



Ryan Energy Directional Drilling Report

Field: Eddy Co, NM NAD 83
Site: PLU Pierce Canyon 17 FED 1H
Well: Pierce Canyon 17 FED 1H
Wellpath: 17 FED 1H

Prepared For:

Chesapeake Operating, Inc.



Ryan Energy Technology

19510 Oil Center Blvd
Houston, TX 77073
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www.ryanenergy.com



Chesapeake Operating, Inc.
Field: Eddy Co, NM NAD 83
Site: PLU Pierce Canyon 17 FED 1H
Well: Pierce Canyon 17 FED 1H
Wellpath: 17 FED 1H



Azimuths to Grid North
True North: -0.23°
Magnetic North: 7.79°
Magnetic Field
Strength: 48826nT
Dip Angle: 50.11°
Date: 11/19/2008
Model: igr2005

SITE DETAILS

PLU Pierce Canyon 17 FED 1H
Section 17 T25S, R30E
Eddy Co, NM
Site Centre Northing: 409099.61
Easting: 676748.31
Ground Level: 3237.00
Positional Uncertainty: 0.00
Convergence: 0.23

FIELD DETAILS

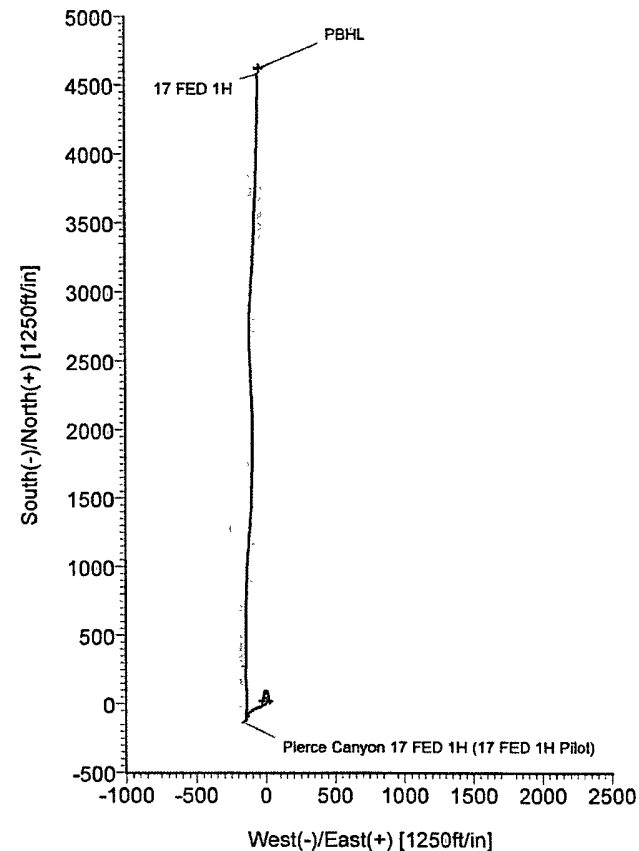
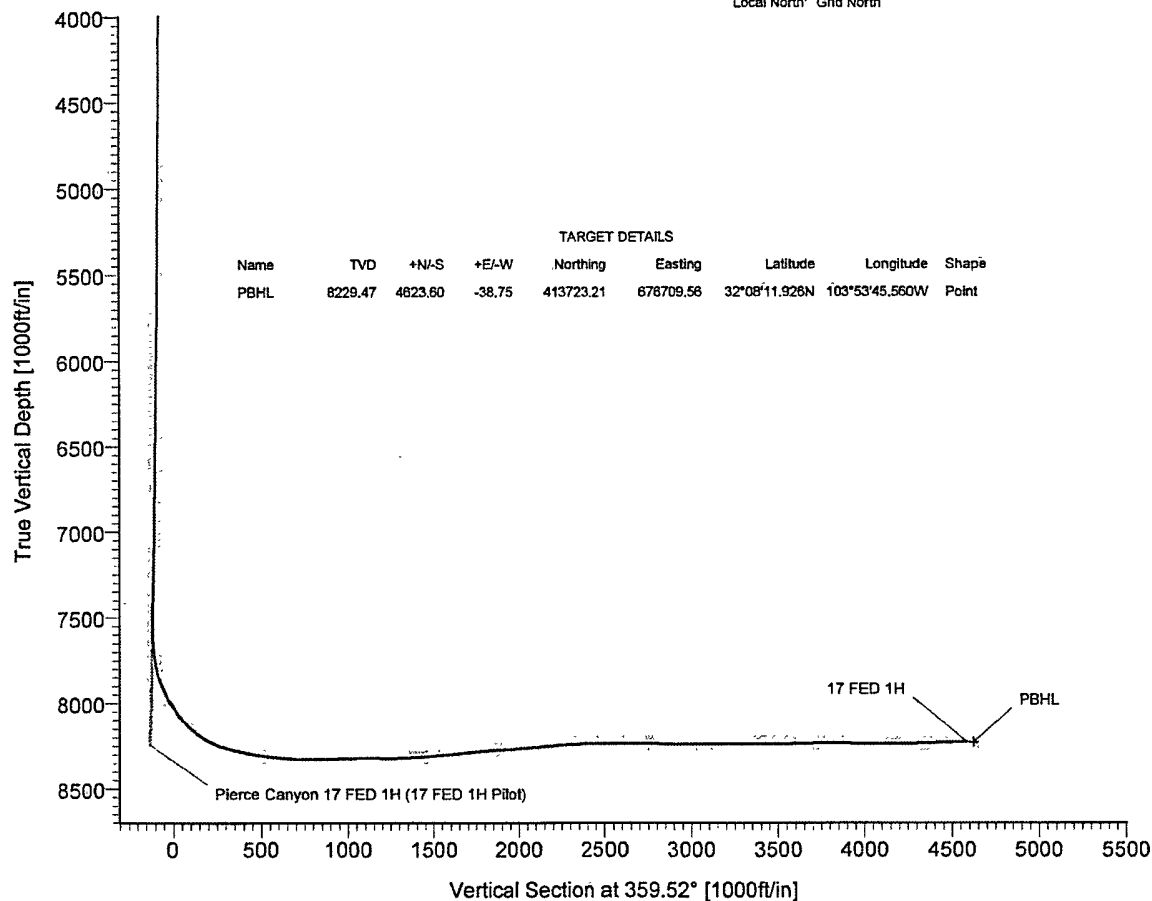
Eddy Co, NM NAD 83
USA
Geodetic System: US State Plane Coordinate System 1983
Ellipsoid: GRS 1980
Zone: New Mexico, Eastern Zone
Magnetic Model: igr2005
System Datum: Mean Sea Level
Local North: Grid North

WELLPATH DETAILS

17 FED 1H
Rig: Capstar 32
Ref. Datum: Est. RKB 3255.00ft
V. Section Angle: Origin +N/-S 0.00° Origin +E/-W 0.00° Starting From TVD 0.00°
359.52°

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL	8229.47	4823.60	-38.75	413723.21	676709.58	32°08'11.926N	103°53'45.560W	Point



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Wellpath: Pierce Canyon 17 FED 1H17 FED 1H
Created By: Maria Carr Date: 11/25/2008
Checked: _____ Date: _____
Reviewed: _____ Date: _____
Approved: _____ Date: _____



Ryan Energy Technologies Survey Report



Company: Chesapeake Operating, Inc.		Date: 11/25/2008	Time: 10:26:58	Page: 1
Field: Eddy Co, NM NAD 83	Co-ordinate(NE) Reference: Site: PLU Pierce Canyon 17 FED 1H			
Site: PLU Pierce Canyon 17 FED 1H	Vertical (TVD) Reference: Est. RKB 3255.0			
Well: Pierce Canyon 17 FED 1H	Section (VS) Reference: Well (0.00N,0.00E,359.52Az)			
Wellpath: 17 FED 1H	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: igrf2005

Site: PLU Pierce Canyon 17 FED 1H Section 17 T25S, R30E Eddy Co, NM		
Site Position:	Northing: 409099.61 ft	Latitude: 32 7 26.170 N
From: Map	Easting: 676748.31 ft	Longitude: 103 53 45.327 W
Position Uncertainty: 0.00 ft		North Reference: Grid
Ground Level: 3237.00 ft		Grid Convergence: 0.23 deg

Well: Pierce Canyon 17 FED 1H		Slot Name:	
Well Position:	+N/-S 0.00 ft	Northing: 409099.61 ft	Latitude: 32 7 26.170 N
	+E/-W 0.00 ft	Easting: 676748.31 ft	Longitude: 103 53 45.327 W
Position Uncertainty: 0.00 ft			

Wellpath: 17 FED 1H		Drilled From: Surface	
Current Datum: Est. RKB	Height 3255.00 ft	Tie-on Depth: 0.00 ft	
Magnetic Data: 11/19/2008		Above System Datum: Mean Sea Level	
Field Strength: 48828 nT		Declination: 8.02 deg	
Vertical Section: Depth From (TVD)	+N/-S	Mag Dip Angle: 60.11 deg	
ft	ft	+E/-W	Direction
		ft	deg
0.00	0.00	0.00	359.52

Survey Program for Definitive Wellpath			
Date: 11/25/2008		Validated: No	
Actual From To		Version: 0	
ft	ft	Toolcode	Tool Name
200.00	7400.00	Survey #1 (200.00-7400.00)	Gyro MS
7545.00	12695.00	Survey #2 (7545.00-12695.00)	MWD Survey
12740.00	12740.00	Survey #3 (12740.00-12740.00)	Projection

Survey										
MD	Incl	Azim	TVD	+N/-S	+E/-W	VS	DLS	Bulld	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	0.25	325.35	200.00	0.36	-0.25	0.36	0.12	0.12	0.00	Gyro
400.00	0.50	250.45	400.00	0.43	-1.32	0.44	0.25	0.12	-37.45	Gyro
600.00	1.75	243.55	599.95	-1.23	-4.88	-1.19	0.63	0.62	-3.45	Gyro
800.00	2.75	246.63	799.80	-4.49	-12.01	-4.39	0.50	0.50	1.54	Gyro
1000.00	3.00	240.72	999.55	-8.95	-20.98	-8.78	0.19	0.12	-2.95	Gyro
1200.00	2.75	239.83	1199.29	-13.92	-29.70	-13.67	0.13	-0.12	-0.44	Gyro
1400.00	2.00	238.95	1399.12	-18.13	-36.83	-17.83	0.38	-0.37	-0.44	Gyro
1600.00	1.75	242.05	1599.01	-21.37	-42.52	-21.01	0.13	-0.12	1.55	Gyro
1800.00	2.00	250.15	1798.91	-23.98	-48.50	-23.58	0.18	0.12	4.05	Gyro
2000.00	2.25	256.25	1998.77	-26.10	-55.60	-25.63	0.17	0.12	3.05	Gyro
2200.00	2.50	256.60	2198.60	-28.04	-63.65	-27.51	0.13	0.12	0.17	Gyro
2400.00	2.00	242.71	2398.44	-30.66	-71.00	-30.06	0.37	-0.25	-6.94	Gyro
2600.00	4.00	238.76	2598.16	-35.87	-80.07	-35.20	1.00	1.00	-1.97	Gyro
2800.00	6.25	238.76	2797.35	-45.14	-95.34	-44.34	1.12	1.12	0.00	Gyro
3000.00	5.50	238.90	2996.30	-55.74	-112.86	-54.79	0.38	-0.37	0.07	Gyro
3200.00	3.25	233.08	3195.70	-64.09	-125.60	-63.04	1.15	-1.12	-2.91	Gyro
3400.00	1.25	205.13	3395.54	-69.48	-131.06	-68.37	1.11	-1.00	-13.97	Gyro
3600.00	1.25	154.14	3595.50	-73.41	-131.03	-72.31	0.54	0.00	-25.49	Gyro
3800.00	0.50	170.13	3795.47	-76.24	-129.93	-75.14	0.39	-0.37	7.99	Gyro
4000.00	0.75	155.14	3995.46	-78.28	-129.23	-77.20	0.15	0.12	-7.49	Gyro



Ryan Energy Technologies Survey Report



Company: Chesapeake Operating, Inc. Date: 11/25/2008 Time: 10:26:58 Page: 2
Field: Eddy Co, NM NAD 83 Co-ordinate(NE) Reference: Site: PLU Pierce Canyon 17 FED 1H
Site: PLU Pierce Canyon 17 FED 1H Vertical (TVD) Reference: Est. RKB 3255.0
Well: Pierce Canyon 17 FED 1H Section (VS) Reference: Well (0.00N,0.00E,359.52Azi)
Wellpath: 17.FED.1H 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
4200.00	0.25	167.14	4195.45	-79.90	-128.58	-78.82	0.25	-0.25	6.00	Gyro
4400.00	0.50	152.14	4395.45	-81.09	-128.08	-80.02	0.13	0.12	-7.50	Gyro
4600.00	0.50	192.14	4595.44	-82.72	-127.85	-81.64	0.17	0.00	20.00	Gyro
4800.00	0.50	218.14	4795.44	-84.26	-128.58	-83.18	0.11	0.00	13.00	Gyro
5000.00	0.75	237.14	4995.42	-85.65	-130.21	-84.56	0.16	0.12	9.50	Gyro
5200.00	0.75	235.14	5195.41	-87.11	-132.39	-86.00	0.01	0.00	-1.00	Gyro
5400.00	0.75	230.75	5395.39	-88.69	-134.48	-87.56	0.03	0.00	-2.19	Gyro
5600.00	0.50	216.35	5595.38	-90.22	-136.01	-89.08	0.15	-0.12	-7.20	Gyro
5800.00	1.00	214.95	5795.36	-92.35	-137.52	-91.20	0.25	0.25	-0.70	Gyro
6000.00	1.25	206.55	5995.32	-95.74	-139.50	-94.56	0.15	0.12	-4.20	Gyro
6200.00	1.00	219.15	6195.28	-99.04	-141.58	-97.85	0.18	-0.12	6.30	Gyro
6400.00	1.00	213.75	6395.25	-101.84	-143.65	-100.64	0.05	0.00	-2.70	Gyro
6600.00	0.50	163.36	6595.24	-104.13	-144.37	-102.92	0.39	-0.25	-25.19	Gyro
6800.00	0.50	177.96	6795.23	-105.84	-144.09	-104.63	0.06	0.00	7.30	Gyro
7000.00	0.75	159.56	6995.22	-107.94	-143.60	-106.73	0.16	0.12	-9.20	Gyro
7200.00	1.25	178.16	7195.19	-111.35	-143.07	-110.14	0.29	0.25	9.30	Gyro
7400.00	1.25	177.77	7395.14	-115.71	-142.92	-114.50	0.00	0.00	-0.19	Gyro
7545.00	0.50	237.50	7540.12	-117.63	-143.39	-116.42	0.75	-0.52	41.19	MWD
7587.00	0.60	292.30	7582.12	-117.64	-143.75	-116.43	1.22	0.24	130.48	MWD
7629.00	1.90	6.70	7624.11	-116.87	-143.87	-115.66	4.36	3.10	177.14	MWD
7671.00	4.50	12.40	7666.04	-114.57	-143.43	-113.36	6.23	6.19	13.57	MWD
7713.00	6.60	4.90	7707.84	-110.55	-142.87	-109.35	5.28	5.00	-17.86	MWD
7755.00	9.40	359.50	7749.43	-104.71	-142.70	-103.52	6.90	6.67	-12.86	MWD
7797.00	12.50	359.20	7790.66	-96.74	-142.79	-95.54	7.38	7.38	-0.71	MWD
7839.00	16.40	1.60	7831.33	-86.26	-142.69	-85.06	9.39	9.29	5.71	MWD
7881.00	19.30	1.10	7871.30	-73.39	-142.39	-72.20	6.91	6.90	-1.19	MWD
7923.00	22.60	1.70	7910.52	-58.38	-142.02	-57.19	7.87	7.86	1.43	MWD
7965.00	25.60	3.00	7948.85	-41.25	-141.30	-40.07	7.25	7.14	3.10	MWD
8007.00	28.60	2.80	7986.24	-22.14	-140.34	-20.97	7.15	7.14	-0.48	MWD
8049.00	30.60	2.80	8022.76	-1.42	-139.32	-0.26	4.76	4.76	0.00	MWD
8091.00	34.00	2.80	8058.25	20.99	-138.23	22.15	8.10	8.10	0.00	MWD
8133.00	38.20	359.90	8092.18	45.72	-137.67	46.87	10.79	10.00	-6.90	MWD
8174.00	43.00	357.20	8123.31	72.38	-138.38	73.53	12.46	11.71	-6.59	MWD
8216.00	47.80	355.80	8152.79	102.21	-140.22	103.39	11.67	11.43	-3.33	MWD
8258.00	52.70	354.70	8179.64	134.38	-142.90	135.58	11.84	11.67	-2.62	MWD
8300.00	57.50	356.60	8203.66	168.72	-145.50	169.93	12.01	11.43	4.52	MWD
8342.00	62.00	359.00	8224.82	204.96	-146.87	206.18	11.80	10.71	5.71	MWD
8384.00	67.10	1.40	8242.86	242.87	-146.72	244.09	13.19	12.14	5.71	MWD
8426.00	72.30	2.70	8257.43	282.22	-145.31	283.43	12.72	12.38	3.10	MWD
8468.00	75.30	359.90	8269.15	322.53	-144.40	323.73	9.59	7.14	-6.67	MWD
8510.00	75.30	359.10	8279.80	363.16	-144.76	364.36	1.84	0.00	-1.90	MWD
8552.00	77.10	359.20	8289.82	403.94	-145.36	405.14	4.29	4.29	0.24	MWD
8594.00	79.70	359.70	8298.27	445.07	-145.76	446.28	6.30	6.19	1.19	MWD
8636.00	81.60	0.20	8305.09	486.51	-145.79	487.72	4.67	4.52	1.19	MWD
8677.00	82.10	0.30	8310.90	527.10	-145.61	528.30	1.24	1.22	0.24	MWD
8719.00	84.50	0.30	8315.80	568.81	-145.40	570.01	5.71	5.71	0.00	MWD
8761.00	84.70	0.30	8319.75	610.62	-145.18	611.82	0.48	0.48	0.00	MWD
8803.00	86.00	0.60	8323.16	652.48	-144.85	653.67	3.18	3.10	0.71	MWD
8845.00	87.50	1.30	8325.54	694.41	-144.15	695.59	3.94	3.57	1.67	MWD
8887.00	88.60	1.90	8326.97	736.36	-142.98	737.54	2.98	2.62	1.43	MWD
8929.00	89.40	1.80	8327.70	778.34	-141.62	779.50	1.92	1.90	-0.24	MWD
8971.00	90.80	1.90	8327.63	820.31	-140.27	821.46	3.34	3.33	0.24	MWD
9012.00	91.40	2.30	8326.84	861.28	-138.77	862.41	1.76	1.46	0.98	MWD
9054.00	91.50	2.30	8325.78	903.23	-137.08	904.35	0.24	0.24	0.00	MWD



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Field: Eddy Co, NM NAD 83 Co-ordinate(NE) Reference: Site: PLU Pierce Canyon 17 FED 1H
Site: PLU Pierce Canyon 17 FED 1H Vertical (TVD) Reference: Est. RKB 3255.0
Well: Pierce Canyon 17 FED 1H Section (VS) Reference: Well (0.00N,0.00E,359.52Az)
Wellpath: 17 FED 1H 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
9097.00	91.40	1.40	8324.69	946.19	-135.69	947.30	2.11	-0.23	-2.09	MWD
9139.00	91.70	2.00	8323.56	988.16	-134.45	989.25	1.60	0.71	1.43	MWD
9181.00	92.30	2.80	8322.09	1030.10	-132.69	1031.17	2.38	1.43	1.90	MWD
9223.00	91.30	3.30	8320.77	1072.02	-130.46	1073.07	2.66	-2.38	1.19	MWD
9265.00	89.00	4.40	8320.66	1113.92	-127.64	1114.95	6.07	-5.48	2.62	MWD
9306.00	89.40	4.30	8321.23	1154.80	-124.53	1155.80	1.01	0.98	-0.24	MWD
9348.00	89.10	4.80	8321.78	1196.66	-121.20	1197.63	1.39	-0.71	1.19	MWD
9390.00	89.80	5.10	8322.19	1238.50	-117.57	1239.44	1.81	1.67	0.71	MWD
9449.00	91.80	5.50	8321.36	1297.24	-112.12	1298.13	3.46	3.39	0.68	MWD
9491.00	92.90	4.70	8319.64	1339.04	-108.39	1339.90	3.24	2.62	-1.90	MWD
9533.00	93.20	2.50	8317.40	1380.89	-105.76	1381.73	5.28	0.71	-5.24	MWD
9575.00	93.30	2.50	8315.02	1422.78	-103.93	1423.61	0.24	0.24	0.00	MWD
9617.00	94.40	1.30	8312.20	1464.67	-102.54	1465.47	3.87	2.62	-2.86	MWD
9659.00	94.50	1.80	8308.94	1506.52	-101.41	1507.32	1.21	0.24	1.19	MWD
9701.00	95.20	2.00	8305.39	1548.35	-100.02	1549.13	1.73	1.67	0.48	MWD
9743.00	96.00	2.40	8301.30	1590.12	-98.42	1590.89	2.13	1.90	0.95	MWD
9785.00	96.40	1.70	8296.76	1631.84	-96.92	1632.60	1.91	0.95	-1.67	MWD
9826.00	95.80	0.70	8292.40	1672.60	-96.07	1673.35	2.83	-1.46	-2.44	MWD
9868.00	96.70	1.20	8287.83	1714.35	-95.38	1715.09	2.45	2.14	1.19	MWD
9910.00	95.80	1.30	8283.26	1756.09	-94.47	1756.82	2.16	-2.14	0.24	MWD
9951.00	94.20	1.00	8279.68	1796.92	-93.65	1797.64	3.97	-3.90	-0.73	MWD
9993.00	93.60	1.20	8276.83	1838.82	-92.84	1839.53	1.51	-1.43	0.48	MWD
10035.00	93.60	0.40	8274.19	1880.73	-92.26	1881.44	1.90	0.00	-1.90	MWD
10119.00	94.30	359.80	8268.40	1964.53	-92.11	1965.23	1.10	0.83	-0.71	MWD
10161.00	94.80	359.60	8265.07	2006.40	-92.33	2007.10	1.28	1.19	-0.48	MWD
10203.00	95.50	359.40	8261.30	2048.22	-92.69	2048.93	1.73	1.67	-0.48	MWD
10288.00	94.70	357.60	8253.75	2132.85	-94.91	2133.57	2.31	-0.94	-2.12	MWD
10371.00	95.10	357.60	8246.66	2215.48	-98.37	2216.22	0.48	0.48	0.00	MWD
10455.00	93.00	357.50	8240.72	2299.19	-101.96	2299.96	2.50	-2.50	-0.12	MWD
10539.00	91.30	358.20	8237.57	2383.07	-105.10	2383.86	2.19	-2.02	0.83	MWD
10623.00	90.70	357.80	8236.11	2467.00	-108.04	2467.82	0.86	-0.71	-0.48	MWD
10706.00	90.10	357.50	8235.53	2549.93	-111.44	2550.77	0.81	-0.72	-0.36	MWD
10789.00	89.40	358.60	8235.89	2632.88	-114.26	2633.74	1.57	-0.84	1.33	MWD
10873.00	89.60	359.70	8236.62	2716.86	-115.51	2717.74	1.33	0.24	1.31	MWD
10957.00	89.20	1.70	8237.50	2800.85	-114.48	2801.71	2.43	-0.48	2.38	MWD
11040.00	89.20	3.60	8238.66	2883.75	-110.65	2884.57	2.29	0.00	2.29	MWD
11124.00	89.50	3.40	8239.61	2967.59	-105.52	2968.37	0.43	0.36	-0.24	MWD
11207.00	90.60	3.80	8239.54	3050.42	-100.31	3051.15	1.41	1.33	0.48	MWD
11291.00	89.10	3.80	8239.76	3134.23	-94.74	3134.92	1.79	-1.79	0.00	MWD
11375.00	89.50	3.20	8240.79	3218.07	-89.61	3218.71	0.86	0.48	-0.71	MWD
11458.00	90.30	3.30	8240.93	3300.94	-84.91	3301.53	0.97	0.96	0.12	MWD
11542.00	90.30	2.70	8240.49	3384.82	-80.51	3385.37	0.71	0.00	-0.71	MWD
11626.00	89.80	0.50	8240.42	3468.78	-78.17	3469.31	2.69	-0.60	-2.62	MWD
11710.00	91.70	2.30	8239.32	3552.74	-76.11	3553.25	3.12	2.26	2.14	MWD
11794.00	91.50	2.60	8236.97	3636.63	-72.52	3637.11	0.43	-0.24	0.36	MWD
11877.00	92.00	3.00	8234.44	3719.49	-68.47	3719.94	0.77	0.60	0.48	MWD
11961.00	90.00	2.10	8232.97	3803.39	-64.74	3803.80	2.61	-2.38	-1.07	MWD
12045.00	88.40	1.80	8234.15	3887.33	-61.88	3887.71	1.94	-1.90	-0.36	MWD
12129.00	89.20	1.10	8235.91	3971.29	-59.75	3971.65	1.27	0.95	-0.83	MWD
12213.00	89.50	1.40	8236.86	4055.26	-57.92	4055.60	0.51	0.36	0.36	MWD
12297.00	90.30	1.50	8237.01	4139.23	-55.79	4139.55	0.96	0.95	0.12	MWD
12380.00	90.60	1.40	8236.35	4222.20	-53.69	4222.51	0.38	0.36	-0.12	MWD
12464.00	91.40	1.00	8234.89	4306.17	-51.94	4306.46	1.06	0.95	-0.48	MWD



Ryan Energy Technologies Survey Report



Company: Chesapeake Operating, Inc. Date: 11/25/2008 Time: 10:26:58 Page: 4
Field: Eddy Co, NM NAD 83 Co-ordinate(NE) Reference: Site: PLU Pierce Canyon 17 FED 1H
Site: PLU Pierce Canyon 17 FED 1H Vertical (TVD) Reference: Est. RKB 3255.0
Well: Pierce Canyon 17 FED 1H Section (VS) Reference: Well (0.00N,0.00E,359.52Azi)
Wellpath: 17 FED 1H 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
12548.00	92.20	1.20	8232.25	4390.11	-50.32	4390.38	0.98	0.95	0.24	MWD
12632.00	91.90	0.20	8229.24	4474.05	-49.30	4474.31	1.24	-0.36	-1.19	MWD
12695.00	91.20	358.90	8227.54	4537.03	-49.79	4537.28	2.34	-1.11	-2.06	MWD
12740.00	91.20	358.90	8226.60	4582.01	-50.66	4582.27	0.00	0.00	0.00	Projection



Ryan Energy Technologies COMPLETION REPORT



Company:	Chesapeake Operating, Inc.	Date:	11/25/2008	Time:	10:27:41	Page:	1
Field:	Eddy Co, NM NAD 83	Co-ordinate(NE) Reference:	Site: PLU Pierce Canyon 17 FED 1H	Vertical (TVD) Reference:	Est RKB 3255.0		
Site:	PLU Pierce Canyon 17 FED 1H	Section (VS) Reference:	Well (0.00N,0.00E,359.52Azi)	Survey Calculation Method:	Minimum Curvature	Db:	Sybase
Well:	Pierce Canyon 17 FED 1H						
Wellpath:	17 FED 1H						

Field: Eddy Co, NM NAD 83

USA
Map System: US State Plane Coordinate System 1983
Geo Datum: GRS 1980
Sys Datum: Mean Sea Level

Map Zone: New Mexico, Eastern Zone
Coordinate System: Site Centre
Geomagnetic Model: igrf2005

Site: PLU Pierce Canyon 17 FED 1H
Section 17 T25S, R30E
Eddy Co, NM

Site Position:	Northing:	409099.61 ft	Latitude:	32 7 26.170 N
From: Map	Easting:	676748.31 ft	Longitude:	103 53 45.327 W
Position Uncertainty:	0.00 ft		North Reference:	Grid
Ground Level:	3237.00 ft		Grid Convergence:	0.23 deg

Well: Pierce Canyon 17 FED 1H

Slot Name:

Well Position:	+N/-S	0.00 ft	Northing:	409099.61 ft	Latitude:	32 7 26.170 N
	+E/-W	0.00 ft	Easting:	676748.31 ft	Longitude:	103 53 45.327 W
Position Uncertainty:	0.00 ft					

Wellpath: 17 FED 1H

Current Datum:	Est RKB	Height	3255.00 ft	Drilled From:	Surface
Magnetic Data:	11/19/2008			Tie-on Depth:	0.00 ft
Field Strength:	48828 nT			Above System Datum:	Mean Sea Level
Vertical Section:	Depth From (TVD)	+N/-S	ft	Declination:	8.02 deg
		+E/-W	ft	Mag Dip Angle:	60.11 deg
				Direction	deg
	0.00	0.00	0.00		359.52

Survey Program for Definitive Wellpath

Date:	11/25/2008	Validated:	No	Version:	0
Actual From	To	Survey		Toolcode	Tool Name
ft	ft				
200.00	7400.00	Survey #1 (200.00-7400.00)		Gyro	Gyro MS
7545.00	12695.00	Survey #2 (7545.00-12695.00)		MWD	MWD Survey
12740.00	12740.00	Survey #3 (12740.00-12740.00)		Projection	Projection

Survey

MD	Incl	TVD	VS	Azim	N/S	EW	ClsD	ClsA	DLS	TOOL TYPE
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	0.25	200.00	0.36	325.35	0.36	-0.25	0.44	325.35	0.12	Gyro
400.00	0.50	400.00	0.44	250.45	0.43	-1.32	1.39	287.90	0.25	Gyro
600.00	1.75	599.95	-1.19	243.55	-1.23	-4.88	5.03	255.88	0.63	Gyro
800.00	2.75	799.80	-4.39	246.63	-4.49	-12.01	12.83	249.51	0.50	Gyro
1000.00	3.00	999.55	-8.78	240.72	-8.95	-20.98	22.81	246.89	0.19	Gyro
1200.00	2.75	1199.29	-13.67	239.83	-13.92	-29.70	32.80	244.88	0.13	Gyro
1400.00	2.00	1399.12	-17.83	238.95	-18.13	-36.83	41.06	243.79	0.38	Gyro
1600.00	1.75	1599.01	-21.01	242.05	-21.37	-42.52	47.59	243.32	0.13	Gyro
1800.00	2.00	1798.91	-23.58	250.15	-23.98	-48.50	54.11	243.69	0.18	Gyro
2000.00	2.25	1998.77	-25.63	256.25	-26.10	-55.60	61.42	244.85	0.17	Gyro
2200.00	2.50	2198.60	-27.51	256.60	-28.04	-63.65	69.56	246.22	0.13	Gyro
2400.00	2.00	2398.44	-30.06	242.71	-30.66	-71.00	77.33	246.65	0.37	Gyro
2600.00	4.00	2598.16	-35.20	238.76	-35.87	-80.07	87.74	245.86	1.00	Gyro
2800.00	6.25	2797.35	-44.34	238.76	-45.14	-95.34	105.49	244.66	1.12	Gyro
3000.00	5.50	2996.30	-54.79	238.90	-55.74	-112.86	125.87	243.72	0.38	Gyro
3200.00	3.25	3195.70	-63.04	233.08	-64.09	-125.60	141.01	242.96	1.15	Gyro
3400.00	1.25	3395.54	-68.37	205.13	-69.48	-131.06	148.33	242.07	1.11	Gyro
3600.00	1.25	3595.50	-72.31	154.14	-73.41	-131.03	150.20	240.74	0.54	Gyro
3800.00	0.50	3795.47	-75.14	170.13	-76.24	-129.93	150.64	239.60	0.39	Gyro
4000.00	0.75	3995.46	-77.20	155.14	-78.28	-129.23	151.09	238.79	0.15	Gyro



Ryan Energy Technologies COMPLETION REPORT



Company: Chesapeake Operating, Inc.	Date: 11/25/2008	Time: 10:27:41	Page: 2
Field: Eddy Co. NM NAD 83	Co-ordinate(NE) Reference:	Site: PLU Pierce Canyon 17 FED 1H	
Site: PLU Pierce Canyon 17 FED 1H	Vertical (TVD) Reference:	Est. RKB 3255.0	
Well: Pierce Canyon 17 FED 1H	Section (VS) Reference:	Well (0.00N,0.00E,359.52Azi)	
Wellpath: 17 FED 1H	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 TYPE
4200.00	0.25	4195.45	-78.82	167.14	-79.90	-128.58	151.38	238.14	0.25	Gyro
4400.00	0.50	4395.45	-80.02	152.14	-81.09	-128.08	151.59	237.66	0.13	Gyro
4600.00	0.50	4595.44	-81.64	192.14	-82.72	-127.85	152.28	237.10	0.17	Gyro
4800.00	0.50	4795.44	-83.18	218.14	-84.26	-128.58	153.72	236.76	0.11	Gyro
5000.00	0.75	4995.42	-84.56	237.14	-85.65	-130.21	155.86	236.66	0.16	Gyro
5200.00	0.75	5195.41	-86.00	235.14	-87.11	-132.39	158.48	236.65	0.01	Gyro
5400.00	0.75	5395.39	-87.56	230.75	-88.69	-134.48	161.09	236.59	0.03	Gyro
5600.00	0.50	5595.38	-89.08	216.35	-90.22	-136.01	163.21	236.44	0.15	Gyro
5800.00	1.00	5795.36	-91.20	214.95	-92.35	-137.52	165.66	236.12	0.25	Gyro
6000.00	1.25	5995.32	-94.56	206.55	-95.74	-139.50	169.19	235.54	0.15	Gyro
6200.00	1.00	6195.28	-97.85	219.15	-99.04	-141.58	172.78	235.03	0.18	Gyro
6400.00	1.00	6395.25	-100.64	213.75	-101.84	-143.65	176.09	234.66	0.05	Gyro
6600.00	0.50	6595.24	-102.92	163.36	-104.13	-144.37	178.00	234.20	0.39	Gyro
6800.00	0.50	6795.23	-104.63	177.96	-105.84	-144.09	178.78	233.70	0.06	Gyro
7000.00	0.75	6995.22	-106.73	159.56	-107.94	-143.60	179.64	233.07	0.16	Gyro
7200.00	1.25	7195.19	-110.14	178.16	-111.35	-143.07	181.29	232.11	0.29	Gyro
7400.00	1.25	7395.14	-114.50	177.77	-115.71	-142.92	183.88	231.01	0.00	Gyro
7545.00	0.50	7540.12	-116.42	237.50	-117.63	-143.39	185.46	230.64	0.75	MWD
7587.00	0.60	7582.12	-116.43	292.30	-117.64	-143.75	185.75	230.70	1.22	MWD
7629.00	1.90	7624.11	-115.66	6.70	-116.87	-143.87	185.35	230.91	4.36	MWD
7671.00	4.50	7666.04	-113.36	12.40	-114.57	-143.43	183.57	231.38	6.23	MWD
7713.00	6.60	7707.84	-109.35	4.90	-110.55	-142.87	180.65	232.27	5.28	MWD
7755.00	9.40	7749.43	-103.52	359.50	-104.71	-142.70	177.00	233.73	6.90	MWD
7797.00	12.50	7790.66	-95.54	359.20	-96.74	-142.79	172.47	235.88	7.38	MWD
7839.00	16.40	7831.33	-85.06	1.60	-86.26	-142.69	166.74	238.84	9.39	MWD
7881.00	19.30	7871.30	-72.20	1.10	-73.39	-142.39	160.19	242.73	6.91	MWD
7923.00	22.60	7910.52	-57.19	1.70	-58.38	-142.02	153.55	247.65	7.87	MWD
7965.00	25.60	7948.85	-40.07	3.00	-41.25	-141.30	147.20	253.73	7.25	MWD
8007.00	28.60	7986.24	-20.97	2.80	-22.14	-140.34	142.07	261.03	7.15	MWD
8049.00	30.60	8022.76	-0.26	2.80	-1.42	-139.32	139.33	269.41	4.76	MWD
8091.00	34.00	8058.25	22.15	2.80	20.99	-138.23	139.81	278.63	8.10	MWD
8133.00	38.20	8092.18	46.87	359.90	45.72	-137.67	145.07	288.37	10.79	MWD
8174.00	43.00	8123.31	73.53	357.20	72.38	-138.38	156.16	297.61	12.46	MWD
8216.00	47.80	8152.79	103.39	355.80	102.21	-140.22	173.52	306.09	11.67	MWD
8258.00	52.70	8179.64	135.58	354.70	134.38	-142.90	196.16	313.24	11.84	MWD
8300.00	57.50	8203.66	169.93	356.60	168.72	-145.50	222.79	319.23	12.01	MWD
8342.00	62.00	8224.82	206.18	359.00	204.96	-146.87	252.15	324.37	11.80	MWD
8384.00	67.10	8242.86	244.09	1.40	242.87	-146.72	283.75	328.86	13.19	MWD
8426.00	72.30	8257.43	283.43	2.70	282.22	-145.31	317.43	332.76	12.72	MWD
8468.00	75.30	8269.15	323.73	359.90	322.53	-144.40	353.38	335.88	9.59	MWD
8510.00	75.30	8279.80	364.36	359.10	363.16	-144.76	390.94	338.27	1.84	MWD
8552.00	77.10	8289.82	405.14	359.20	403.94	-145.36	429.30	340.21	4.29	MWD
8594.00	79.70	8298.27	446.28	359.70	445.07	-145.76	468.33	341.87	6.30	MWD
8636.00	81.60	8305.09	487.72	0.20	486.51	-145.79	507.89	343.32	4.67	MWD
8677.00	82.10	8310.90	528.30	0.30	527.10	-145.61	546.84	344.56	1.24	MWD
8719.00	84.50	8315.80	570.01	0.30	568.81	-145.40	587.10	345.66	5.71	MWD
8761.00	84.70	8319.75	611.82	0.30	610.62	-145.18	627.64	346.63	0.48	MWD
8803.00	86.00	8323.16	653.67	0.60	652.48	-144.85	668.37	347.48	3.18	MWD
8845.00	87.50	8325.54	695.59	1.30	694.41	-144.15	709.21	348.27	3.94	MWD
8887.00	88.60	8326.97	737.54	1.90	736.36	-142.98	750.12	349.01	2.98	MWD
8929.00	89.40	8327.70	779.50	1.80	778.34	-141.62	791.12	349.69	1.92	MWD
8971.00	90.80	8327.63	821.46	1.90	820.31	-140.27	832.22	350.30	3.34	MWD
9012.00	91.40	8326.84	862.41	2.30	861.28	-138.77	872.38	350.85	1.76	MWD



Ryan Energy Technologies COMPLETION REPORT



Company: Chesapeake Operating, Inc. Date: 11/25/2008 Time: 10:27:41 Page: 3
Field: Eddy Co, NM NAD 83 Co-ordinate(N/E) Reference: Site: PLU Pierce Canyon 17 FED 1H
Site: PLU Pierce Canyon 17 FED 1H Vertical (TVD) Reference: Est. RKB 3255.0
Well: Pierce Canyon 17 FED 1H Section (VS) Reference: Well (0.00N,0.00E,359.52Az)
Wellpath: 17 FED 1H 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 TYPE
9054.00	91.50	8325.78	904.35	2.30	903.23	-137.08	913.57	351.37	0.24	MWD
9097.00	91.40	8324.69	947.30	1.40	946.19	-135.69	955.87	351.84	2.11	MWD
9139.00	91.70	8323.56	989.25	2.00	988.16	-134.45	997.26	352.25	1.60	MWD
9181.00	92.30	8322.09	1031.17	2.80	1030.10	-132.69	1038.61	352.66	2.38	MWD
9223.00	91.30	8320.77	1073.07	3.30	1072.02	-130.46	1079.92	353.06	2.66	MWD
9265.00	89.00	8320.66	1114.95	4.40	1113.92	-127.64	1121.21	353.46	6.07	MWD
9306.00	89.40	8321.23	1155.80	4.30	1154.80	-124.53	1161.49	353.85	1.01	MWD
9348.00	89.10	8321.78	1197.63	4.80	1196.66	-121.20	1202.78	354.22	1.39	MWD
9390.00	89.80	8322.19	1239.44	5.10	1238.50	-117.57	1244.07	354.58	1.81	MWD
9449.00	91.80	8321.36	1298.13	5.50	1297.24	-112.12	1302.08	355.06	3.46	MWD
9491.00	92.90	8319.64	1339.90	4.70	1339.04	-108.39	1343.42	355.37	3.24	MWD
9533.00	93.20	8317.40	1381.73	2.50	1380.89	-105.76	1384.94	355.62	5.28	MWD
9575.00	93.30	8315.02	1423.61	2.50	1422.78	-103.93	1426.58	355.82	0.24	MWD
9617.00	94.40	8312.20	1465.47	1.30	1464.67	-102.54	1468.25	356.00	3.87	MWD
9659.00	94.50	8308.94	1507.32	1.80	1506.52	-101.41	1509.93	356.15	1.21	MWD
9701.00	95.20	8305.39	1549.13	2.00	1548.35	-100.02	1551.58	356.30	1.73	MWD
9743.00	96.00	8301.30	1590.89	2.40	1590.12	-98.42	1593.16	356.46	2.13	MWD
9785.00	96.40	8296.76	1632.60	1.70	1631.84	-96.92	1634.72	356.60	1.91	MWD
9826.00	95.80	8292.40	1673.35	0.70	1672.60	-96.07	1675.36	356.71	2.83	MWD
9868.00	96.70	8287.83	1715.09	1.20	1714.35	-95.38	1717.00	356.82	2.45	MWD
9910.00	95.80	8283.26	1756.82	1.30	1756.09	-94.47	1758.63	356.92	2.16	MWD
9951.00	94.20	8279.68	1797.64	1.00	1796.92	-93.65	1799.36	357.02	3.97	MWD
9993.00	93.60	8276.83	1839.53	1.20	1838.82	-92.84	1841.16	357.11	1.51	MWD
10035.00	93.60	8274.19	1881.44	0.40	1880.73	-92.26	1882.99	357.19	1.90	MWD
10119.00	94.30	8268.40	1965.23	359.80	1964.53	-92.11	1966.69	357.32	1.10	MWD
10161.00	94.80	8265.07	2007.10	359.60	2006.40	-92.33	2008.52	357.37	1.28	MWD
10203.00	95.50	8261.30	2048.93	359.40	2048.22	-92.69	2050.32	357.41	1.73	MWD
10288.00	94.70	8253.75	2133.57	357.60	2132.85	-94.91	2134.96	357.45	2.31	MWD
10371.00	95.10	8246.66	2216.22	357.60	2215.48	-98.37	2217.66	357.46	0.48	MWD
10455.00	93.00	8240.72	2299.96	357.50	2299.19	-101.96	2301.45	357.46	2.50	MWD
10539.00	91.30	8237.57	2383.86	358.20	2383.07	-105.10	2385.38	357.47	2.19	MWD
10623.00	90.70	8236.11	2467.82	357.80	2467.00	-108.04	2469.37	357.49	0.86	MWD
10706.00	90.10	8235.53	2550.77	357.50	2549.93	-111.44	2552.36	357.50	0.81	MWD
10789.00	89.40	8235.89	2633.74	358.60	2632.88	-114.26	2635.36	357.52	1.57	MWD
10873.00	89.60	8236.62	2717.74	359.70	2716.86	-115.51	2719.32	357.57	1.33	MWD
10957.00	89.20	8237.50	2801.71	1.70	2800.85	-114.48	2803.19	357.66	2.43	MWD
11040.00	89.20	8238.66	2884.57	3.60	2883.75	-110.65	2885.87	357.80	2.29	MWD
11124.00	89.50	8239.61	2968.37	3.40	2967.59	-105.52	2969.46	357.96	0.43	MWD
11207.00	90.60	8239.54	3051.15	3.80	3050.42	-100.31	3052.07	358.12	1.41	MWD
11291.00	89.10	8239.76	3134.92	3.80	3134.23	-94.74	3135.66	358.27	1.79	MWD
11375.00	89.50	8240.79	3218.71	3.20	3218.07	-89.61	3219.32	358.40	0.86	MWD
11458.00	90.30	8240.93	3301.53	3.30	3300.94	-84.91	3302.03	358.53	0.97	MWD
11542.00	90.30	8240.49	3385.37	2.70	3384.82	-80.51	3385.78	358.64	0.71	MWD
11626.00	89.80	8240.42	3469.31	0.50	3468.78	-78.17	3469.66	358.71	2.69	MWD
11710.00	91.70	8239.32	3553.25	2.30	3552.74	-76.11	3553.56	358.77	3.12	MWD
11794.00	91.50	8236.97	3637.11	2.60	3636.63	-72.52	3637.35	358.86	0.43	MWD
11877.00	92.00	8234.44	3719.94	3.00	3719.49	-68.47	3720.12	358.95	0.77	MWD
11961.00	90.00	8232.97	3803.80	2.10	3803.39	-64.74	3803.94	359.02	2.61	MWD
12045.00	88.40	8234.15	3887.71	1.80	3887.33	-61.88	3887.82	359.09	1.94	MWD
12129.00	89.20	8235.91	3971.65	1.10	3971.29	-59.75	3971.74	359.14	1.27	MWD
12213.00	89.50	8236.86	4055.60	1.40	4055.26	-57.92	4055.67	359.18	0.51	MWD
12297.00	90.30	8237.01	4139.55	1.50	4139.23	-55.79	4139.61	359.23	0.96	MWD



Ryan Energy Technologies COMPLETION REPORT



Company: Chesapeake Operating, Inc. Date: 11/25/2008 Time: 10:27:41 Page: 4
Field: Eddy Co, NM NAD 83 Co-ordinate(NE) Reference: Site: PLU Pierce Canyon 17 FED 1H
Site: PLU Pierce Canyon 17 FED 1H Vertical (TVD) Reference: Est. RKB 3255.0
Well: Pierce Canyon 17 FED 1H Section (VS) Reference: Well (0.00N,0.00E,359.52Az)
Wellpath: 17 FED 1H 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 TYPE
12380.00	90.60	8236.35	4222.51	1.40	4222.20	-53.69	4222.54	359.27	0.38	MWD
12464.00	91.40	8234.89	4306.46	1.00	4306.17	-51.94	4306.48	359.31	1.06	MWD
12548.00	92.20	8232.25	4390.38	1.20	4390.11	-50.32	4390.40	359.34	0.98	MWD
12632.00	91.90	8229.24	4474.31	0.20	4474.05	-49.30	4474.32	359.37	1.24	MWD
12695.00	91.20	8227.54	4537.28	358.90	4537.03	-49.79	4537.30	359.37	2.34	MWD
12740.00	91.20	8226.60	4582.27	358.90	4582.01	-50.66	4582.29	359.37	0.00	Projection