.2	2991.03	6609.03	5.27 N	821.68 E
7304	92.2	90.1	2988.43	6606.43	5.01 N	917.64 E
7399	90.4	90.4	2986.28	6604.28	4.6 N	1012.61 E
7494	90.8	90.5	2985.28	6603.28	3.85 N	1107.6 E
7590	89.6	91.7	2984.95	6602.95	2.01 N	1203.58 E
7685	90.6	91.4	2984.78	6602.78	0.56 S	1298.54 E
7781	89.7	92	2984.53	6602.53	3.41 S	1394.5 E
7876	89.7	91.9	2985.03	6603.03	6.64 S	1489.44 E
7972	89.9	91.7	2985.36	6603.36	9.65 S	1585.39 E
8067	88	90.2	2987.1	6605.1	11.23 S	1680.36 E
8162	88.8	90	2989.76	6607.76	11.4 S	1775.32 E
8258	89.9	90.4	2990.85	6608.85	11.73 S	1871.31 E
8353	89	89.5	2991.76	6609.76	11.65 S	1966.3 E
8449	87.5	88.7	2994.69	6612.69	10.14 S	2062.24 E
8598	88	88.1	3000.54	6618.54	5.98 S	2211.07 E
8640	88.4	88	3001.86	6619.86	4.55 S	2253.03 E
8735	88.3	87.1	3004.59	6622.59	0.5 S	2347.9 E
8829	87.5	88	3008.04	6626.04	3.52 N	2441.75 E
8924	88.9	90.7	3011.02	6629.02	4.6 N	2536.68 E
9020	89.9	90.8	3012.03	6630.03	3.34 N	2632.67 E
9115	90.8	90.5	3011.45	6629.45	2.26 N	2727.66 E
9211	91.5	89.5	3009.52	6627.52	2.26 N	2823.64 E
9307	92.7	89.3	3006	6624	3.27 N	2919.57 E
9402	93	89.4	3001.28	6619.28	4.34 N	3014.44 E
9497	90	90.2	2998.79	6616.79	4.67 N	3109.4 E
9593	88.5	90.8	3000.05	6618.05	3.84 N	3205.38 E
9688	88.8	91.1	3002.29	6620.29	2.26 N	3300.34 E
9783	89.6	90.5	3003.61	6621.61	0.94 N	3395.32 E
9879	87.7	91.1	3005.88	6623.88	0.4 S	3491.28 E
9975	88.6	91.7	3008.98	6626.98	2.75 S	3587.2 E
10070	87.2	91.7	3012.46	6630.46	5.57 S	3682.1 E

10165	87.5	90.8	3016.85	6634.85	7.64 S	3776.97 E
10260	88.1	90.5	3020.5	6638.5	8.71 S	3871.89 E
10356	88.7	89.9	3023.18	6641.18	9.05 S	3967.85 E
10451	89.1	88.9	3025	6643	8.05 S	4062.83 E
10546	89.8	88.7	3025.91	6643.91	6.06 S	4157.8 E
10642	88.3	88.8	3027.5	6645.5	3.97 S	4253.77 E
10737	88.5	89	3030.16	6648.16	2.15 S	4348.71 E
10832	88.3	88.3	3032.81	6650.81	0.09 N	4443.65 E
10928	88.4	88.1	3035.57	6653.57	3.11 N	4539.56 E
11023	88.9	87.9	3037.81	6655.81	6.42 N	4634.48 E
11077	88.9	87.9	3038.85	6656.85	8.4 N	4688.43 E

Northing	Easting	V Sec	D Leg
699016.9 N	554986.6 E	0	0
699016.7 N	554987 E	0.39	0.19
699015.7 N	554987.3 E	0.66	0.21
699014.6 N	554985.9 E	-0.7	0.25
699014.1 N	554984.5 E	-2.14	0.14
699013.2 N	554982.3 E	-4.27	0.15
699012.5 N	554981 E	-5.57	0.16
699012.2 N	554980.1 E	-6.53	0.02
699012 N	554979.6 E	-7.01	0.16
699012.2 N	554979.5 E	-7.06	0.05
699012.5 N	554979.4 E	-7.23	0.02
699013 N	554979.5 E	-7.08	0.08
699013.3 N	554980.2 E	-6.36	0.12
699013.7 N	554981.2 E	-5.39	0.15
699014.5 N	554981.7 E	-4.88	0.14
699015.4 N	554981.9 E	-4.75	0.05
699016.1 N	554982.4 E	-4.19	0.14
699016.4 N	554983.2 E	-3.41	0.06
699016.4 N	554983.7 E	-2.93	0.07
699016.4 N	554983.8 E	-2.77	0.05
699016.2 N	554983.7 E	-2.89	0.05
699016.1 N	554982.9 E	-3.68	0.17
699016.1 N	554981.3 E	-5.34	0.12
699016.2 N	554979.3 E	-7.34	0.02
699016.1 N	554977.6 E	-9.02	0.11
699016.3 N	554976.3 E	-10.32	0.07
699016.5 N	554974.8 E	-11.8	0.07
699017.3 N	554972.8 E	-13.77	0.22
699018.7 N	554972.2 E	-14.39	0.51
699019 N	554972.8 E	-13.81	0.39
699018.9 N	554974.9 E	-11.66	0.27
699017.6 N	554979.2 E	-7.4	0.5
699015.4 N	554985.8 E	-0.77	0.46
699014.6 N	554989.6 E	3.04	2.84
699014.1 N	554992.5 E	5.9	5.1
699013.7 N	554996.2 E	9.64	4.78
699013.6 N	555001.1 E	14.48	10.19
699013.8 N	555007.6 E	21.02	8.13
699014 N	555015.5 E	28.95	7.83
699014.1 N	555024.9 E	38.33	9.15
699014 N	555036 E	49.4	10.94
699014.1 N	555048.8 E	62.21	15.5
699014.3 N	555064.5 E	77.88	15.96
699014.7 N	555082.6 E	96	16.27
699015.3 N	555103 E	116.36	15.31
699015.9 N	555125.4 E	138.79	15.94

699016.7 N	555149 E	162.41	16.78
699017.6 N	555175.2 E	188.57	16.25
699018.7 N	555202.8 E	216.19	14.5
699019.8 N	555231.3 E	244.72	7.5
699020.4 N	555259.4 E	272.84	6.19
699020.6 N	555289 E	302.38	8.95
699020.3 N	555319 E	332.42	7.66
699019.4 N	555349.4 E	362.8	5.4
699018.6 N	555380.1 E	393.45	6.24
699018.1 N	555410 E	423.42	5.84
699017.6 N	555441.2 E	454.64	8.13
699017.3 N	555472.8 E	486.16	8.49
699017.4 N	555490.6 E	503.99	14.47
699018.3 N	555522.4 E	535.83	8.64
699020.7 N	555617.3 E	630.69	3.6
699021.8 N	555713.3 E	726.68	1.68
699022.2 N	555808.3 E	821.67	0.87
699021.9 N	555904.2 E	917.63	1.36
699021.5 N	555999.2 E	1012.6	1.92
699020.8 N	556094.2 E	1107.6	0.43
699018.9 N	556190.2 E	1203.58	1.77
699016.3 N	556285.1 E	1298.54	1.1
699013.5 N	556381.1 E	1394.5	1.13
699010.3 N	556476 E	1489.45	0.11
699007.2 N	556572 E	1585.4	0.29
699005.7 N	556667 E	1680.37	2.55
699005.5 N	556761.9 E	1775.33	0.87
699005.2 N	556857.9 E	1871.32	1.22
699005.3 N	556952.9 E	1966.31	1.34
699006.8 N	557048.8 E	2062.25	1.77
699010.9 N	557197.7 E	2211.08	0.52
699012.3 N	557239.6 E	2253.03	0.98
699016.4 N	557334.5 E	2347.9	0.95
699020.4 N	557428.3 E	2441.74	1.28
699021.5 N	557523.3 E	2536.68	3.2
699020.2 N	557619.3 E	2632.66	1.05
699019.2 N	557714.3 E	2727.66	1
699019.2 N	557810.2 E	2823.64	1.27
699020.2 N	557906.2 E	2919.56	1.27
699021.2 N	558001 E	3014.44	0.33
699021.6 N	558096 E	3109.39	3.27
699020.7 N	558192 E	3205.38	1.68
699019.2 N	558286.9 E	3300.34	0.45
699017.8 N	558381.9 E	3395.32	1.05
699016.5 N	558477.9 E	3491.28	2.08
699014.2 N	558573.8 E	3587.2	1.13
699011.3 N	558668.7 E	3682.1	1.47

699009.3 N	558763.6 E	3776.98	1
699008.2 N	558858.5 E	3871.9	0.71
699007.9 N	558954.5 E	3967.86	0.88
699008.8 N	559049.4 E	4062.84	1.13
699010.8 N	559144.4 E	4157.81	0.77
699012.9 N	559240.4 E	4253.77	1.57
699014.8 N	559335.3 E	4348.71	0.3
699017 N	559430.2 E	4443.65	0.77
699020 N	559526.2 E	4539.56	0.23
699023.3 N	559621.1 E	4634.47	0.57
699025.3 N	559675 E	4688.42	0

Submit within 45 days of well completion	State of New Mexico Energy, Minerals and Natural Resources Oil Conservation Division 1220 S. St Francis Dr. Santa Fe, NM 87505	Revised February 15, 2012				
		1. WELL API NO. 30-015-38466				
		2. Well Name: CROW FLATS 14 FEDERAL #004H				
		3. Well Number: 004H				
HYDRAULIC FRACTURING FLUID DISCLOSURE ☒ Original ☐ Amendment		4. Surface Hole Location: Unit:L Lot:L Section:14 Township:16S Range:28E Feet from:1980 N/S Line:S Feet from:200 E/W Line:W				
		5. Bottom Hole Location: Unit:L Lot:L Section:14 Township:16S Range:28E Feet from:1980 N/S Line:S Feet from:200 E/W Line:W				
		6. Latitude: 32.9216999642082 Longitude: 104.154651705629				
		7. County: Eddy				
8. Operator Name and Address: CHESAPEAKE OPERATING, INC. P.O. Box 18496 Oklahoma City 73154		9. OGRID: 147179	10. Phone Number: 405-935-3782			
11. Last Fracture Date: 6/1/2012 Frac Performed by: TRICAN		12. Production Type: O				
13. Pool Code(s): 97102		14. Gross Fractured Interval: Confidential				
15. True Vertical Depth (TVD): 6,654 ft		16. Total Volume of Fluid Pumped: 38,991 bbls				
17. HYDRAULIC FLUID COMPOSITION AND CONCENTRATION:						
Trade Name	Supplier	Purpose	Ingredients	(CAS #) Chemical Abstract Service #	Maximum Ingredient Concentration in Additive (% by mass)	Maximum Ingredient Concentration in HF Fluid (% by mass)
Fresh Water		Carrier/Base Fluid			0%	86.61447%
White Sand		Proppant	Crystalline Silica (Quartz Sand, Silicon Dioxide)	014808-60-7	100%	7.6223%
Super LC		Proppant	Crystalline Silica (Quartz Sand, Silicon Dioxide)	014808-60-7	97%	2.61864%
			Phenol/Formaldehyde Resin	009003-35-4	5%	0.13498%
			Hexamethylenetetramine (Hexamine)	000100-97-0	1%	0.027%
100 Mesh Sand		Proppant	Crystalline Silica (Quartz Sand, Silicon Dioxide)	014808-60-7	100%	0.70943%
15 hcl	TRICAN	Acid	Water	007732-18-5	85%	1.51914%
			Hydrochloric Acid	007647-01-0	15%	0.26808%
FEAC-30	TRICAN	Iron Control Agent	Acetic Acid	000064-19-7	60%	0.0055%
			Water	007732-18-5	60%	0.0055%
			Citric Acid	000077-92-9	30%	0.00275%
AI-9	TRICAN	Corrosion Inhibitor	Methanol (Methyl Alcohol)	000067-56-1	60%	0.00345%
			Ethoxylated Alcohols^ C14-15	068951-67-7	30%	0.00172%
			Modified Thiourea Polymer	068527-49-1	30%	0.00172%
			Propargyl Alcohol (2-Propynol)	000107-19-7	10%	0.00057%
			Alkenes^ C>10 alpha-	064743-02-8	5%	0.00029%
MC MX 664-5	MULTI-CHEM	Surfactant	Methanol (Methyl Alcohol)	000067-56-1	70%	0.04808%
			Sulfonate	TRADE SECRET	30%	0.0206%

MC B 8642 WS	MULTI-CHEM	Anti-Bacterial Agent	Isopropanol (Isopropyl Alcohol, Propan-2-ol)	000067-63-0	5%	0.00343%
			Glutaraldehyde (Pentanediol)	000111-30-8	60%	0.01354%
			Quaternary Ammonium Compound	068424-85-1	10%	0.00226%
			Ethanol	000064-17-5	1%	0.00023%
MC S-2510T (WS)	MULTI-CHEM	Scale Inhibitor	Ethylene Glycol	000107-21-1	60%	0.00601%
WG-111D	TRICAN	Gelling Agent	Sodium Hydroxide	001310-73-2	5%	0.0005%
			Guar Gum	009000-30-0	100%	0.41399%
WBO-1 (Oxidizer Breaker)	TRICAN	Breaker	Ammonium Persulfate	007727-54-0	100%	0.00872%
WXB-12	TRICAN	Cross Linker	Ethylene Glycol	000107-21-1	60%	0.00504%
			Sodium Tetraborate	012179-04-3	30%	0.00252%
			Sodium Hydroxide	001310-73-2	7%	0.00059%
EnCap HP	TRICAN	Breaker	Ammonium Persulfate	007727-54-0	60%	0.00309%
			Proprietary Cured Acrylic Resin (EnCap HP)	TRADE SECRET	25%	0.00129%
			Crystalline Silica (Quartz Sand, Silicon Dioxide)	014808-60-7	15%	0.00077%
PH-11	TRICAN	pH Adjusting Agent	Potassium Hydroxide	001310-58-3	23%	0.00213%
DF-1	TRICAN	Defoaming Agent	No Hazardous Components	NONE	0%	0%
Additional Ingredients Not Listed on MSDS					0%	0%
Super LC		Proppant	Non-MSDS Components Not Provided by Supplier	NOT PROVIDED	0%	0%
MC B 8642 WS, MC MX 664-5, MC S-2510T (WS)	MULTI-CHEM	Anti-Bacterial Agent, Scale Inhibitor, Surfactant	Methanol (Methyl Alcohol)	000067-56-1	0%	0%
			Non-MSDS Components Not Provided by Supplier	NOT PROVIDED	0%	0%
			Water	007732-18-5	0%	0%
DF-1, PH-11, WG-111D, WXB-12	TRICAN	Cross Linker, Defoaming Agent, Gelling Agent, pH Adjusting Agent	Crystalline Silica (Silicon Dioxide)	007631-86-9	0%	0%
			Methylcellulose	009004-67-5	0%	0%
			Polydimethyl Siloxane	063148-62-9	0%	0%
			Potassium Carbonate	000584-08-7	0%	0%
			Silicon Dioxide	112926-00-8	0%	0%
			Water	007732-18-5	0%	0%

18. I, as Operator, hereby certify that the information shown on this disclosure form is true and complete to the best of my knowledge and belief.

Signature: Signed Electronically Printed Name: Bryan Arrant Title: Regulatory Specialist II
Date: 7/5/2012
E-mail Address: bryan.arrant@chk.com

NMOCDD does not require the reporting of information beyond MSDS data as described in 29 CFR 1910.1200. NMOCDD does not require the reporting or disclosure of proprietary, trade secret or confidential business information.