

RCVD DEC 5 '11

OIL CONS. DIV.

District I
1625 N. French Dr, Hobbs, NM 88240
Phone: (575) 393-6161 Fax (575) 393-0720

District II
811 S First St., Artesia, NM 88210
Phone (575) 748-1283 Fax (575) 748-9720

District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone (505) 334-6178 Fax (505) 334-6170

District IV
1220 S St Francis Dr., Santa Fe, NM 87505
Phone (505) 476-3460 Fax (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☒ AMENDED REPORT
"AS DRILLED"

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-039-27337	² Pool Code 71629	³ Pool Name Basin Fruitland Coal
⁴ Property Code 32567	⁵ Property Name Elkhorn	⁶ Well Number 100
⁷ OGRID No. 162928	⁸ Operator Name Energen Resources Corporation	⁹ Elevation 6682'

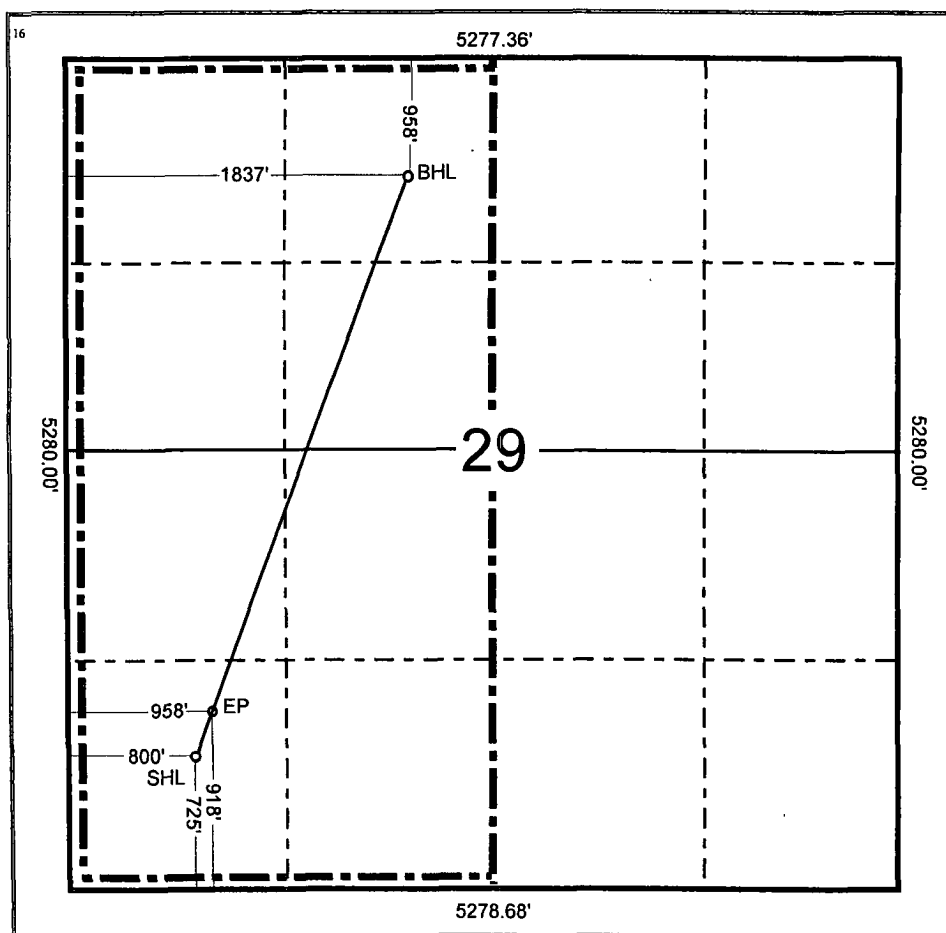
¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	29	32N	5W		725	South	800	West	Rio Arriba

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	29	32N	5W		958	North	1837	West	Rio Arriba
¹² Dedicated Acres 320 - W/2	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.						

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

¹⁷ OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Nathan Smith
Signature

11/2/2011

Date

Nathan Smith
Printed Name

nsmith@energen.com
E-mail Address

¹⁸ SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

November 6, 2002

Date of Survey

Signature and Seal of Professional Surveyor:

Original survey conducted and recorded by:
Jason C. Edwards

15269

Certificate Number

Elkhorn #100 STK
Sec29 T32N-R05W - #100 STK
Rio Arriba Co. NM
GL: 6682' KB: 15'

RCVD NOV 29 '11

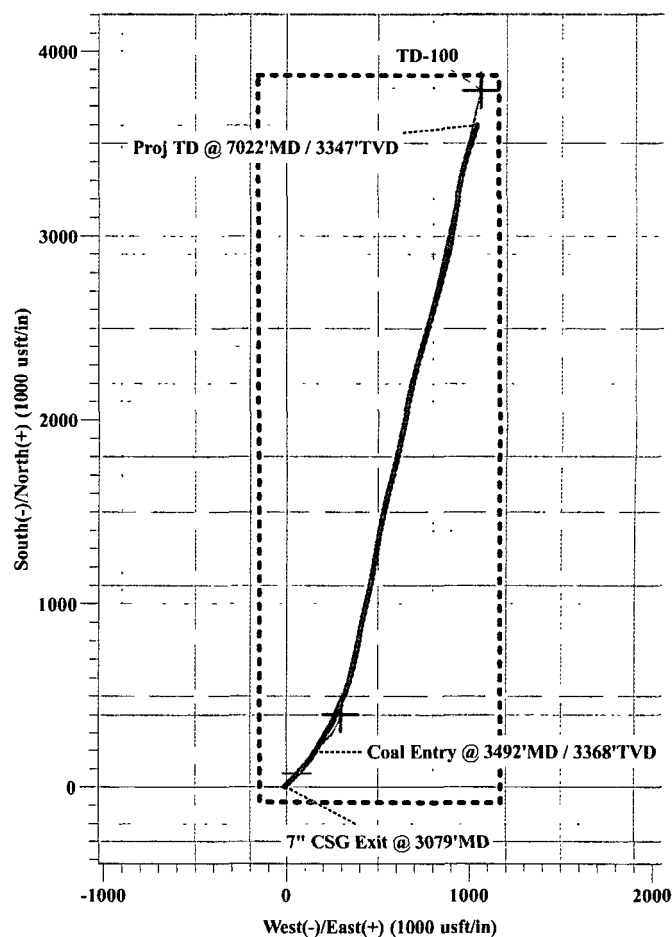
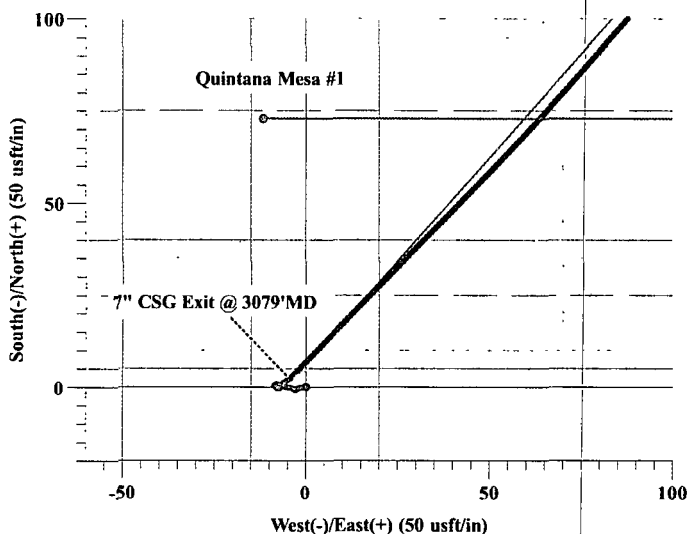
OIL CONS. DIV.

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
LAND	3382.0	400.0	300.0	2166047.15	1307017.88	36° 56' 49.699 N	107° 23' 27.432 W	Point
TD	3382.0	3786.7	1060.7	2169424.51	1307819.12	36° 57' 23.184 N	107° 23' 18.060 W	Point

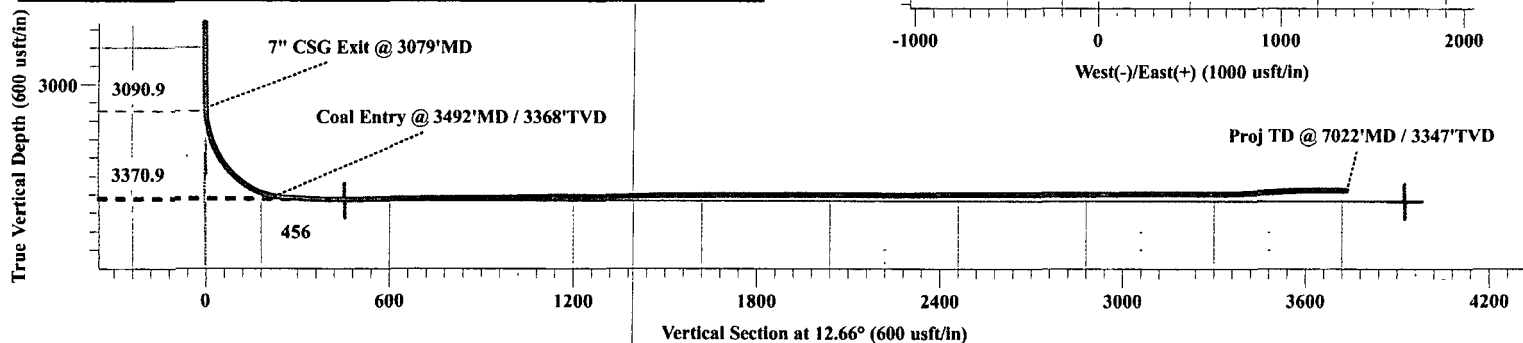
EOW

No Hardline Crossed



WELL DETAILS: Elkhorn #100 STK

		6682.0	
Northing	Easting	Latitude	Longitude
2165650.77	1306713.11	36° 56' 45.744 N	107° 23' 31.128 W



SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
3091.0	1.26	61.82	3090.9	2.4	-4.1	0.00	0.00	1.4	
3516.0	86.19	41.20	3370.9	202.2	173.5	20.00	-20.65	235.4	
3610.5	86.19	41.20	3377.1	273.1	235.6	0.00	0.00	318.1	
3754.3	90.00	12.66	3382.0	400.0	300.0	20.00	-83.04	456.0	LAND-100
7225.4	90.00	12.66	3382.0	3786.7	1060.7	0.00	0.00	3927.1	

Plan: Design #5 (Elkhorn #100 STK/STK)

Energen Resources

Rio Arriba County

Sec29 T32N-R05W - #100 STK

Elkhorn #100 STK

STK

Design: STK

Standard Survey Report

21 October, 2011

Survey Report

Company: Energen Resources
 Project: Rio Arriba County
 Site: Sec29 T32N-R05W - #100 STK
 Well: Elkhom #100 STK
 Wellbore: STK
 Design: STK

Local Co-ordinate Reference: Well Elkhom #100 STK
 TVD Reference: WELL @ 6697.0usft (Original Well Elev)
 MD Reference: WELL @ 6697.0usft (Original Well Elev)
 North Reference: True
 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.1 Single User Db

Project	Rio Arriba County	System Datum:	Mean Sea Level
Map System:	US State Plane 1983		
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Central Zone		

Site	Sec29 T32N-R05W - #100 STK				
Site Position:		Northing:	2,165,650.77 usft	Latitude:	36° 56' 45.744 N
From:	Lat/Long	Easting:	1,306,713.11 usft	Longitude:	107° 23' 31.128 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.69 °

Well	Elkhorn #100 STK					
Well Position	+N/-S	0.0 usft	Northing:	2,165,650.77 usft	Latitude:	36° 56' 45.744 N
	+E/-W	0.0 usft	Easting:	1,306,713.11 usft	Longitude:	107° 23' 31.128 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	6,682.0 usft

Wellbore	STK				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/11/11	9.72	63.70	50,868

Design	STK				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	12.66	

Survey Program	Date	10/21/11			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.0	7,022.0	Survey #1 (STK)	MWD	MWD - Standard	

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.11	242.38	100.0	0.0	-0.1	-0.1	0.11	0.11	0.00
200.0	0.11	264.76	200.0	-0.1	-0.3	-0.2	0.04	0.00	22.38
300.0	0.30	260.63	300.0	-0.1	-0.6	-0.3	0.19	0.19	-4.13
400.0	0.26	271.04	400.0	-0.2	-1.1	-0.4	0.06	-0.04	10.41
500.0	0.34	282.47	500.0	-0.1	-1.6	-0.5	0.10	0.08	11.43
600.0	0.26	235.87	600.0	-0.2	-2.1	-0.6	0.25	-0.08	-46.60
700.0	0.16	194.45	700.0	-0.4	-2.3	-0.9	0.18	-0.10	-41.42
800.0	0.15	209.43	800.0	-0.7	-2.4	-1.2	0.04	-0.01	14.98
900.0	0.16	241.24	900.0	-0.9	-2.6	-1.4	0.09	0.01	31.81

Survey Report

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 Wellbore: STK
 Design: STK

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 North Reference: True
 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,000.0	0.15	273.36	1,000.0	-0.9	-2.9	-1.5	0.09	-0.01	32.12
1,100.0	0.21	311.18	1,100.0	-0.8	-3.1	-1.5	0.13	0.06	37.82
1,200.0	0.21	322.43	1,200.0	-0.5	-3.4	-1.3	0.04	0.00	11.25
1,300.0	0.17	303.66	1,300.0	-0.3	-3.6	-1.1	0.07	-0.04	-18.77
1,400.0	0.33	277.15	1,400.0	-0.2	-4.0	-1.1	0.19	0.16	-26.51
1,500.0	0.40	277.45	1,500.0	-0.1	-4.7	-1.1	0.07	0.07	0.30
1,600.0	0.48	281.59	1,600.0	0.0	-5.4	-1.2	0.09	0.08	4.14
1,700.0	0.43	285.15	1,700.0	0.2	-6.2	-1.2	0.06	-0.05	3.56
1,800.0	0.50	288.97	1,800.0	0.4	-7.0	-1.1	0.08	0.07	3.82
1,900.0	0.24	307.00	1,900.0	0.7	-7.5	-1.0	0.28	-0.26	18.03
2,000.0	0.17	286.90	2,000.0	0.9	-7.8	-0.9	0.10	-0.07	-20.10
2,100.0	0.39	248.55	2,100.0	0.8	-8.3	-1.0	0.28	0.22	-38.35
2,200.0	0.14	133.18	2,200.0	0.6	-8.5	-1.3	0.47	-0.25	-115.37
2,300.0	0.14	159.04	2,300.0	0.4	-8.4	-1.5	0.06	0.00	25.86
2,400.0	0.17	165.56	2,400.0	0.1	-8.3	-1.7	0.03	0.03	6.52
2,500.0	0.24	126.78	2,500.0	-0.1	-8.1	-1.9	0.15	0.07	-38.78
2,600.0	0.33	135.06	2,600.0	-0.5	-7.7	-2.2	0.10	0.09	8.28
2,700.0	0.27	57.09	2,700.0	-0.5	-7.3	-2.1	0.38	-0.06	-77.97
2,800.0	0.37	11.06	2,800.0	-0.1	-7.1	-1.6	0.27	0.10	-46.03
2,900.0	0.58	37.43	2,900.0	0.6	-6.7	-0.9	0.30	0.21	26.37
3,000.0	1.00	56.88	3,000.0	1.5	-5.7	0.2	0.49	0.42	19.45
3,079.0	1.23	61.29	3,078.9	2.3	-4.4	1.3	0.31	0.29	5.58
7" CSG Exit @ 3079'MD									
3,152.6	16.18	43.08	3,151.5	10.2	3.4	10.7	20.39	20.30	-24.73
3,184.4	23.04	44.29	3,181.5	17.9	10.8	19.8	21.61	21.57	3.81
3,216.3	28.40	44.09	3,210.1	27.8	20.4	31.6	16.85	16.84	-0.63
3,248.0	33.94	44.64	3,237.3	39.5	31.9	45.6	17.47	17.45	1.73
3,279.9	40.36	44.15	3,262.7	53.3	45.4	62.0	20.12	20.10	-1.53
3,311.7	46.60	42.91	3,285.7	69.2	60.4	80.7	19.84	19.66	-3.91
3,343.5	52.06	41.01	3,306.5	87.1	76.5	101.7	17.77	17.18	-5.98
3,375.3	57.24	41.59	3,324.9	106.6	93.6	124.5	16.34	16.27	1.82
3,407.2	62.70	38.69	3,340.8	127.7	111.4	149.0	18.86	17.14	-9.10
3,438.8	69.20	36.56	3,353.7	150.5	129.0	175.2	21.44	20.54	-6.73
3,470.6	75.80	34.80	3,363.3	175.2	146.7	203.1	21.39	20.74	-5.53
3,492.0	80.94	32.83	3,367.6	192.6	158.3	222.6	25.69	24.06	-9.21
Coal Entry @ 3492'MD / 3368'TVD									
3,499.1	82.66	32.19	3,368.6	198.5	162.1	229.2	25.69	24.10	-9.01
3,531.0	86.00	30.94	3,371.7	225.5	178.7	259.2	11.18	10.48	-3.92
3,594.0	86.79	27.79	3,375.7	280.3	209.5	319.4	5.15	1.25	-5.00
3,657.0	88.55	27.68	3,378.3	336.0	238.8	380.2	2.80	2.79	-0.17
3,721.0	89.16	25.54	3,379.5	393.3	267.5	442.3	3.48	0.95	-3.34
3,784.0	93.03	24.70	3,378.3	450.3	294.2	503.8	6.29	6.14	-1.33
3,848.0	89.96	20.09	3,376.7	509.4	318.6	566.8	8.65	-4.80	-7.20
3,911.0	91.36	18.83	3,375.9	568.8	339.6	629.4	2.99	2.22	-2.00

Survey Report

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Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,975.0	90.57	14.41	3,374.9	630.1	357.9	693.2	7.01	-1.23	-6.91
4,038.0	90.75	13.15	3,374.1	691.3	372.9	756.2	2.02	0.29	-2.00
4,098.0	89.96	12.25	3,373.8	749.8	386.1	816.2	2.00	-1.32	-1.50
4,160.0	91.19	8.90	3,373.1	810.7	397.4	878.1	5.76	1.98	-5.40
4,221.0	90.57	9.42	3,372.2	871.0	407.2	939.0	1.33	-1.02	0.85
4,282.0	91.19	14.46	3,371.3	930.6	419.8	1,000.0	8.32	1.02	8.26
4,343.0	91.71	13.66	3,369.7	989.8	434.6	1,060.9	1.56	0.85	-1.31
4,404.0	90.66	12.48	3,368.5	1,049.2	448.4	1,121.9	2.59	-1.72	-1.93
4,465.0	89.60	10.88	3,368.3	1,108.9	460.7	1,182.9	3.15	-1.74	-2.62
4,526.0	89.78	9.97	3,368.6	1,168.9	471.8	1,243.9	1.52	0.30	-1.49
4,588.0	89.52	10.38	3,369.0	1,229.9	482.7	1,305.8	0.78	-0.42	0.66
4,650.0	92.15	10.07	3,368.1	1,290.9	493.7	1,367.7	4.27	4.24	-0.50
4,712.0	91.45	9.43	3,366.2	1,352.0	504.2	1,429.6	1.53	-1.13	-1.03
4,773.0	91.54	10.56	3,364.6	1,412.1	514.8	1,490.5	1.86	0.15	1.85
4,835.0	90.13	10.96	3,363.7	1,473.0	526.4	1,552.5	2.36	-2.27	0.65
4,896.0	90.31	13.54	3,363.4	1,532.6	539.3	1,613.5	4.24	0.30	4.23
4,957.0	90.31	14.94	3,363.1	1,591.7	554.3	1,674.5	2.30	0.00	2.30
5,019.0	89.69	14.72	3,363.1	1,651.6	570.2	1,736.4	1.06	-1.00	-0.35
5,080.0	90.22	14.09	3,363.2	1,710.7	585.4	1,797.4	1.35	0.87	-1.03
5,142.0	91.28	12.93	3,362.4	1,771.0	599.8	1,859.4	2.53	1.71	-1.87
5,203.0	89.96	12.44	3,361.7	1,830.5	613.2	1,920.4	2.31	-2.16	-0.80
5,265.0	89.69	11.36	3,361.9	1,891.1	626.0	1,982.4	1.80	-0.44	-1.74
5,326.0	89.96	11.37	3,362.1	1,951.0	638.0	2,043.4	0.44	0.44	0.02
5,387.0	90.13	10.77	3,362.0	2,010.8	649.8	2,104.3	1.02	0.28	-0.98
5,448.0	89.87	10.94	3,362.0	2,070.7	661.2	2,165.3	0.51	-0.43	0.28
5,509.0	89.69	12.82	3,362.3	2,130.4	673.8	2,226.3	3.10	-0.30	3.08
5,571.0	90.31	14.37	3,362.3	2,190.7	688.4	2,288.3	2.69	1.00	2.50
5,631.0	90.40	14.76	3,361.9	2,248.7	703.5	2,348.2	0.67	0.15	0.65
5,693.0	90.75	15.43	3,361.3	2,308.6	719.6	2,410.2	1.22	0.56	1.08
5,755.0	90.66	15.44	3,360.5	2,368.4	736.1	2,472.1	0.15	-0.15	0.02
5,816.0	89.78	14.68	3,360.3	2,427.3	752.0	2,533.1	1.91	-1.44	-1.25
5,880.0	90.40	15.88	3,360.2	2,489.0	768.8	2,597.0	2.11	0.97	1.88
5,943.0	89.87	16.02	3,360.0	2,549.6	786.1	2,659.9	0.87	-0.84	0.22
6,007.0	89.87	16.05	3,360.2	2,611.1	803.8	2,723.8	0.05	0.00	0.05
6,070.0	90.48	15.29	3,360.0	2,671.7	820.8	2,786.7	1.55	0.97	-1.21
6,134.0	89.43	15.88	3,360.0	2,733.4	838.0	2,850.6	1.88	-1.64	0.92
6,197.0	90.13	15.78	3,360.3	2,794.0	855.2	2,913.5	1.12	1.11	-0.16
6,261.0	91.19	14.50	3,359.5	2,855.8	871.9	2,977.4	2.60	1.66	-2.00
6,324.0	91.28	12.48	3,358.2	2,917.0	886.6	3,040.4	3.21	0.14	-3.21
6,388.0	90.04	9.87	3,357.4	2,979.8	899.0	3,104.4	4.51	-1.94	-4.08
6,451.0	89.60	9.20	3,357.6	3,041.9	909.4	3,167.3	1.27	-0.70	-1.06
6,515.0	89.52	8.52	3,358.1	3,105.2	919.3	3,231.1	1.07	-0.13	-1.06
6,578.0	88.99	8.66	3,358.9	3,167.4	928.7	3,294.0	0.87	-0.84	0.22

Survey Report

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Survey

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6,641.0	92.24	10.40	3,358.3	3,229.6	939.1	3,356.9	5.85	5.16	2.76
6,705.0	92.95	10.18	3,355.4	3,292.5	950.6	3,420.7	1.16	1.11	-0.34
6,769.0	93.56	13.97	3,351.7	3,354.9	963.9	3,484.6	5.99	0.95	5.92
6,832.0	92.33	16.69	3,348.5	3,415.6	980.6	3,547.5	4.73	-1.95	4.32
6,896.0	91.71	18.10	3,346.2	3,476.6	999.7	3,611.2	2.41	-0.97	2.20
6,966.0	88.90	17.03	3,345.9	3,543.4	1,020.8	3,680.9	4.30	-4.01	-1.53
7,022.0	88.90	17.03	3,346.9	3,596.9	1,037.2	3,736.8	0.00	0.00	0.00

Proj TD @ 7022'MD / 3347'TVD

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
3,079.0	3,078.9	2.3	-4.4	7" CSG Exit @ 3079'MD
3,492.0	3,367.6	192.6	158.3	Coal Entry @ 3492'MD / 3368'TVD
7,022.0	3,346.9	3,596.9	1,037.2	Proj TD @ 7022'MD / 3347'TVD

Checked By: _____ Approved By: _____ Date: _____