



30-015-39246

Ryan Energy Directional Drilling Report

Field: Eddy Co, NM NAD 83
Site: Big Sinks 2-24-30 State 1H
Well: 2-24-30 State 1H
Wellpath: ST1

Prepared For:

Chesapeake Operating, Inc.



Ryan Energy Technology

19510 Oil Center Blvd
Houston, TX 77073
Ph 281-443-1414
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www.ryanenergy.com

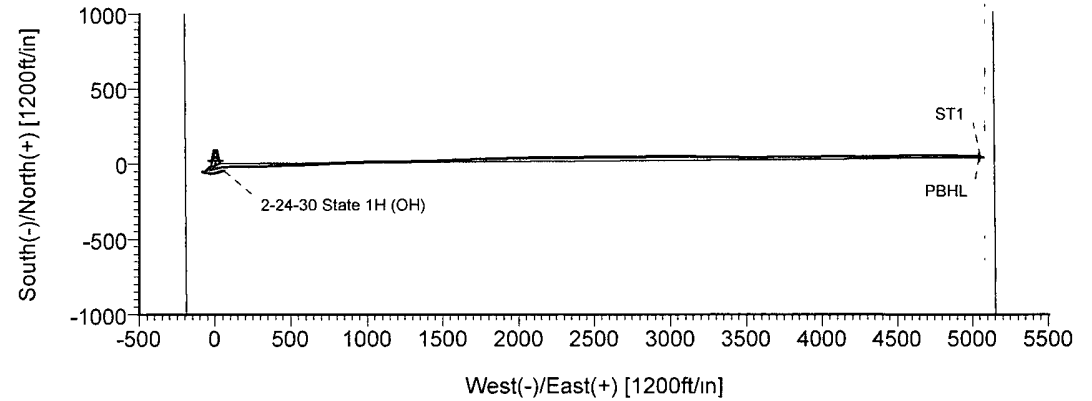


Chesapeake Operating, Inc.

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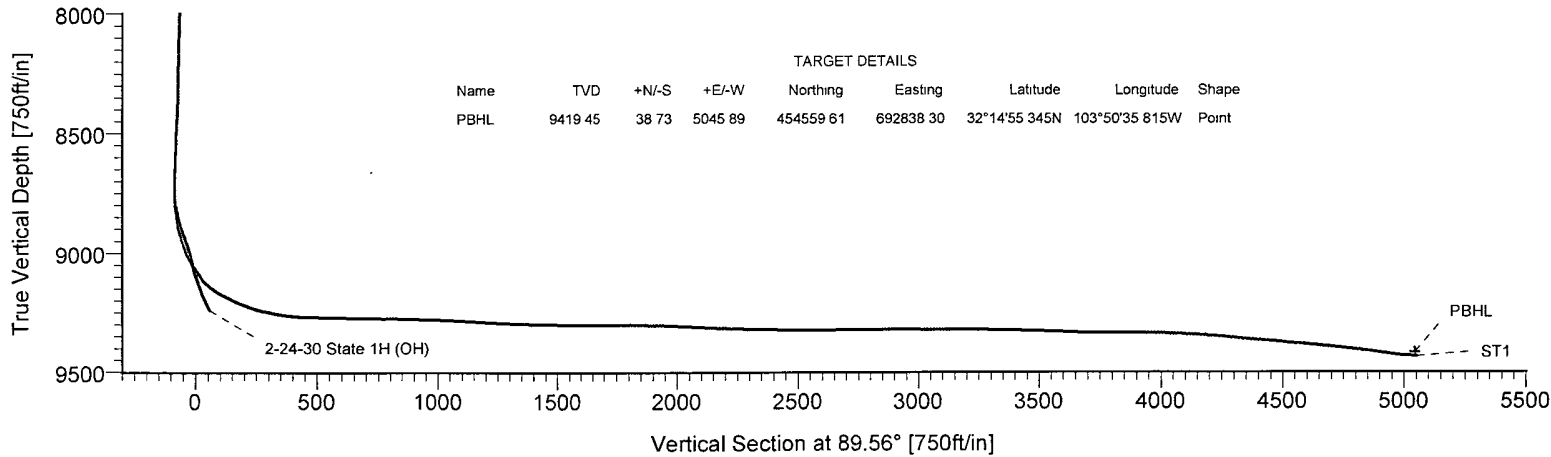
Azimuths to Grid North
 True North -0.25°
 Magnetic North 7.44°
 Magnetic Field
 Strength 48603nT
 Dip Angle 60.15°
 Date 9/2/2011
 Model IGRF2010



SITE DETAILS
 Big Sinks 2-24-30 State 1H
 Eddy Co., NM
 Site Centre Northing 454520.88
 Easting 687792.41
 Ground Level 3465.00
 Positional Uncertainty 2.00
 Convergence 0.25

WELLPATH DETAILS
ST1
 Rig Ref Datum Patterson 62 SITE 3490.00ft
 V.Section Angle Origin +N/-S Origin +E/-W Starting From TVD
 89.56° 0.00 0.00 0.00

FIELD DETAILS
 Eddy Co, NM NAD 83
 USA
 Geodetic System US State Plane Coordinate System 1983
 Ellipsoid GRS 1980
 Zone New Mexico, Eastern Zone
 Magnetic Model IGRF2010
 System Datum Mean Sea Level
 Local North Grid North



TARGET DETAILS								
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL	9419.45	38.73	5045.89	454559.61	692838.30	32°14'55.345N	103°50'35.815W	Point

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Wellbore (2-24-30 State 1HST1)
 Created By Ryan Energy Technologies Date 9/29/2011
 Checked _____ Date _____
 Reviewed _____ Date _____
 Approved _____ Date _____



Ryan Energy Technologies

Survey Report



Company:	Chesapeake Operating, Inc.	Date:	9/29/2011	Time:	14:06:00	Page:	1
Field:	Eddy Co. NM NAD 83	Co-ordinate(NE) Reference:	Site: Big Sinks 2-24-30 State 1H				
Site:	Big Sinks 2-24-30 State 1H	Vertical (TVD) Reference:	SITE 3490.0				
Well:	2-24-30 State 1H	Section (VS) Reference:	Well (0'00N,0'00E,89.56Azi)				
Wellpath:	ST1	Survey Calculation Method:	Minimum Curvature			Db:	Sybase

Field:	Eddy Co. NM NAD 83		
	USA		
Map System:	US State Plane Coordinate System 1983	Map Zone:	New Mexico Eastern Zone
Geo Datum:	GRS 1980	Coordinate System:	Site Centre
Sys Datum:	Mean Sea Level	Geomagnetic Model:	IGRF2010

Site:	Big Sinks 2-24-30 State 1H		
	Eddy Co. NM		
Site Position:		Northing:	454520.88 ft
From: Map		Easting:	687792.41 ft
Position Uncertainty:	2.00 ft	Latitude:	32 14 55 186 N
Ground Level:	3465.00 ft	Longitude:	103 51 34 573 W
		North Reference:	Grid
		Grid Convergence:	0 25 deg

Well:	2-24-30 State 1H	Slot Name:	
Well Position:	+N/-S 0.00 ft	Northing:	454520.88 ft
	+E/-W 0.00 ft	Easting:	687792.41 ft
Position Uncertainty:	0.00 ft	Latitude:	32 14 55 186 N
		Longitude:	103 51 34 573 W

Wellpath:	ST1	Drilled From:	Surface
Current Datum:	SITE	Tie-on Depth:	0.00 ft
Magnetic Data:	9/2/2011	Above System Datum:	Mean Sea Level
Field Strength:	48603 nT	Declination:	7.69 deg
Vertical Section:	Depth From (TVD)	Mag Dip Angle:	60 15 deg
	ft	+N/-S	Direction
		ft	deg
	0.00	0.00	0.00
			89.56

Survey Program for Definitive Wellpath				Version:	0
Date:	9/29/2011	Validated:	No	Toolcode	
Actual From	To	Survey		Tool Name	
ft	ft				
200.00	8350.40	Survey #1 (200.00-8350.40)	Gyro	Gyro	
8414.00	8764.00	Survey #2 (8414.00-8764.00)	Ryan MWD	Ryan MWD	
8795.00	14154.00	Survey #3 (8795.00-14154.00)	Ryan MWD	Ryan MWD	
14154.00	14209.00	Survey #4 (14154.00-14209.00)	Projection	Projection	

Survey										
MD	Incl	Azim	TVD	+N/-S	+E/-W	VS	DLS	Build	Turn	Tool/Comment
ft	deg	deg	ft	ft	ft	ft	deg/100ft	deg/100ft	deg/100ft	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	TIE LINE
200.00	0.52	91.36	200.00	-0.02	0.91	0.91	0.26	0.26	0.00	Gyro
400.00	0.45	94.79	399.99	-0.11	2.60	2.60	0.04	-0.03	1.71	Gyro
600.00	0.43	99.46	599.98	-0.30	4.12	4.12	0.02	-0.01	2.33	Gyro
800.00	0.40	112.70	799.98	-0.69	5.50	5.50	0.05	-0.01	6.62	Gyro
1000.00	0.37	118.40	999.97	-1.27	6.72	6.71	0.02	-0.01	2.85	Gyro
1200.00	0.44	121.34	1199.97	-1.97	7.94	7.93	0.04	0.03	1.47	Gyro
1400.00	0.46	117.67	1399.96	-2.75	9.31	9.29	0.02	0.01	-1.83	Gyro
1600.00	0.56	93.26	1599.96	-3.17	10.99	10.97	0.12	0.05	-12.20	Gyro
1800.00	0.72	97.01	1799.94	-3.38	13.22	13.19	0.08	0.08	1.87	Gyro
2000.00	0.63	85.79	1999.93	-3.46	15.56	15.53	0.08	-0.04	-5.61	Gyro
2200.00	0.59	284.36	2199.93	-3.12	15.66	15.64	0.60	-0.02	-80.72	Gyro
2400.00	0.82	260.29	2399.91	-3.11	13.25	13.23	0.19	0.11	-12.03	Gyro
2600.00	0.86	259.07	2599.89	-3.63	10.37	10.34	0.02	0.02	-0.61	Gyro
2800.00	1.14	255.37	2799.86	-4.42	6.97	6.93	0.14	0.14	-1.85	Gyro
3000.00	1.33	251.56	2999.81	-5.66	2.84	2.80	0.10	0.09	-1.90	Gyro
3200.00	1.98	239.14	3199.73	-8.16	-2.33	-2.39	0.37	0.32	-6.21	Gyro
3400.00	1.68	209.12	3399.63	-12.50	-6.72	-6.81	0.50	-0.15	-15.01	Gyro
3600.00	1.60	188.62	3599.55	-17.82	-8.56	-8.70	0.29	-0.04	-10.25	Gyro
3800.00	1.47	166.02	3799.48	-23.07	-8.36	-8.54	0.31	-0.06	-11.30	Gyro



Ryan Energy Technologies

Survey Report



Company: Chesapeake Operating, Inc.
Field: Eddy Co. NM NAD 83
Site: Big Sinks 2-24-30 State 1H
Well: 2-24-30 State 1H
Wellpath: ST1

Date: 9/29/2011 Time: 14:06:00 Page: 2
Co-ordinate(NE) Reference: Site: Big Sinks 2-24-30 State 1H
Vertical (TVD) Reference: SITE 3490.0
Section (VS) Reference: Well (0.00N,0.00E,89.56Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
4000.00	0.49	137.78	3999.45	-26.19	-7.17	-7.37	0.53	-0.49	-14.12	Gyro
4200.00	0.21	148.97	4199.45	-27.14	-6.40	-6.61	0.14	-0.14	5.59	Gyro
4400.00	0.19	181.77	4399.44	-27.78	-6.23	-6.44	0.06	-0.01	16.40	Gyro
4600.00	0.28	277.77	4599.44	-28.05	-6.72	-6.94	0.18	0.04	48.00	Gyro
4800.00	0.62	298.70	4799.44	-27.46	-8.15	-8.36	0.19	0.17	10.46	Gyro
5000.00	0.84	297.30	4999.42	-26.27	-10.41	-10.61	0.11	0.11	-0.70	Gyro
5200.00	0.94	300.92	5199.40	-24.76	-13.12	-13.31	0.06	0.05	1.81	Gyro
5400.00	0.92	294.40	5399.37	-23.25	-15.99	-16.16	0.05	-0.01	-3.26	Gyro
5600.00	1.03	296.30	5599.34	-21.79	-19.06	-19.23	0.06	0.05	0.95	Gyro
5800.00	0.93	289.87	5799.31	-20.44	-22.20	-22.35	0.07	-0.05	-3.21	Gyro
6000.00	0.71	291.66	5999.29	-19.43	-24.88	-25.02	0.11	-0.11	-0.89	Gyro
6200.00	0.64	278.72	6199.28	-18.81	-27.13	-27.27	0.08	-0.03	-6.47	Gyro
6400.00	0.82	245.09	6399.26	-19.24	-29.53	-29.68	0.23	0.09	-16.81	Gyro
6600.00	1.41	233.00	6599.22	-21.32	-32.80	-32.96	0.32	0.29	-6.04	Gyro
6800.00	1.66	226.40	6799.15	-24.80	-36.86	-37.05	0.15	0.12	-3.30	Gyro
7000.00	1.66	221.12	6999.07	-28.98	-40.86	-41.08	0.08	0.00	-2.64	Gyro
7200.00	1.79	227.49	7198.98	-33.27	-45.07	-45.32	0.12	0.06	3.18	Gyro
7400.00	1.86	221.74	7398.88	-37.81	-49.53	-49.82	0.10	0.03	-2.87	Gyro
7600.00	2.00	223.61	7598.76	-42.76	-54.10	-54.43	0.08	0.07	0.93	Gyro
7800.00	2.12	224.06	7798.63	-47.94	-59.08	-59.45	0.06	0.06	0.22	Gyro
8000.00	1.94	232.84	7998.51	-52.64	-64.35	-64.75	0.18	-0.09	4.39	Gyro
8200.00	1.21	259.88	8198.43	-55.06	-69.13	-69.55	0.51	-0.36	13.52	Gyro
8350.40	2.06	276.96	8348.77	-55.01	-73.37	-73.80	0.65	0.57	11.36	Gyro
8414.00	2.40	285.50	8412.32	-54.52	-75.79	-76.21	0.75	0.53	13.43	Ryan MWD
8604.00	1.80	278.20	8602.20	-53.03	-82.58	-82.98	0.35	-0.32	-3.84	Ryan MWD
8700.00	1.90	268.90	8698.15	-52.84	-85.66	-86.07	0.33	0.10	-9.69	Ryan MWD
8732.00	1.00	255.30	8730.14	-52.92	-86.46	-86.87	2.99	-2.81	-42.50	Ryan MWD
8764.00	3.00	121.50	8762.12	-53.43	-86.02	-86.43	11.76	6.25	-418.12	Ryan MWD
8795.00	5.90	110.40	8793.03	-54.41	-83.83	-84.25	9.72	9.35	-35.81	Ryan MWD
8827.00	6.30	80.90	8824.85	-54.71	-80.56	-80.98	9.76	1.25	-92.19	Ryan MWD
8859.00	8.30	72.50	8856.59	-53.74	-76.62	-77.03	7.07	6.25	-26.25	Ryan MWD
8890.00	11.70	74.10	8887.12	-52.20	-71.46	-71.86	11.00	10.97	5.16	Ryan MWD
8922.00	15.60	73.40	8918.21	-50.08	-64.22	-64.60	12.20	12.19	-2.19	Ryan MWD
8954.00	18.10	75.70	8948.83	-47.63	-55.27	-55.64	8.08	7.81	7.19	Ryan MWD
8986.00	21.30	74.30	8978.95	-44.82	-44.86	-45.20	10.11	10.00	-4.37	Ryan MWD
9017.00	25.10	74.90	9007.44	-41.59	-33.09	-33.41	12.28	12.26	1.94	Ryan MWD
9049.00	28.40	75.30	9036.01	-37.89	-19.17	-19.46	10.33	10.31	1.25	Ryan MWD
9080.00	31.40	75.60	9062.89	-34.01	-4.21	-4.47	9.69	9.68	0.97	Ryan MWD
9112.00	35.30	77.70	9089.61	-29.96	12.90	12.67	12.71	12.19	6.56	Ryan MWD
9144.00	41.40	81.30	9114.70	-26.39	32.42	32.21	20.29	19.06	11.25	Ryan MWD
9175.00	48.00	82.80	9136.72	-23.39	54.00	53.82	21.56	21.29	4.84	Ryan MWD
9207.00	55.70	86.50	9156.48	-21.09	79.03	78.87	25.72	24.06	11.56	Ryan MWD
9239.00	61.00	88.80	9173.26	-19.99	106.24	106.08	17.65	16.56	7.19	Ryan MWD
9270.00	63.00	89.10	9187.82	-19.49	133.60	133.45	6.51	6.45	0.97	Ryan MWD
9302.00	65.30	89.10	9201.77	-19.04	162.40	162.25	7.19	7.19	0.00	Ryan MWD
9334.00	68.10	88.90	9214.43	-18.52	191.78	191.63	8.77	8.75	-0.62	Ryan MWD
9366.00	70.50	88.90	9225.74	-17.95	221.71	221.56	7.50	7.50	0.00	Ryan MWD
9397.00	73.60	88.60	9235.29	-17.30	251.19	251.05	10.04	10.00	-0.97	Ryan MWD
9429.00	75.80	87.70	9243.73	-16.31	282.03	281.90	7.39	6.87	-2.81	Ryan MWD
9461.00	78.30	86.80	9250.90	-14.81	313.18	313.06	8.28	7.81	-2.81	Ryan MWD
9493.00	80.50	86.30	9256.79	-12.91	344.58	344.47	7.04	6.87	-1.56	Ryan MWD
9524.00	82.80	87.30	9261.29	-11.20	375.20	375.10	8.08	7.42	3.23	Ryan MWD
9556.00	85.30	87.70	9264.61	-9.82	406.99	406.90	7.91	7.81	1.25	Ryan MWD
9588.00	86.60	88.10	9266.87	-8.65	438.89	438.81	4.25	4.06	1.25	Ryan MWD



Ryan Energy Technologies Survey Report



Company:	Chesapeake Operating, Inc.	Date:	9/29/2011	Time:	14:06:00	Page:	3
Field:	Eddy Co. NM, NAD 83	Co-ordinate(NE) Reference:	Site: Big Sinks 2-24-30 State 1H				
Site:	Big Sinks 2-24-30 State 1H	Vertical (TVD) Reference:	SITE 3490.0				
Well:	2-24-30 State 1H	Section (VS) Reference:	Well (0.00N 0.00E 89.56Azi)				
Wellpath:	ST-1	Survey Calculation Method:	Minimum Curvature			Db:	Sybase

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
9620.00	89.10	88.20	9268.07	-7.61	470.85	470.78	7.82	7.81	0.31	Ryan MWD
9651.00	89.00	88.40	9268.58	-6.69	501.83	501.76	0.72	-0.32	0.65	Ryan MWD
9747.00	88.60	87.90	9270.59	-3.60	597.76	597.71	0.67	-0.42	-0.52	Ryan MWD
9842.00	88.80	87.40	9272.75	0.30	692.65	692.64	0.57	0.21	-0.53	Ryan MWD
9937.00	88.60	87.50	9274.90	4.52	787.54	787.55	0.24	-0.21	0.11	Ryan MWD
10032.00	88.20	87.20	9277.56	8.91	882.40	882.44	0.53	-0.42	-0.32	Ryan MWD
10128.00	88.40	89.20	9280.40	11.93	978.30	978.36	2.09	0.21	2.08	Ryan MWD
10223.00	87.00	89.50	9284.22	13.01	1073.22	1073.28	1.51	-1.47	0.32	Ryan MWD
10318.00	86.60	89.10	9289.52	14.16	1168.06	1168.14	0.59	-0.42	-0.42	Ryan MWD
10414.00	87.30	89.30	9294.63	15.50	1263.92	1264.00	0.76	0.73	0.21	Ryan MWD
10509.00	88.40	88.80	9298.19	17.08	1358.83	1358.92	1.27	1.16	-0.53	Ryan MWD
10604.00	89.30	88.30	9300.10	19.48	1453.78	1453.89	1.08	0.95	-0.53	Ryan MWD
10699.00	89.30	87.60	9301.26	22.88	1548.71	1548.84	0.74	0.00	-0.74	Ryan MWD
10794.00	90.10	88.10	9301.76	26.44	1643.64	1643.80	0.99	0.84	0.53	Ryan MWD
10889.00	90.40	87.50	9301.34	30.09	1738.57	1738.75	0.71	0.32	-0.63	Ryan MWD
10985.00	88.40	88.30	9302.35	33.61	1834.50	1834.70	2.24	-2.08	-0.83	Ryan MWD
11080.00	87.70	88.60	9305.58	36.17	1929.41	1929.63	0.80	-0.74	0.32	Ryan MWD
11175.00	87.40	88.20	9309.64	38.82	2024.28	2024.52	0.53	-0.32	-0.42	Ryan MWD
11271.00	86.90	89.40	9314.41	40.83	2120.14	2120.39	1.35	-0.52	1.25	Ryan MWD
11366.00	87.60	89.90	9318.97	41.41	2215.03	2215.28	0.91	0.74	0.53	Ryan MWD
11461.00	88.90	89.80	9321.87	41.66	2309.98	2310.23	1.37	1.37	-0.11	Ryan MWD
11557.00	89.00	88.30	9323.63	43.25	2405.95	2406.21	1.57	0.10	-1.56	Ryan MWD
11652.00	90.10	89.10	9324.38	45.41	2500.92	2501.20	1.43	1.16	0.84	Ryan MWD
11747.00	90.30	90.20	9324.05	45.99	2595.92	2596.19	1.18	0.21	1.16	Ryan MWD
11842.00	90.10	89.70	9323.71	46.07	2690.92	2691.19	0.57	-0.21	-0.53	Ryan MWD
11938.00	91.00	88.90	9322.79	47.24	2786.90	2787.18	1.25	0.94	-0.83	Ryan MWD
12033.00	89.60	90.00	9322.30	48.16	2881.89	2882.18	1.87	-1.47	1.16	Ryan MWD
12129.00	89.10	88.40	9323.39	49.50	2977.87	2978.17	1.75	-0.52	-1.67	Ryan MWD
12225.00	89.50	91.10	9324.56	49.91	3073.86	3074.15	2.84	0.42	2.81	Ryan MWD
12320.00	89.70	91.30	9325.22	47.92	3168.83	3169.11	0.30	0.21	0.21	Ryan MWD
12415.00	89.40	90.90	9325.97	46.10	3263.81	3264.07	0.53	-0.32	-0.42	Ryan MWD
12510.00	89.00	90.60	9327.29	44.86	3358.80	3359.04	0.53	-0.42	-0.32	Ryan MWD
12605.00	88.60	90.50	9329.28	43.95	3453.77	3454.01	0.43	-0.42	-0.11	Ryan MWD
12700.00	88.00	90.00	9332.10	43.53	3548.73	3548.96	0.82	-0.63	-0.53	Ryan MWD
12796.00	87.60	89.30	9335.79	44.12	3644.65	3644.88	0.84	-0.42	-0.73	Ryan MWD
12891.00	90.30	89.70	9337.53	44.95	3739.62	3739.86	2.87	2.84	0.42	Ryan MWD
12986.00	89.10	89.40	9338.03	45.69	3834.62	3834.86	1.30	-1.26	-0.32	Ryan MWD
13081.00	89.10	89.20	9339.52	46.85	3929.60	3929.84	0.21	0.00	-0.21	Ryan MWD
13177.00	88.60	88.90	9341.44	48.44	4025.57	4025.82	0.61	-0.52	-0.31	Ryan MWD
13272.00	87.50	90.90	9344.68	48.61	4120.51	4120.76	2.40	-1.16	2.11	Ryan MWD
13367.00	85.70	90.90	9350.31	47.12	4215.32	4215.56	1.89	-1.89	0.00	Ryan MWD
13462.00	84.00	90.20	9358.84	46.21	4309.93	4310.16	1.93	-1.79	-0.74	Ryan MWD
13557.00	85.10	89.40	9367.86	46.54	4404.50	4404.73	1.43	1.16	-0.84	Ryan MWD
13653.00	84.10	89.10	9376.90	47.79	4500.06	4500.30	1.09	-1.04	-0.31	Ryan MWD
13748.00	84.60	89.90	9386.25	48.62	4594.60	4594.83	0.99	0.53	0.84	Ryan MWD
13843.00	83.70	89.80	9395.93	48.87	4689.10	4689.34	0.95	-0.95	-0.11	Ryan MWD
13938.00	83.90	90.20	9406.19	48.87	4783.54	4783.78	0.47	0.21	0.42	Ryan MWD
14033.00	82.10	90.70	9417.77	48.13	4877.83	4878.06	1.97	-1.89	0.53	Ryan MWD
14128.00	83.30	90.20	9429.84	47.39	4972.05	4972.27	1.37	1.26	-0.53	Ryan MWD
14154.00	83.90	90.20	9432.74	47.30	4997.89	4998.11	2.31	2.31	0.00	Ryan MWD
14209.00	83.90	90.20	9438.58	47.10	5052.58	5052.79	0.00	0.00	0.00	Projection



Ryan Energy Technologies COMPLETION REPORT



Company: Chesapeake Operating, Inc.	Date: 9/29/2011	Time: 14:06:35	Page: 1
Field: Eddy Co. NM NAD 83	Co-ordinate(NE) Reference:	Site: Big Sinks 2-24-30 State 1H	
Site: Big Sinks 2-24-30 State 1H	Vertical (TVD) Reference:	SITE 3490.0	
Well: 2-24-30 State 1H	Section (VS) Reference:	Well (0.00N, 0.00E, 89.56Azi)	
Wellpath: ST1	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Field: Eddy Co. NM NAD 83	
USA	
Map System: US State Plane Coordinate System 1983	Map Zone: New Mexico, Eastern Zone
Geo Datum: GRS 1980	Coordinate System: Site Centre
Sys Datum: Mean Sea Level	Geomagnetic Model: IGRF2010

Site: Big Sinks 2-24-30 State 1H	
Eddy Co. NM	
Site Position:	Northing: 454520.88 ft Latitude: 32 14 55 186 N
From: Map	Longitude: 103 51 34 573 W
Position Uncertainty: 2.00 ft	North Reference: Grid
Ground Level: 3465.00 ft	Grid Convergence: 0.25 deg

Well: 2-24-30 State 1H	Slot Name:
Well Position: +N/-S 0.00 ft Northing: 454520.88 ft Latitude: 32 14 55 186 N	
+E/-W 0.00 ft Easting: 687792.41 ft Longitude: 103 51 34 573 W	
Position Uncertainty: 0.00 ft	

Wellpath: ST1	Drilled From: Surface
Current Datum: SITE	Tie-on Depth: 0.00 ft
Magnetic Data: 9/2/2011	Above System Datum: Mean Sea Level
Field Strength: 48603 nT	Declination: 7.69 deg
Vertical Section: Depth From (TVD)	Mag Dip Angle: 60.15 deg
ft	+N/-S
ft	+E/-W
ft	Direction
ft	deg
0.00	0.00
0.00	0.00
0.00	89.56

Survey

MD	Incl	TVD	VS	Azim	N/S	E/W	ClsD	ClsA	DLS	Tool
ft	deg	ft	ft	deg	ft	ft	ft	deg	deg/100ft	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	TIE LINE
200.00	0.52	200.00	0.91	91.36	-0.02	0.91	0.91	91.36	0.26	Gyro
400.00	0.45	399.99	2.60	94.79	-0.11	2.60	2.60	92.40	0.04	Gyro
600.00	0.43	599.98	4.12	99.46	-0.30	4.12	4.13	94.13	0.02	Gyro
800.00	0.40	799.98	5.50	112.70	-0.69	5.50	5.55	97.15	0.05	Gyro
1000.00	0.37	999.97	6.71	118.40	-1.27	6.72	6.84	100.68	0.02	Gyro
1200.00	0.44	1199.97	7.93	121.34	-1.97	7.94	8.18	103.96	0.04	Gyro
1400.00	0.46	1399.96	9.29	117.67	-2.75	9.31	9.70	106.44	0.02	Gyro
1600.00	0.56	1599.96	10.97	93.26	-3.17	10.99	11.44	106.10	0.12	Gyro
1800.00	0.72	1799.94	13.19	97.01	-3.38	13.22	13.64	104.36	0.08	Gyro
2000.00	0.63	1999.93	15.53	85.79	-3.46	15.56	15.94	102.52	0.08	Gyro
2200.00	0.59	2199.93	15.64	284.36	-3.12	15.66	15.97	101.27	0.60	Gyro
2400.00	0.82	2399.91	13.23	260.29	-3.11	13.25	13.61	103.19	0.19	Gyro
2600.00	0.86	2599.89	10.34	259.07	-3.63	10.37	10.99	109.30	0.02	Gyro
2800.00	1.14	2799.86	6.93	255.37	-4.42	6.97	8.25	122.38	0.14	Gyro
3000.00	1.33	2999.81	2.80	251.56	-5.66	2.84	6.33	153.32	0.10	Gyro
3200.00	1.98	3199.73	-2.39	239.14	-8.16	-2.33	8.49	195.91	0.37	Gyro
3400.00	1.68	3399.63	6.81	209.12	-12.50	-6.72	14.19	208.27	0.50	Gyro
3600.00	1.60	3599.55	-8.70	188.62	-17.82	-8.56	19.77	205.67	0.29	Gyro
3800.00	1.47	3799.48	-8.54	166.02	-23.07	-8.36	24.54	199.93	0.31	Gyro
4000.00	0.49	3999.45	-7.37	137.78	-26.19	-7.17	27.15	195.31	0.53	Gyro
4200.00	0.21	4199.45	-6.61	148.97	-27.14	-6.40	27.88	193.28	0.14	Gyro
4400.00	0.19	4399.44	-6.44	181.77	-27.78	-6.23	28.47	192.63	0.06	Gyro
4600.00	0.28	4599.44	-6.94	277.77	-28.05	-6.72	28.84	193.47	0.18	Gyro
4800.00	0.62	4799.44	-8.36	298.70	-27.46	-8.15	28.65	196.54	0.19	Gyro
5000.00	0.84	4999.42	-10.61	297.30	-26.27	-10.41	28.26	201.61	0.11	Gyro
5200.00	0.94	5199.40	-13.31	300.92	-24.76	-13.12	28.02	207.92	0.06	Gyro
5400.00	0.92	5399.37	-16.16	294.40	-23.25	-15.99	28.21	214.51	0.05	Gyro



Ryan Energy Technologies COMPLETION REPORT



Company: Chesapeake Operating, Inc. Date: 9/29/2011 Time: 14:06:35 Page: 2
Field: Eddy Co. NM NAD: 83 Co-ordinate(NE) Reference: Site: Big Sinks 2-24-30 State 1H
Site: Big Sinks 2-24-30 State 1H Vertical (TVD) Reference: SITE 3490 0
Well: 2-24-30 State 1H Section (VS) Reference: Well (0.00N, 0.00E, 89.56Azi)
Wellpath: ST1 Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

MD	Incl	TVD	VS	Azim	N/S	E/W	ClsD	ClsA	DLS	Tool
ft	deg	ft	ft	deg	ft	ft	ft	deg	deg/100ft	
5600.00	1.03	5599.34	-19.23	296.30	-21.79	-19.06	28.95	221.18	0.06	Gyro
5800.00	0.93	5799.31	-22.35	289.87	-20.44	-22.20	30.18	227.36	0.07	Gyro
6000.00	0.71	5999.29	-25.02	291.66	-19.43	-24.88	31.57	232.00	0.11	Gyro
6200.00	0.64	6199.28	-27.27	278.72	-18.81	-27.13	33.01	235.27	0.08	Gyro
6400.00	0.82	6399.26	-29.68	245.09	-19.24	-29.53	35.25	236.92	0.23	Gyro
6600.00	1.41	6599.22	-32.96	233.00	-21.32	-32.80	39.12	236.97	0.32	Gyro
6800.00	1.66	6799.15	-37.05	226.40	-24.80	-36.86	44.43	236.07	0.15	Gyro
7000.00	1.66	6999.07	-41.08	221.12	-28.98	-40.86	50.10	234.65	0.08	Gyro
7200.00	1.79	7198.98	-45.32	227.49	-33.27	-45.07	56.02	233.56	0.12	Gyro
7400.00	1.86	7398.88	-49.82	221.74	-37.81	-49.53	62.31	232.65	0.10	Gyro
7600.00	2.00	7598.76	-54.43	223.61	-42.76	-54.10	68.96	231.68	0.08	Gyro
7800.00	2.12	7798.63	-59.45	224.06	-47.94	-59.08	76.08	230.94	0.06	Gyro
8000.00	1.94	7998.51	-64.75	232.84	-52.64	-64.35	83.14	230.71	0.18	Gyro
8200.00	1.21	8198.43	-69.55	259.88	-55.06	-69.13	88.38	231.46	0.51	Gyro
8350.40	2.06	8348.77	-73.80	276.96	-55.01	-73.37	91.71	233.14	0.65	Gyro
8414.00	2.40	8412.32	-76.21	285.50	-54.52	-75.79	93.36	234.27	0.75	Ryan MWD
8604.00	1.80	8602.20	-82.98	278.20	-53.03	-82.58	98.14	237.29	0.35	Ryan MWD
8700.00	1.90	8698.15	-86.07	268.90	-52.84	-85.66	100.65	238.33	0.33	Ryan MWD
8732.00	1.00	8730.14	-86.87	255.30	-52.92	-86.46	101.38	238.53	2.99	Ryan MWD
8764.00	3.00	8762.12	-86.43	121.50	-53.43	-86.02	101.26	238.15	11.76	Ryan MWD
8795.00	5.90	8793.03	-84.25	110.40	-54.41	-83.83	99.94	237.01	9.72	Ryan MWD
8827.00	6.30	8824.85	-80.98	80.90	-54.71	-80.56	97.38	235.82	9.76	Ryan MWD
8859.00	8.30	8856.59	-77.03	72.50	-53.74	-76.62	93.59	234.96	7.07	Ryan MWD
8890.00	11.70	8887.12	-71.86	74.10	-52.20	-71.46	88.50	233.85	11.00	Ryan MWD
8922.00	15.60	8918.21	-64.60	73.40	-50.08	-64.22	81.44	232.05	12.20	Ryan MWD
8954.00	18.10	8948.83	-55.64	75.70	-47.63	-55.27	72.96	229.25	8.08	Ryan MWD
8986.00	21.30	8978.95	-45.20	74.30	-44.82	-44.86	63.42	225.02	10.11	Ryan MWD
9017.00	25.10	9007.44	-33.41	74.90	-41.59	-33.09	53.14	218.51	12.28	Ryan MWD
9049.00	28.40	9036.01	-19.46	75.30	-37.89	-19.17	42.46	206.84	10.33	Ryan MWD
9080.00	31.40	9062.89	-4.47	75.60	-34.01	-4.21	34.27	187.06	9.69	Ryan MWD
9112.00	35.30	9089.61	-12.67	77.70	-29.96	12.90	32.62	156.70	12.71	Ryan MWD
9144.00	41.40	9114.70	-32.21	81.30	-26.39	32.42	41.80	129.15	20.29	Ryan MWD
9175.00	48.00	9136.72	53.82	82.80	-23.39	54.00	58.85	113.42	21.56	Ryan MWD
9207.00	55.70	9156.48	78.87	86.50	-21.09	79.03	81.80	104.94	25.72	Ryan MWD
9239.00	61.00	9173.26	106.08	88.80	-19.99	106.24	108.10	100.66	17.65	Ryan MWD
9270.00	63.00	9187.82	133.45	89.10	-19.49	133.60	135.02	98.30	6.51	Ryan MWD
9302.00	65.30	9201.77	162.25	89.10	-19.04	162.40	163.51	96.69	7.19	Ryan MWD
9334.00	68.10	9214.43	191.63	88.90	-18.52	191.78	192.67	95.52	8.77	Ryan MWD
9366.00	70.50	9225.74	221.56	88.90	-17.95	221.71	222.43	94.63	7.50	Ryan MWD
9397.00	73.60	9235.29	251.05	88.60	-17.30	251.19	251.78	93.94	10.04	Ryan MWD
9429.00	75.80	9243.73	281.90	87.70	-16.31	282.03	282.50	93.31	7.39	Ryan MWD
9461.00	78.30	9250.90	313.06	86.80	-14.81	313.18	313.53	92.71	8.28	Ryan MWD
9493.00	80.50	9256.79	344.47	86.30	-12.91	344.58	344.82	92.15	7.04	Ryan MWD
9524.00	82.80	9261.29	375.10	87.30	-11.20	375.20	375.36	91.71	8.08	Ryan MWD
9556.00	85.30	9264.61	406.90	87.70	-9.82	406.99	407.11	91.38	7.91	Ryan MWD
9588.00	86.60	9266.87	438.81	88.10	-8.65	438.89	438.97	91.13	4.25	Ryan MWD
9620.00	89.10	9268.07	470.78	88.20	-7.61	470.85	470.91	90.93	7.82	Ryan MWD
9651.00	89.00	9268.58	501.76	88.40	-6.69	501.83	501.87	90.76	0.72	Ryan MWD
9747.00	88.60	9270.59	597.71	87.90	-3.60	597.76	597.77	90.34	0.67	Ryan MWD
9842.00	88.80	9272.75	692.64	87.40	0.30	692.65	692.65	89.98	0.57	Ryan MWD
9937.00	88.60	9274.90	787.55	87.50	4.52	787.54	787.55	89.67	0.24	Ryan MWD
10032.00	88.20	9277.56	882.44	87.20	8.91	882.40	882.44	89.42	0.53	Ryan MWD



Ryan Energy Technologies

COMPLETION REPORT



Company: Chesapeake Operating, Inc. Date: 9/29/2011 Time: 14:06:35 Page: 3
Field: Eddy Co. NM NAD 83 Co-ordinate(NE) Reference: Site: Big Sinks 2-24-30 State 1H
Site: Big Sinks 2-24-30 State 1H Vertical (TVD) Reference: SITE 3490.0
Well: 2-24-30 State 1H Section (VS) Reference: Well (0.00N 0.00E 89.56Azi)
Wellpath: ST1 Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

MD ft	Incl deg	TVD ft	VS ft	Azim deg	N/S ft	E/W ft	ClsD ft	ClsA deg	DLS deg/100ft	Tool
10128.00	88.40	9280.40	978.36	89.20	11.93	978.30	978.37	89.30	2.09	Ryan MWD
10223.00	87.00	9284.22	1073.28	89.50	13.01	1073.22	1073.30	89.31	1.51	Ryan MWD
10318.00	86.60	9289.52	1168.14	89.10	14.16	1168.06	1168.15	89.31	0.59	Ryan MWD
10414.00	87.30	9294.63	1264.00	89.30	15.50	1263.92	1264.01	89.30	0.76	Ryan MWD
10509.00	88.40	9298.19	1358.92	88.80	17.08	1358.83	1358.94	89.28	1.27	Ryan MWD
10604.00	89.30	9300.10	1453.89	88.30	19.48	1453.78	1453.91	89.23	1.08	Ryan MWD
10699.00	89.30	9301.26	1548.84	87.60	22.88	1548.71	1548.88	89.15	0.74	Ryan MWD
10794.00	90.10	9301.76	1643.80	88.10	26.44	1643.64	1643.86	89.08	0.99	Ryan MWD
10889.00	90.40	9301.34	1738.75	87.50	30.09	1738.57	1738.83	89.01	0.71	Ryan MWD
10985.00	88.40	9302.35	1834.70	88.30	33.61	1834.50	1834.81	88.95	2.24	Ryan MWD
11080.00	87.70	9305.58	1929.63	88.60	36.17	1929.41	1929.75	88.93	0.80	Ryan MWD
11175.00	87.40	9309.64	2024.52	88.20	38.82	2024.28	2024.66	88.90	0.53	Ryan MWD
11271.00	86.90	9314.41	2120.39	89.40	40.83	2120.14	2120.53	88.90	1.35	Ryan MWD
11366.00	87.60	9318.97	2215.28	89.90	41.41	2215.03	2215.42	88.93	0.91	Ryan MWD
11461.00	88.90	9321.87	2310.23	89.80	41.66	2309.98	2310.36	88.97	1.37	Ryan MWD
11557.00	89.00	9323.63	2406.21	88.30	43.25	2405.95	2406.34	88.97	1.57	Ryan MWD
11652.00	90.10	9324.38	2501.20	89.10	45.41	2500.92	2501.33	88.96	1.43	Ryan MWD
11747.00	90.30	9324.05	2596.19	90.20	45.99	2595.92	2596.32	88.99	1.18	Ryan MWD
11842.00	90.10	9323.71	2691.19	89.70	46.07	2690.92	2691.31	89.02	0.57	Ryan MWD
11938.00	91.00	9322.79	2787.18	88.90	47.24	2786.90	2787.30	89.03	1.25	Ryan MWD
12033.00	89.60	9322.30	2882.18	90.00	48.16	2881.89	2882.30	89.04	1.87	Ryan MWD
12129.00	89.10	9323.39	2978.17	88.40	49.50	2977.87	2978.29	89.05	1.75	Ryan MWD
12225.00	89.50	9324.56	3074.15	91.10	49.91	3073.86	3074.26	89.07	2.84	Ryan MWD
12320.00	89.70	9325.22	3169.11	91.30	47.92	3168.83	3169.20	89.13	0.30	Ryan MWD
12415.00	89.40	9325.97	3264.07	90.90	46.10	3263.81	3264.14	89.19	0.53	Ryan MWD
12510.00	89.00	9327.29	3359.04	90.60	44.86	3358.80	3359.10	89.23	0.53	Ryan MWD
12605.00	88.60	9329.28	3454.01	90.50	43.95	3453.77	3454.05	89.27	0.43	Ryan MWD
12700.00	88.00	9332.10	3548.96	90.00	43.53	3548.73	3548.99	89.30	0.82	Ryan MWD
12796.00	87.60	9335.79	3644.88	89.30	44.12	3644.65	3644.92	89.31	0.84	Ryan MWD
12891.00	90.30	9337.53	3739.86	89.70	44.95	3739.62	3739.89	89.31	2.87	Ryan MWD
12986.00	89.10	9338.03	3834.86	89.40	45.69	3834.62	3834.89	89.32	1.30	Ryan MWD
13081.00	89.10	9339.52	3929.84	89.20	46.85	3929.60	3929.88	89.32	0.21	Ryan MWD
13177.00	88.60	9341.44	4025.82	88.90	48.44	4025.57	4025.86	89.31	0.61	Ryan MWD
13272.00	87.50	9344.68	4120.76	90.90	48.61	4120.51	4120.79	89.32	2.40	Ryan MWD
13367.00	85.70	9350.31	4215.56	90.90	47.12	4215.32	4215.59	89.36	1.89	Ryan MWD
13462.00	84.00	9358.84	4310.16	90.20	46.21	4309.93	4310.18	89.39	1.93	Ryan MWD
13557.00	85.10	9367.86	4404.73	89.40	46.54	4404.50	4404.74	89.39	1.43	Ryan MWD
13653.00	84.10	9376.90	4500.30	89.10	47.79	4500.06	4500.32	89.39	1.09	Ryan MWD
13748.00	84.60	9386.25	4594.83	89.90	48.62	4594.60	4594.85	89.39	0.99	Ryan MWD
13843.00	83.70	9395.93	4689.34	89.80	48.87	4689.10	4689.36	89.40	0.95	Ryan MWD
13938.00	83.90	9406.19	4783.78	90.20	48.87	4783.54	4783.79	89.41	0.47	Ryan MWD
14033.00	82.10	9417.77	4878.06	90.70	48.13	4877.83	4878.07	89.43	1.97	Ryan MWD
14128.00	83.30	9429.84	4972.27	90.20	47.39	4972.05	4972.28	89.45	1.37	Ryan MWD
14154.00	83.90	9432.74	4998.11	90.20	47.30	4997.89	4998.12	89.46	2.31	Ryan MWD
14209.00	83.90	9438.58	5052.79	90.20	47.10	5052.58	5052.80	89.47	0.00	Projection



Patterson 62
Big Sinks 2-24-30 State 1H
5051