

30-015-37031



Ryan Energy Technologies Survey Report



Company: Chesapeake Operating, Inc.		Date: 12/23/2009	Time: 10:29:19	Page: 1
Field: Eddy Co, NM NAD 83		Co-ordinate(NE) Reference:	Site: PLU Big Sinks 26 Federal 1H	
Site: PLU Big Sinks 26 Federal 1H		Vertical (TVD) Reference:	SITE 3360.0	
Well: PLU Big Sinks 26 Federal 1H		Section (VS) Reference:	Well (0.00N,0.00E,358.47Azi)	
Wellpath: 26 Fed 1H Pilot Hole		Survey Calculation Method:	Minimum Curvature	Db: Sylbase

Field: Eddy Co, NM NAD 83	
USA	
Map System: US State Plane Coordinate System 1983	Map Zone: New Mexico, Eastern Zone
Geo Datum: GRS 1960	Coordinate System: Site Centre
Sys Datum: Mean Sea Level	Geomagnetic Model: igrf2005

Site: PLU Big Sinks 26 Federal 1H	
Reeves Co. NM	
Site Position:	Northings: 430269.47 ft Latitude: 32 10 55.377 N
From: Map	Eastings: 686269.42 ft Longitudes: 103 51 30.033 W
Position Uncertainty: 0.00 ft	North Reference: Grid
Ground Level: 3338.00 ft	Grid Convergence: 0.25 deg

Well: PLU Big Sinks 26 Federal 1H		Slot Name:	
Well Position:	+N-S 0.00 ft Northings: 430269.47 ft Latitude: 32 10 55.377 N		
	+E-W 0.00 ft Eastings: 686269.42 ft Longitudes: 103 51 30.033 W		
Position Uncertainty: 0.00 ft			

Wellpath: 26 Fed 1H Pilot Hole		Drilled From: Surface	
Current Datum: SITE	Height 3360.00 ft	Tie-on Depth: 0.00 ft	
Magnetic Data: 9/28/2009		Above System Datum: Mean Sea Level	
Field Strength: 48768 uT		Declination: 7.91 deg	
Vertical Section: Depth From (TVD)	+N-S ft	Mag Dip Angle: 60.16 deg	
	+E-W ft	Direction deg	
0.00	0.00	0.00	358.47

Survey Program for Definitive Wellpath		Version: 2	
Date: 11/27/2009	Validated: No	Toolcode	Tool Name
Actual From ft	To ft		
152.20	6692.40	Gyro	Gyro MS
6605.00	11400.00	Ryan MWD	Ryan MWD
Survey #1 (152.20-6692.40)			
Survey #2 (6605.00-11400.00)			

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	TIE LINE
152.20	0.38	185.74	152.20	-0.50	-0.05	-0.50	0.25	0.25	0.00	Gyro
307.60	0.19	84.84	307.60	-0.99	0.15	-1.00	0.29	-0.12	-64.85	Gyro
481.90	0.48	34.01	481.89	-0.36	0.85	-0.38	0.22	0.17	-29.20	Gyro
655.20	0.47	359.49	655.19	0.95	1.24	0.92	0.17	-0.01	-20.50	Gyro
744.30	0.49	13.36	744.29	1.63	1.35	1.64	0.19	0.02	22.30	Gyro
831.60	0.42	7.59	831.58	2.35	1.51	2.31	0.13	-0.03	-12.34	Gyro
862.90	0.19	1.80	862.88	2.51	1.52	2.47	0.74	-0.73	-18.50	Gyro
1050.60	0.14	276.29	1050.48	2.65	1.31	2.81	0.12	-0.03	-45.58	Gyro
1239.60	0.33	263.25	1239.56	2.81	0.54	2.80	0.10	0.10	-6.90	Gyro
1428.00	0.32	231.87	1427.98	2.42	-0.42	2.43	0.09	-0.01	-16.66	Gyro
1616.90	0.61	223.18	1616.87	1.36	-1.52	1.40	0.16	0.15	-4.60	Gyro
1804.90	0.72	232.08	1804.66	-0.09	-3.14	-0.01	0.03	0.06	4.73	Gyro
1993.30	1.07	234.88	1993.24	-1.33	-5.51	-1.68	0.19	0.19	1.49	Gyro
2181.50	1.04	213.94	2181.40	-4.26	-7.90	-4.05	0.20	-0.02	-11.13	Gyro
2369.70	0.75	202.41	2369.58	-6.81	-9.32	-6.56	0.18	-0.15	-8.13	Gyro
2557.40	0.96	172.94	2557.26	-9.51	-9.60	-9.25	0.26	0.11	-15.70	Gyro
2745.20	1.04	165.66	2745.03	-12.72	-8.93	-12.48	0.03	0.04	-3.88	Gyro
2933.10	1.25	144.64	2932.90	-16.05	-7.37	-15.84	0.25	0.11	-11.19	Gyro
3121.00	1.51	128.21	3120.74	-19.25	-4.24	-19.13	0.25	0.14	-8.74	Gyro
3308.60	0.98	87.08	3308.30	-20.70	-0.70	-20.67	0.54	-0.23	-21.92	Gyro
3497.20	0.67	134.23	3496.88	-21.33	1.70	-21.42	0.36	-0.16	25.00	Gyro



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Company: Chesapeake Operating, Inc.
Field: Eddy Co, NM NAD 83
Site: PLU Big Sinks 26 Federal 1H
Well: PLU Big Sinks 26 Federal 1H
Wellpath: 26 Fed 1H Pilot Hole

Date: 12/23/2009
Co-ordinate(NE) Reference:
Vertical (TVD) Reference:
Section (VS) Reference:
Survey Calculation Method:

Time: 10:29:19
Site: PLU Big Sinks 26 Federal 1H
SITE 3360.0
Well (0.00N,0.00E,353.47Azi)
Minimum Curvature
Db: Sybase

Page: 2

Survey

MD ft	Incl deg	Azin deg	TVD ft	+N-S ft	+E-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
3665.10	1.07	147.48	3684.76	-23.63	3.43	-23.71	0.24	0.21	7.05	Gyro
3873.20	0.46	136.71	3872.84	-25.66	4.89	-25.78	0.33	-0.32	-5.73	Gyro
4061.50	0.38	4.19	4061.14	-25.59	5.46	-25.72	0.41	-0.04	-70.38	Gyro
4249.60	0.48	42.06	4249.24	-24.33	6.03	-24.53	0.16	0.05	20.13	Gyro
4437.20	0.50	79.76	4436.63	-23.65	7.36	-23.64	0.17	0.01	20.10	Gyro
4625.50	0.51	98.19	4625.12	-23.62	9.00	-23.66	0.09	0.01	9.79	Gyro
4813.60	0.42	103.61	4813.22	-23.91	10.50	-24.18	0.05	-0.05	2.68	Gyro
5001.30	0.22	93.98	5000.91	-24.09	11.53	-24.39	0.11	-0.11	-5.13	Gyro
5189.40	0.03	126.98	5189.01	-24.15	11.93	-24.46	0.10	-0.10	17.54	Gyro
5377.20	0.09	356.97	5376.81	-24.03	11.96	-24.34	0.06	0.03	-69.23	Gyro
5565.30	0.43	51.86	5564.91	-23.45	12.51	-23.77	0.20	0.18	29.18	Gyro
5753.50	0.03	115.11	5752.91	-23.03	13.11	-23.37	0.22	-0.21	33.64	Gyro
5941.10	0.14	263.54	5940.71	-23.08	12.92	-23.42	0.09	0.06	79.04	Gyro
6129.20	0.46	239.71	6128.81	-23.53	12.11	-23.90	0.19	0.17	-17.45	Gyro
6317.20	0.66	224.36	6316.60	-24.83	10.77	-25.11	0.11	0.11	-3.38	Gyro
6504.60	0.68	234.13	6504.18	-26.26	9.11	-26.49	0.06	0.01	5.21	Gyro
6692.40	0.90	232.82	6691.87	-27.80	7.04	-27.98	0.12	0.12	-0.70	Gyro
6805.00	0.70	256.30	6804.56	-28.50	5.66	-28.64	0.34	-0.18	20.65	Ryan MWD
6999.00	1.20	329.40	6998.54	-27.79	4.60	-27.90	1.23	0.53	77.77	Ryan MWD
6993.00	2.50	358.30	6992.50	-24.89	4.04	-24.99	1.66	1.33	30.74	Ryan MWD
7066.00	4.90	5.40	7065.50	-18.91	4.36	-19.02	2.62	2.53	7.63	Ryan MWD
7160.00	9.60	3.30	7178.49	-6.92	5.19	-7.05	5.22	5.21	-2.23	Ryan MWD
7274.00	13.60	0.20	7270.53	12.13	5.69	11.97	4.10	4.04	-3.30	Ryan MWD
7368.00	16.10	359.70	7361.38	36.22	5.66	36.05	2.66	2.66	-0.53	Ryan MWD
7461.00	18.30	359.00	7450.21	63.71	5.34	63.55	2.38	2.37	-0.75	Ryan MWD
7555.00	19.30	358.20	7539.20	94.00	4.60	93.84	1.10	1.06	-0.85	Ryan MWD
7649.00	20.90	357.90	7627.47	126.28	3.49	126.14	1.71	1.70	-0.32	Ryan MWD
7744.00	21.00	357.80	7716.19	160.22	2.22	160.11	0.11	0.11	-0.11	Ryan MWD
7838.00	20.40	357.60	7804.12	193.42	0.89	193.33	0.64	-0.64	-0.21	Ryan MWD
7932.00	19.20	357.60	7892.66	225.24	-0.45	225.17	1.28	-1.28	0.60	Ryan MWD
8027.00	19.20	356.60	7982.28	256.44	-1.97	256.40	0.28	0.00	-0.64	Ryan MWD
8120.00	19.30	355.60	8070.08	287.04	-3.95	287.04	0.37	0.11	-1.08	Ryan MWD
8217.00	18.00	356.60	8161.96	317.99	-5.96	316.03	1.36	-1.34	1.03	Ryan MWD
8312.00	19.40	359.00	8251.97	343.42	-7.06	348.49	1.65	1.47	2.32	Ryan MWD
8408.00	18.50	359.10	8342.76	379.59	-7.53	379.66	0.94	-0.94	0.10	Ryan MWD
8503.00	17.00	1.80	8433.24	408.54	-7.33	408.60	1.80	-1.53	2.84	Ryan MWD
8598.00	20.30	1.90	8523.24	438.90	-6.39	438.92	3.47	3.47	0.11	Ryan MWD
8694.00	18.60	0.60	8613.70	471.02	-5.62	471.00	1.61	-1.56	-1.15	Ryan MWD
8789.00	17.30	0.50	8704.03	500.45	-5.29	500.41	1.58	-1.53	-0.32	Ryan MWD
8885.00	17.10	359.80	8795.73	528.84	-5.21	528.79	0.30	-0.21	-0.73	Ryan MWD
8960.00	17.00	359.00	8896.56	556.69	-5.50	556.64	0.27	-0.11	-0.84	Ryan MWD
9076.00	16.70	359.30	8978.44	584.51	-6.16	584.46	0.38	-0.31	-0.73	Ryan MWD
9171.00	16.40	357.60	9069.50	611.55	-7.12	611.52	0.38	-0.32	-0.74	Ryan MWD
9267.00	15.60	356.40	9161.78	637.98	-3.50	637.93	0.90	-0.83	-1.25	Ryan MWD
9362.00	15.40	357.10	9253.33	663.32	-9.94	663.35	0.29	-0.21	0.74	Ryan MWD
9458.00	14.60	355.50	9345.99	688.36	-11.58	688.42	0.68	-0.52	-1.67	Ryan MWD
9554.00	14.30	353.90	9438.69	712.45	-13.78	712.56	0.75	-0.62	-1.67	Ryan MWD
9649.00	14.00	354.30	9531.01	735.55	-16.17	735.72	0.33	-0.32	0.42	Ryan MWD
9744.00	13.60	352.90	9623.22	758.23	-13.71	758.46	0.41	-0.21	-1.47	Ryan MWD
9840.00	13.60	352.40	9716.49	780.78	-21.62	781.03	0.24	-0.21	-0.52	Ryan MWD
9935.00	13.00	351.60	9808.84	802.42	-24.66	802.79	0.66	-0.63	-0.84	Ryan MWD
10031.00	12.60	353.70	9902.56	823.51	-27.39	823.95	0.64	-0.42	2.19	Ryan MWD
10124.00	12.90	354.00	9993.27	843.92	-29.58	844.41	0.33	0.32	0.32	Ryan MWD



Ryan Energy Technologies Survey Report



Company:	Chesapeake Operating, Inc.	Date:	12/23/2009	Time:	10:29:19	Page:	3
Field:	Eddy Co, NM NAD 83	Co-ordinate(NE) Reference:	Site: PLU Big Sinks 26 Federal 1H				
Site:	PLU Big Sinks 26 Federal 1H	Vertical (TVD) Reference:	SITE 3360.0				
Well:	PLU Big Sinks 26 Federal 1H	Section (VS) Reference:	Well (0.00N,0.00E,353.47Azi)				
Wellpath:	26 Fed 1H Pilot Hole	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
10220.00	12.50	352.80	10086.92	864.88	-32.01	865.43	0.50	-0.42	-1.25	Ryan MWD
10315.00	11.50	352.40	10179.84	884.47	-34.55	885.08	1.06	-1.05	-0.42	Ryan MWD
10411.00	11.10	352.20	10273.93	903.11	-37.07	903.78	0.42	-0.42	-0.21	Ryan MWD
10506.00	10.40	351.09	10367.31	920.64	-39.65	921.37	0.77	-0.74	-1.26	Ryan MWD
10602.00	9.90	349.70	10461.81	937.32	-42.43	938.12	0.57	-0.52	-1.35	Ryan MWD
10698.00	9.70	349.20	10556.41	953.38	-45.47	954.26	0.23	-0.21	-0.52	Ryan MWD
10792.00	9.20	349.40	10649.13	968.55	-48.34	969.49	0.53	-0.53	0.21	Ryan MWD
10884.00	9.10	349.20	10739.96	982.92	-51.05	983.93	0.11	-0.11	-0.22	Ryan MWD
10978.00	9.10	347.40	10832.73	997.48	-54.07	998.57	0.30	0.00	-1.91	Ryan MWD
11074.00	8.90	345.90	10927.60	1012.09	-57.53	1013.26	0.32	-0.21	-1.56	Ryan MWD
11170.00	8.90	346.60	11022.44	1026.52	-61.03	1027.73	0.11	0.00	0.73	Ryan MWD
11266.00	8.60	345.70	11117.32	1040.69	-64.59	1042.05	0.34	-0.31	-0.94	Ryan MWD
11352.00	8.60	345.50	11202.36	1053.15	-67.76	1054.58	0.03	0.00	-0.23	Ryan MWD
11400.00	8.60	345.50	11249.82	1060.10	-69.55	1061.53	0.00	0.00	0.00	Ryan MWD



Ryan Energy Technologies Survey Report



Company: Chesapeake Operating, Inc. Date: 12/23/2009 Time: 10:19:07 Page: 2
Field: Eddy Co, NM NAD 83 Co-ordinate(NE) Reference: Site: PLU Big Sinks 26 Federal 1H
Site: PLU Big Sinks 26 Federal 1H Vertical (TVD) Reference: SITE 3360.0
Well: PLU Big Sinks 26 Federal 1H Section (VS) Reference: Well (0.00N,0.00E,353.47Azi)
Wellpath: 26 Fed 1H ST1 Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

MD ft	Incl deg	Azin deg	TVD ft	+N/S ft	+E/W ft	VS ft	DL5 deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
3497.20	0.87	134.23	3496.88	-21.38	1.70	-21.42	0.38	-0.16	25.00	Gyro
3655.10	1.07	147.48	3684.76	-23.63	3.43	-23.71	0.24	0.21	7.05	Gyro
3873.20	0.46	136.71	3872.84	-25.66	4.89	-25.78	0.33	-0.32	-5.73	Gyro
4061.50	0.38	4.19	4061.14	-25.59	5.46	-25.72	0.41	-0.04	-70.38	Gyro
4249.60	0.48	42.06	4249.24	-24.33	6.03	-24.53	0.16	0.05	20.13	Gyro
4437.20	0.50	79.76	4436.83	-23.65	7.38	-23.84	0.17	0.01	20.10	Gyro
4625.50	0.51	93.19	4625.12	-23.62	9.00	-23.66	0.09	0.01	9.79	Gyro
4813.60	0.42	103.61	4813.22	-23.91	10.50	-24.18	0.05	-0.05	2.88	Gyro
5001.30	0.22	93.98	5000.91	-24.09	11.53	-24.39	0.11	-0.11	-5.13	Gyro
5189.40	0.03	126.98	5189.01	-24.15	11.93	-24.46	0.10	-0.10	17.54	Gyro
5377.20	0.09	356.97	5376.81	-24.03	11.96	-24.34	0.06	0.03	-69.23	Gyro
5565.30	0.43	51.66	5564.91	-23.45	12.51	-23.77	0.20	0.13	29.18	Gyro
5753.30	0.03	115.11	5752.91	-23.03	13.11	-23.37	0.22	-0.21	33.64	Gyro
5941.10	0.14	263.54	5940.71	-23.08	12.92	-23.42	0.09	0.08	79.04	Gyro
6129.20	0.46	230.71	6128.81	-23.53	12.11	-23.90	0.19	0.17	-17.45	Gyro
6317.20	0.66	224.36	6316.80	-24.83	10.77	-25.11	0.11	0.11	-3.38	Gyro
6504.60	0.68	224.13	6504.16	-26.26	9.11	-26.49	0.06	0.01	5.21	Gyro
6692.40	0.90	232.82	6691.97	-27.60	7.04	-27.98	0.12	0.12	-0.70	Gyro
6880.00	0.70	256.30	6879.56	-23.50	5.66	-28.64	0.34	-0.18	20.65	Ryan MWD
6899.00	1.20	329.40	6898.54	-27.79	4.60	-27.90	1.28	0.53	77.77	Ryan MWD
6993.00	2.50	358.30	6992.50	-24.89	4.04	-24.99	1.66	1.38	30.74	Ryan MWD
7086.00	4.90	5.40	7085.30	-18.91	4.36	-19.02	2.62	2.58	7.63	Ryan MWD
7180.00	9.60	3.30	7178.49	-6.92	5.19	-7.05	5.22	5.21	-2.23	Ryan MWD
7274.00	13.60	0.20	7270.53	12.13	5.69	11.97	4.10	4.04	-3.30	Ryan MWD
7368.00	16.10	359.70	7361.38	36.22	5.66	36.05	2.66	2.66	-0.53	Ryan MWD
7461.00	18.30	359.00	7450.21	63.71	5.34	63.55	2.33	2.37	-0.75	Ryan MWD
7555.00	19.30	359.20	7539.20	94.00	4.60	93.64	1.10	1.05	-0.65	Ryan MWD
7648.00	20.80	357.90	7627.47	126.28	3.49	126.14	1.71	1.70	-0.32	Ryan MWD
7744.00	21.00	357.80	7716.19	160.22	2.22	160.11	0.11	0.11	-0.11	Ryan MWD
7838.00	20.40	357.60	7804.12	193.42	0.89	193.33	0.64	-0.64	-0.21	Ryan MWD
7932.00	19.20	357.60	7892.56	225.24	-0.45	225.17	1.28	-1.28	0.00	Ryan MWD
8027.00	19.20	356.80	7982.28	256.44	-1.97	256.40	0.28	0.00	-0.84	Ryan MWD
8120.00	19.30	355.80	8070.08	287.04	-3.95	287.04	0.37	0.11	-1.08	Ryan MWD
8217.00	18.00	356.80	8161.98	317.99	-5.96	318.03	1.38	-1.34	1.03	Ryan MWD
8312.00	19.40	359.00	8251.97	348.42	-7.06	348.49	1.65	1.47	2.32	Ryan MWD
8408.00	18.50	359.10	8342.76	379.59	-7.53	379.66	0.94	-0.94	0.10	Ryan MWD
8524.00	21.30	349.60	8451.66	418.73	-11.67	418.90	3.63	2.41	-8.19	Ryan MWD
8618.00	21.50	354.90	8539.38	452.69	-16.28	452.96	2.07	0.21	5.64	Ryan MWD
8712.00	22.10	354.20	8626.66	487.44	-19.60	487.79	0.70	0.64	-0.74	Ryan MWD
8806.00	22.50	1.40	8713.65	523.02	-20.95	523.39	2.94	0.43	7.66	Ryan MWD
8899.00	22.50	0.40	8799.57	553.60	-20.39	558.95	0.41	0.00	-1.09	Ryan MWD
8930.00	25.50	2.50	8827.88	571.20	-20.05	571.53	10.06	9.68	6.77	Ryan MWD
8962.00	30.40	3.30	8856.14	586.17	-19.29	586.48	15.36	15.31	2.50	Ryan MWD
8993.00	35.40	3.40	8882.16	602.98	-18.31	603.25	16.13	16.13	0.32	Ryan MWD
9024.00	40.70	2.60	8906.57	622.05	-17.31	622.29	17.17	17.10	-2.58	Ryan MWD
9055.00	44.60	2.30	8929.36	643.03	-16.42	643.24	12.60	12.58	-0.97	Ryan MWD
9087.00	46.70	2.80	8951.73	665.89	-15.40	666.07	6.66	6.56	1.56	Ryan MWD
9118.00	50.10	2.50	8972.31	689.05	-14.33	689.18	10.99	10.97	-0.97	Ryan MWD
9149.00	54.60	1.20	8991.20	713.60	-13.54	713.71	15.52	15.16	-4.19	Ryan MWD
9181.00	57.60	0.00	9008.95	740.22	-13.27	740.31	9.88	9.37	-3.75	Ryan MWD
9212.00	60.50	359.20	9024.65	768.83	-13.46	768.92	8.99	8.71	-2.58	Ryan MWD
9244.00	63.90	359.10	9039.77	795.13	-13.88	795.22	10.63	10.62	-0.31	Ryan MWD
9275.00	67.20	359.20	9052.60	823.34	-14.30	823.43	10.65	10.65	0.32	Ryan MWD
9306.00	68.50	359.60	9064.29	852.05	-14.60	852.14	4.36	4.19	1.29	Ryan MWD



Ryan Energy Technologies Survey Report



Company:	Chesapeake Operating, Inc.	Date:	12/23/2009	Time:	10:19:07	Page:	3
Field:	Eddy Co, NM NAD 83	Co-ordinate(NE) Reference:	Site: PLU Big Sinks 26 Federal 1H				
Site:	PLU Big Sinks 25 Federal 1H	Vertical (TVD) Reference:	SITE 3360.0				
Well:	PLU Big Sinks 25 Federal 1H	Section (VS) Reference:	Well (0.00N, 0.00E, 358.47Az)				
Wellpath:	26 Fed 1H ST1	Survey Calculation Method:	Minimum Curvature				Db: Sysbase

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLG deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
9337.00	68.00	359.99	9075.77	880.84	-14.97	880.93	2.85	-1.61	-2.26	Ryan MWD
9369.00	69.50	359.79	9097.37	910.66	-15.60	910.75	4.72	4.69	-0.62	Ryan MWD
9400.00	73.40	359.60	9097.23	940.03	-16.29	940.13	12.58	12.58	-0.32	Ryan MWD
9432.00	77.10	359.00	9105.35	970.97	-16.94	971.07	11.63	11.56	1.25	Ryan MWD
9463.00	80.10	359.29	9111.50	1001.35	-17.42	1001.46	9.70	9.68	0.65	Ryan MWD
9494.00	81.90	0.10	9110.25	1031.67	-17.00	1032.07	0.40	5.01	2.90	Ryan MWD
9526.00	84.60	0.10	9120.06	1063.75	-17.55	1063.84	9.06	9.06	0.00	Ryan MWD
9559.00	89.60	0.10	9121.67	1096.70	-17.49	1096.77	14.55	14.55	0.00	Ryan MWD
9593.00	90.60	359.00	9121.34	1100.70	-17.40	1100.74	1.29	1.28	-0.21	Ryan MWD
9747.00	91.50	359.70	9119.46	1284.67	-13.64	1284.71	1.48	0.74	-1.28	Ryan MWD
9841.00	92.10	357.70	9116.50	1378.57	-21.59	1378.66	1.24	0.64	-1.06	Ryan MWD
9906.00	92.70	356.90	9112.52	1473.38	-26.06	1473.55	1.05	0.63	-0.84	Ryan MWD
10030.00	91.70	357.40	9108.52	1567.20	-30.73	1567.46	1.19	-1.06	0.53	Ryan MWD
10123.00	90.70	357.99	9106.67	1660.10	-34.54	1660.43	1.20	-1.08	0.54	Ryan MWD
10217.00	91.20	357.69	9105.41	1754.01	-38.23	1754.41	0.62	0.53	-0.32	Ryan MWD
10311.00	90.50	359.00	9104.02	1847.96	-41.02	1848.39	1.67	-0.74	1.49	Ryan MWD
10405.00	91.20	357.89	9102.62	1941.91	-43.64	1942.38	1.43	0.74	-1.28	Ryan MWD
10500.00	90.50	359.00	9101.21	2036.07	-45.00	2037.00	2.00	-0.74	1.09	Ryan MWD
10593.00	89.60	359.70	9101.13	2129.86	-46.37	2130.34	0.97	-0.97	0.11	Ryan MWD
10687.00	87.90	0.10	9103.18	2223.84	-46.53	2224.29	1.36	-1.81	0.43	Ryan MWD
10781.00	88.20	0.30	9106.38	2317.78	-46.20	2318.19	0.38	0.32	0.21	Ryan MWD
10875.00	88.30	0.00	9109.25	2411.74	-45.96	2412.11	0.34	0.11	-0.32	Ryan MWD
10969.00	88.60	359.30	9111.55	2505.70	-47.35	2506.07	1.92	0.84	1.81	Ryan MWD
11063.00	90.30	357.50	9112.20	2599.63	-50.80	2600.06	1.72	1.49	-0.85	Ryan MWD
11158.00	90.00	359.10	9111.55	2694.56	-54.44	2695.05	0.71	-0.32	0.63	Ryan MWD
11252.00	88.70	359.30	9113.02	2788.52	-56.57	2789.04	1.33	-1.33	1.28	Ryan MWD
11345.00	88.50	359.00	9115.29	2881.48	-57.95	2882.00	0.39	-0.22	-0.32	Ryan MWD
11440.00	88.40	358.80	9117.66	2976.43	-59.78	2976.97	0.24	-0.11	-0.21	Ryan MWD
11534.00	89.30	359.10	9119.75	3070.40	-61.50	3070.94	1.01	0.96	0.32	Ryan MWD
11628.00	90.20	359.50	9120.10	3164.39	-62.05	3164.90	1.05	0.90	0.43	Ryan MWD
11723.00	89.60	358.99	9120.16	3259.38	-63.97	3259.92	0.76	-0.42	-0.63	Ryan MWD
11817.00	87.60	359.30	9122.37	3353.33	-65.45	3353.89	2.48	-2.46	0.43	Ryan MWD
11911.00	87.10	359.00	9126.60	3447.22	-66.84	3447.77	0.53	-0.43	-0.32	Ryan MWD
12005.00	89.10	359.29	9128.62	3541.15	-68.32	3541.71	2.14	2.13	0.21	Ryan MWD
12099.00	89.60	359.39	9130.61	3634.12	-70.35	3634.70	1.23	0.75	-0.97	Ryan MWD
12192.00	90.00	359.30	9130.57	3728.08	-73.14	3728.70	0.21	0.21	0.00	Ryan MWD
12286.00	88.30	357.40	9132.37	3822.00	-76.66	3822.68	2.05	-1.81	-0.96	Ryan MWD
12375.00	88.40	356.79	9134.53	3910.84	-81.24	3911.62	0.79	0.11	-0.79	Ryan MWD
12470.00	89.10	356.80	9137.00	4005.67	-86.62	4006.55	0.74	0.74	0.11	Ryan MWD
12566.00	87.90	358.20	9139.52	4101.54	-90.81	4102.50	1.92	-1.25	1.46	Ryan MWD
12662.00	88.20	357.30	9142.70	4197.41	-94.50	4199.44	0.99	0.31	-0.34	Ryan MWD
12758.00	88.50	356.50	9145.55	4293.23	-99.77	4294.36	0.39	0.31	-0.83	Ryan MWD
12853.00	88.60	356.30	9147.55	4389.01	-105.73	4389.27	0.24	0.11	-0.21	Ryan MWD
12949.00	89.70	355.29	9149.38	4483.73	-112.84	4485.15	1.62	1.15	1.15	Ryan MWD
13045.00	90.60	354.30	9148.66	4579.33	-121.63	4580.94	1.48	1.15	-0.94	Ryan MWD
13141.00	91.20	353.79	9147.28	4674.79	-131.66	4676.63	0.75	0.42	-0.62	Ryan MWD
13196.00	92.00	353.40	9145.75	4729.42	-137.84	4731.41	1.55	1.45	-0.55	Ryan MWD
13242.00	92.00	353.40	9144.14	4775.08	-143.12	4777.20	0.00	0.00	0.00	PROJECTED TO TD



Company: Chesapeake Operating, Inc.	Date: 12/23/2009	Time: 10:20:12	Page: 1							
Field: Eddy Co, NM NAD 83	Co-ordinate(NF) Reference:	Site: PLU Big Sinks 26 Federal 1H								
Site: PLU Big Sinks 26 Federal 1H	Vertical (TVD) Reference:	SITE 3360.0								
Well: PLU Big Sinks 26 Federal 1H	Section (VS) Reference:	Well (0.00N,0.03E,358.47As)								
Wellpath: 26 Fed 1H 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: Igrf2005								
Site: PLU Big Sinks 26 Federal 1H										
Reeves Co. NM										
Site Position:	Northings: 4302E9.47 ft	Longitude: 32 10 55.377 W								
From: Map	Easting: 6882E9.42 ft	Latitude: 103 51 30.033 W								
Position Uncertainty: 0.00 ft		North Reference: Grid								
Ground Level: 3338.00 ft		Grid Convergence: 0.25 deg								
Well: PLU Big Sinks 26 Federal 1H										
Well Name:										
Well Position: +N-S 0.00 ft	Northings: 4302E9.47 ft	Latitude: 32 10 55.377 N								
+E-W 0.00 ft	Easting: 6882E9.42 ft	Longitude: 103 51 30.033 W								
Position Uncertainty: 0.00 ft										
Wellpath: 26 Fed 1H ST1										
Current Datum: SITE	Height 3360.00 ft	Drilled From: Surface								
Magnetic Data: 10/14/2009		Tie-on Depth: 0.00 ft								
Field Strength: 43781 nT		Above System Datum: Mean Sea Level								
Vertical Section: Depth From (TVD)	+N-S	Declination: 7.90 deg								
ft	ft	Mag Dip Angle: 60.16 deg								
0.00	0.00	+E-W	Direction deg							
		ft								
		0.00	358.47							
Survey Program for Definitive Wellpath										
Date: 12/23/2009	Validated: No	Version: 5								
Actual From	To	Toolcode	ToolName							
ft	ft									
152.20	3692.40	Survey #1: 152.20-6892.40	Gyro MS							
6605.00	13196.00	Survey #2: 6805.00-13196.00	Ryan MWD							
13242.00	13242.00	Survey #3: 13242.00-13242.00	Ryan MWD							
Survey										
MD	Incl	TVD	VS	Azin	N/S	E/W	Clr Dir.	Clr Azi.	Dog Leg	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
152.20	0.38	152.20	-0.50	185.74	-0.50	-0.05	0.50	185.74	0.25	Gyro
307.80	0.19	307.80	-1.00	84.84	-0.99	0.15	1.00	171.13	0.29	Gyro
481.90	0.48	481.89	-0.38	34.01	-0.35	0.85	0.92	113.06	0.22	Gyro
655.20	0.47	655.19	0.92	358.49	0.95	1.24	1.56	52.48	0.17	Gyro
744.30	0.43	744.23	1.64	10.36	1.60	1.35	2.15	30.79	0.19	Gyro
831.60	0.42	831.58	2.31	7.59	2.35	1.51	2.79	32.70	0.13	Gyro
882.90	0.19	882.88	2.47	1.89	2.51	1.52	2.94	31.23	0.74	Gyro
1050.50	0.14	1050.48	2.81	276.29	2.65	1.31	3.14	24.63	0.12	Gyro
1239.60	0.33	1239.58	2.80	263.25	2.81	0.54	2.88	10.80	0.10	Gyro
1428.00	0.32	1427.98	2.43	231.67	2.42	-0.42	2.46	350.25	0.09	Gyro
1516.90	0.51	1516.87	1.40	223.18	1.39	-1.52	2.04	211.91	0.16	Gyro
1804.90	0.72	1804.85	-0.01	232.08	-0.09	-3.14	3.14	269.33	0.08	Gyro
1993.30	1.07	1993.24	-1.68	234.68	-1.63	-5.51	5.81	251.61	0.19	Gyro
2181.50	1.04	2181.40	-4.05	213.94	-4.23	-7.90	8.97	241.67	0.20	Gyro
2369.70	0.75	2369.50	-0.50	202.41	-0.01	-9.32	11.55	230.03	0.10	Gyro
2557.40	0.56	2557.26	-0.25	172.94	-0.51	-9.60	13.51	225.26	0.26	Gyro
2745.20	1.04	2745.03	-12.48	165.66	-12.72	-8.88	15.57	215.27	0.08	Gyro
2933.10	1.25	2932.90	-15.84	144.64	-16.05	-7.37	17.66	204.68	0.25	Gyro
3121.00	1.51	3120.74	-19.13	126.21	-19.25	-4.24	19.71	192.43	0.25	Gyro
3308.60	0.98	3308.30	-20.67	87.08	-20.70	-0.70	20.71	181.93	0.54	Gyro



Ryan Energy Technologies COMPLETION REPORT



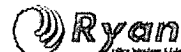
Company: Chesapeake Operating, Inc. Date: 12/23/2009 Time: 10:20:12 Page: 2
Field: Eddy Co, NM NAD 83 Co-ordinate(N/E) Reference: Site: PLU Big Sinks 26 Federal 1H
Site: PLU Big Sinks 26 Federal 1H Vertical (TVD) Reference: SITE 3360.0
Well: PLU Big Sinks 26 Federal 1H Section (V/S) Reference: Well (0.00N,0.00E,358.47Azi)
Wellpath: 26 Fed 1H ST1 Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

MD ft	Incl deg	TVD ft	V/S ft	Azin, deg	N/S ft	E/W ft	Clr Dist. ft	Clr Azi deg	Deg Leg deg/100ft	Tool
3497.20	0.67	3496.88	-21.42	134.23	-21.38	1.70	21.45	175.45	0.38	Gyro
3695.10	1.07	3684.76	-23.71	147.48	-23.63	3.43	23.68	171.73	0.24	Gyro
3873.20	0.46	3872.84	-25.78	136.71	-25.66	4.89	26.12	169.20	0.33	Gyro
4061.50	0.38	4061.14	-25.72	4.19	-25.59	5.46	26.16	167.96	0.41	Gyro
4249.60	0.48	4249.24	-24.53	42.06	-24.38	6.03	25.12	166.10	0.16	Gyro
4437.20	0.50	4436.83	-23.84	79.76	-23.65	7.36	24.77	162.71	0.17	Gyro
4625.50	0.51	4625.12	-23.66	98.19	-23.62	9.00	25.26	159.14	0.09	Gyro
4813.60	0.42	4813.22	-24.18	103.61	-23.91	10.50	26.11	156.29	0.05	Gyro
5001.30	0.22	5000.91	-24.39	93.98	-24.09	11.53	26.71	154.43	0.11	Gyro
5189.40	0.03	5189.01	-24.46	126.98	-24.15	11.93	26.93	153.71	0.10	Gyro
5377.20	0.09	5376.81	-24.34	356.97	-24.03	11.96	26.84	153.54	0.06	Gyro
5565.30	0.43	5564.91	-23.77	51.86	-23.45	12.51	26.57	151.92	0.20	Gyro
5753.30	0.03	5752.91	-23.37	115.11	-23.03	13.11	26.50	150.36	0.22	Gyro
5941.10	0.14	5940.71	-23.42	263.54	-23.08	12.92	26.45	150.75	0.09	Gyro
6129.20	0.46	6128.81	-23.90	230.71	-23.53	12.11	26.51	152.52	0.19	Gyro
6317.20	0.66	6316.80	-25.11	224.36	-24.33	10.77	27.07	156.55	0.11	Gyro
6504.60	0.68	6504.18	-26.49	234.13	-26.26	9.11	27.79	160.65	0.05	Gyro
6692.40	0.90	6691.97	-27.98	232.62	-27.30	7.04	28.66	165.60	0.12	Gyro
6880.50	0.70	6880.56	-28.64	256.30	-28.50	5.66	29.06	168.76	0.24	Ryan MWD
6899.00	1.20	6898.54	-27.90	329.40	-27.79	4.60	28.17	170.59	1.28	Ryan MWD
6999.00	2.50	6992.50	-24.99	358.30	-24.89	4.04	25.22	170.78	1.66	Ryan MWD
7086.00	4.90	7085.30	-19.02	5.40	-18.91	4.36	19.40	167.03	2.62	Ryan MWD
7180.00	9.80	7178.49	-7.05	3.30	-6.92	5.19	8.65	143.10	5.22	Ryan MWD
7274.00	13.60	7270.53	11.97	0.20	12.13	5.69	13.40	25.15	4.10	Ryan MWD
7369.00	16.10	7361.39	36.05	359.70	36.22	5.66	36.66	8.89	2.66	Ryan MWD
7461.00	18.30	7450.21	63.55	359.00	63.71	5.34	63.94	4.79	2.39	Ryan MWD
7555.00	19.30	7539.20	93.84	358.20	94.00	4.60	94.11	2.60	1.10	Ryan MWD
7649.00	20.90	7627.47	126.14	357.90	126.28	3.49	126.33	1.53	1.71	Ryan MWD
7744.00	21.00	7716.19	160.11	357.60	160.22	2.22	160.24	0.79	0.11	Ryan MWD
7838.00	20.40	7804.12	193.33	357.60	193.42	0.89	193.42	0.26	0.64	Ryan MWD
7932.00	19.20	7892.56	225.17	357.60	225.24	-0.45	225.24	359.69	1.28	Ryan MWD
8027.00	19.20	7882.28	256.40	356.80	256.44	-1.97	256.45	359.56	0.28	Ryan MWD
8120.00	19.30	8070.08	287.04	355.60	287.04	-3.95	287.06	359.21	0.37	Ryan MWD
8217.00	18.00	8161.58	318.03	356.60	317.99	-5.66	318.04	358.93	1.38	Ryan MWD
8312.00	19.40	8251.97	348.49	359.00	348.42	-7.06	348.49	358.64	1.65	Ryan MWD
8408.00	18.50	8342.76	379.66	359.10	379.59	-7.58	379.67	358.66	0.54	Ryan MWD
8524.00	21.30	8451.66	418.90	349.60	418.73	-11.67	418.90	358.40	3.68	Ryan MWD
8618.00	21.50	8539.38	452.96	354.90	452.69	-16.28	452.98	357.94	2.07	Ryan MWD
8712.00	22.10	8626.66	487.79	354.20	487.44	-19.60	487.63	357.70	0.70	Ryan MWD
8808.00	22.50	8713.65	523.39	1.40	523.02	-20.95	523.44	357.71	2.94	Ryan MWD
8999.00	22.50	8799.57	558.95	0.40	558.60	-20.39	558.97	357.91	0.41	Ryan MWD
9130.00	25.50	8827.88	571.53	2.50	571.20	-20.06	571.55	357.99	10.06	Ryan MWD
9262.00	30.40	8856.14	586.48	3.30	586.17	-19.29	586.49	358.12	15.36	Ryan MWD
9393.00	35.40	8882.16	603.25	3.40	602.93	-18.31	603.26	358.26	16.13	Ryan MWD
9524.00	40.70	8906.57	622.29	2.60	622.05	-17.31	622.29	358.41	17.17	Ryan MWD
9655.00	44.60	8929.36	643.24	2.30	643.03	-16.42	643.24	358.54	12.60	Ryan MWD
9687.00	46.70	8951.73	666.07	2.80	665.89	-15.40	666.07	358.68	8.68	Ryan MWD
9119.00	50.10	8972.31	689.18	2.50	689.05	-14.33	689.19	358.61	10.99	Ryan MWD
9149.00	54.60	8991.20	713.71	1.20	713.60	-13.54	713.73	358.91	15.52	Ryan MWD
9181.00	57.60	9008.55	740.31	0.00	740.22	-13.27	740.34	358.97	9.89	Ryan MWD
9212.00	60.50	9024.55	766.92	359.20	766.33	-13.46	766.95	358.99	8.59	Ryan MWD
9244.00	63.90	9039.77	795.22	359.10	795.13	-13.68	795.25	359.00	10.63	Ryan MWD
9275.00	67.20	9052.60	823.43	359.20	823.34	-14.30	823.47	359.01	10.65	Ryan MWD



Ryan Energy Technologies COMPLETION REPORT



Company: Chesapeake Operating, Inc.		Date: 12/23/2009		Time: 10:20:12		Page: 3					
Field: Fiddy Co. NM NAD 83		Co-ordinate(NF) Reference:		Site: P111 Big Sinks 26 Federal 1H							
Site: PLU Big Sinks 26 Federal 1H		Vertical (TVD) Reference:		SITE 3360.0							
Well: PLU Big Sinks 26 Federal 1H		Section (VS) Reference:		Well (U.U.N., U.U.L., S.S. 4.7/Azi)							
Wellpath: 26 Fed 1H ST1		Survey Calculation Method:		Minimum Curvature		Db: Sybase					
Survey											
MD ft	Incl deg	TVD ft	VS ft	Azim deg	NS ft	E/W ft	Clr D:n ft	Clr Azl deg	Dog Leg deg/100ft	Tool	
9308.00	68.50	9084.29	852.14	359.66	852.05	-14.60	652.18	359.02	4.36	Ryan MWD	
9337.00	68.00	9075.77	880.93	358.96	880.84	-14.97	680.97	359.02	2.65	Ryan MWD	
9369.00	69.60	9087.37	910.75	358.76	910.66	-15.60	910.79	359.02	4.72	Ryan MWD	
9400.00	73.40	9097.23	940.13	358.66	940.03	-13.29	940.18	359.01	12.58	Ryan MWD	
9432.00	77.10	9105.38	971.07	359.06	970.97	-13.94	971.12	359.06	11.63	Ryan MWD	
9463.00	80.10	9111.59	1001.46	359.26	1001.35	-17.42	1001.50	359.06	9.70	Ryan MWD	
9494.00	81.90	9116.35	1032.07	0.10	1031.97	-17.60	1032.12	359.02	5.48	Ryan MWD	
9526.00	84.80	9120.06	1063.84	0.10	1063.75	-17.55	1063.89	359.06	9.06	Ryan MWD	
9559.00	89.60	9121.87	1086.77	0.10	1086.70	-17.49	1086.84	359.06	11.55	Ryan MWD	
9653.00	90.80	9121.34	1190.74	359.96	1190.70	-17.49	1190.82	359.16	1.29	Ryan MWD	
9747.00	91.50	9119.46	1264.71	358.76	1264.57	-13.64	1264.90	359.17	1.48	Ryan MWD	
9841.00	92.10	9116.50	1378.66	357.76	1378.57	-21.59	1378.74	359.16	1.24	Ryan MWD	
9936.00	92.70	9112.52	1473.55	356.96	1473.38	-23.06	1473.51	358.96	1.05	Ryan MWD	
10030.00	91.70	9108.92	1587.46	357.46	1587.20	-31.73	1587.50	358.88	1.19	Ryan MWD	
10123.00	90.70	9106.97	1680.43	357.96	1680.10	-34.54	1680.46	358.81	1.20	Ryan MWD	
10217.00	91.20	9105.41	1754.41	357.66	1754.01	-38.23	1754.43	358.75	0.62	Ryan MWD	
10311.00	90.60	9104.02	1848.39	359.06	1847.96	-41.02	1848.41	358.73	1.67	Ryan MWD	
10405.00	91.20	9102.62	1942.38	357.86	1941.91	-43.64	1942.40	358.71	1.48	Ryan MWD	
10500.00	90.60	9101.21	2037.36	359.66	2036.37	-45.80	2037.38	358.71	2.03	Ryan MWD	
10593.00	89.60	9101.13	2130.34	358.76	2129.98	-48.37	2130.37	358.75	0.97	Ryan MWD	
10687.00	87.90	9105.18	2224.29	0.10	2223.84	-48.53	2224.32	358.86	1.88	Ryan MWD	
10781.00	88.20	9108.39	2318.19	0.30	2317.78	-45.20	2318.24	358.86	0.38	Ryan MWD	
10875.00	88.30	9106.25	2412.11	0.00	2411.74	-45.06	2412.18	358.91	0.34	Ryan MWD	
10969.00	88.90	9111.55	2506.07	358.36	2505.70	-47.35	2506.14	358.92	1.92	Ryan MWD	
11063.00	90.30	9112.20	2600.06	357.56	2599.33	-50.60	2600.12	358.88	1.72	Ryan MWD	
11156.00	90.00	9111.55	2695.65	359.16	2694.30	-54.44	2695.11	359.04	0.71	Ryan MWD	
11252.00	88.70	9115.02	2789.04	359.36	2788.52	-53.57	2789.10	358.84	1.88	Ryan MWD	
11345.00	88.50	9115.29	2882.00	359.06	2881.48	-57.85	2882.07	358.85	0.39	Ryan MWD	
11440.00	88.40	9117.86	2976.97	358.66	2976.43	-59.78	2977.03	358.85	0.24	Ryan MWD	
11534.00	89.30	9119.75	3070.94	359.16	3070.40	-61.50	3071.01	358.85	1.01	Ryan MWD	
11628.00	90.20	9120.16	3164.93	359.56	3164.39	-62.65	3165.01	358.87	1.05	Ryan MWD	
11723.00	89.60	9120.16	3259.92	358.96	3259.38	-63.97	3260.01	358.88	0.76	Ryan MWD	
11817.00	87.50	9122.37	3353.69	359.36	3353.33	-65.45	3353.97	358.86	2.48	Ryan MWD	
11911.00	87.10	9126.80	3447.77	359.06	3447.22	-68.84	3447.97	358.85	0.53	Ryan MWD	
12005.00	89.10	9129.92	3541.71	359.26	3541.15	-69.32	3541.81	358.85	2.14	Ryan MWD	
12098.00	89.60	9130.81	3634.70	358.36	3634.12	-70.35	3634.80	358.85	1.23	Ryan MWD	
12192.00	90.00	9130.97	3728.70	358.36	3728.08	-73.14	3728.30	358.88	0.21	Ryan MWD	
12286.00	88.30	9132.37	3822.68	357.46	3822.00	-73.66	3822.77	358.85	2.05	Ryan MWD	
12375.00	88.40	9134.93	3911.62	356.76	3910.34	-81.24	3911.39	358.81	0.79	Ryan MWD	
12470.00	89.10	9137.00	4006.65	356.06	4005.97	-83.62	4006.61	358.76	0.74	Ryan MWD	
12566.00	87.90	9138.52	4102.50	358.26	4101.54	-90.81	4102.55	358.73	1.92	Ryan MWD	
12662.00	88.20	9142.78	4196.44	357.36	4197.41	-94.58	4198.47	358.71	0.99	Ryan MWD	
12758.00	88.50	9145.55	4294.38	356.56	4293.23	-99.77	4294.39	358.67	0.89	Ryan MWD	
12853.00	88.60	9147.95	4389.27	356.36	4388.01	-105.73	4389.28	358.62	0.24	Ryan MWD	
12949.00	89.70	9148.38	4485.15	355.26	4483.73	-112.84	4485.15	358.56	1.62	Ryan MWD	
13045.00	90.60	9148.68	4580.64	354.36	4579.33	-121.63	4580.64	358.48	1.43	Ryan MWD	
13141.00	91.20	9147.28	4676.63	353.76	4674.79	-131.66	4676.54	358.36	0.75	Ryan MWD	
13196.00	92.00	9145.75	4731.41	353.46	4729.42	-137.84	4731.42	358.32	1.55	Ryan MWD	
13242.00	92.00	9144.14	4777.20	353.46	4775.98	-143.12	4777.23	358.28	0.00	PROJECTED	



Chesapeake Operating, Inc.

Field: Eddy Co, NM NAD 83
 Site: PLU Big Sinks 26 Federal 1H
 Well: PLU Big Sinks 26 Federal 1H
 Wellpath: 26 Fed 1H ST1



Adjustment to Grid North
 True North: 9.25°
 Magnetic North: 7.85°
 Magnetic Field
 Strength: 4878 nT
 Declination: 13.15°
 Scale: 10.14 nT/Gauss
 Model: IGRF2005

SITE DETAILS

PLU Big Sinks 26 Federal 1H
 Reeves Co, NM
 Site Centre Northing: 430229.47
 Easting: 633203.32
 Ground Level: 3332.63
 Positional Uncertainty: 0.03
 Convergence: 2.25

FIELD DETAILS

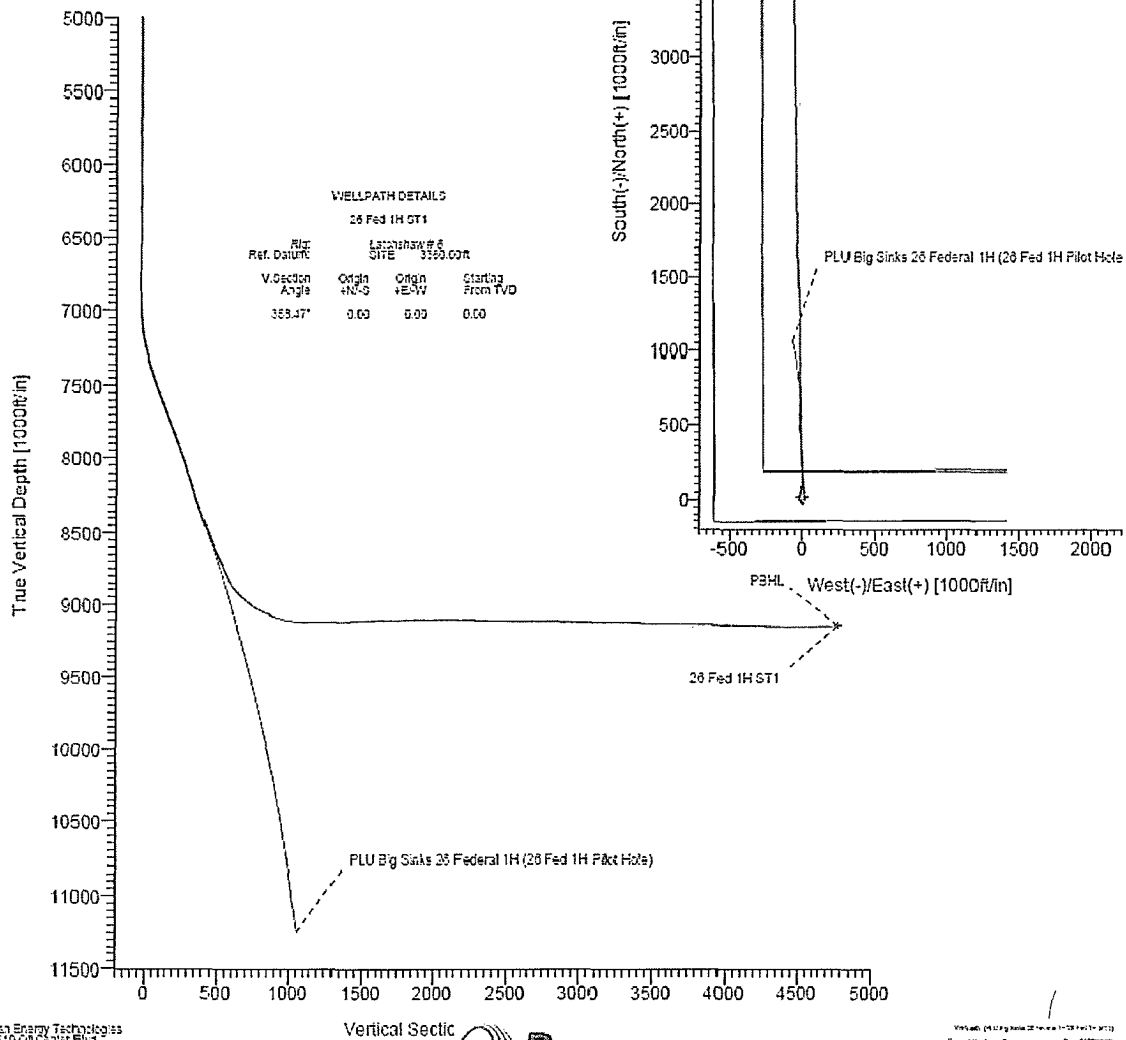
Eddy Co, NM NAD 83
 USA
 Geodetic System: US State Plane Coordinate System 1983
 Ellipsoid: GRS 1980
 Zone: New Mexico, Eastern Zone
 Magnetic Model: IGRF2005
 System Datum: Mean Sea Level
 Local North: Grid North

TARGET DETAILS

Name	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude	Shape
PEHL	9140.03	4775.00	-65.10	435064.47	633203.32	32°11'42.633N	103°51'10.750W	Point

WELLPATH DETAILS

26 Fed 1H ST1
 Ref. Datum: SITE
 Lat/Long # 8
 SITE: 3320.00m
 V. Section Angle: 353.47°
 Origin +N-S: 0.00
 Origin +E-W: 0.00
 Starting From TVD: 0.00



Ryan Energy Technology
 12510 Old Center Blvd
 Houston, TX 77023
 PH 281-443-1414
 FX 281-443-1576



Version: 04/10/2005 10:00:00 AM
 Company: Ryan Energy
 Project: 26 Fed 1H ST1
 Drawn: Ryan Energy
 Checked: Ryan Energy
 Approved: Ryan Energy