

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

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 October 12, 2005
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-039-30905	² Pool Code 71629	³ Pool Name Basin Fruitland Coal
⁴ Property Code 35597	⁵ Property Name Carracas 30B	⁶ Well Number 6H
⁷ OGRID No. 162928	⁸ Operator Name ENERGEN RESOURCES CORPORATION	⁹ Elevation 7,405'

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
L	20	32N	04W		1,560'	South	741'	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
D	30	32N	04W		987'	North	550'	West	Rio Arriba

¹² Dedicated Acres 310.45 N/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 Signature: Date: 10/10/11 Andrew Soto Printed Name
	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. July 31, 2009 Date of Survey Original Survey Conducted and Recorded By: David R. Russell 10201 Certificate Number

D & J DRILLING L.L.C.
P. O. BOX 49
FARMINGTON, NM 87499

ORIGINAL

DATE: 07/26/11

RIG # 2

ENERGEN RESOURCES CORPORATION
2010 AFTON PLACE
FARMINGTON, N.M. 87401

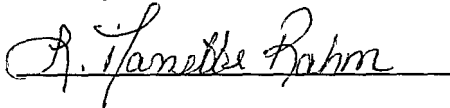
ATTN: Mr. DOUG THOMAS

THIS LETTER IS TO CERTIFY THAT D & J DRILLING, DID RUN DEVIATION SURVEYS AT THE LISTED DEPTH ON YOUR CARRACAS 30B #6H WELL, IN SECTION 20 T32N R04W IN RIO ARRIBA COUNTY, NEW MEXICO. **API WELL NUMBER, 30-039-30905**

DEPTH	DEGREE DEVIATION
106	3/4
199	3/4

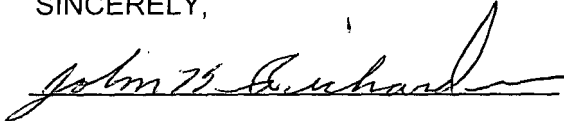
TO THE BEST OF MY KNOWLEDGE, I SWEAR THIS INFORMATION TO BE TRUE.

State of New Mexico
County of San Juan

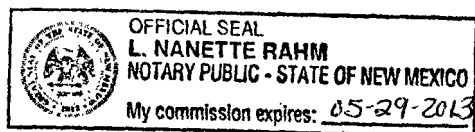


Notary Public, L. Nanette Rahm

SINCERELY,



John K. Richardson
Owner/Partner



AV

Energen Resources

Rio Arriba County

Sec20 T32N-R4W - 30B

Carracas 30B#6

Wellbore #1

Design: Wellbore #1



Standard Survey Report

22 July, 2011

Survey Report

Company:	Energen Resources	Local Co-ordinate Reference:	Well Carracas 30B#6
Project:	Rio Arriba County	TVD Reference:	WELL @ 7420.0usft (Original Well Elev)
Site:	Sec20 T32N-R4W - 30B	MD Reference:	WELL @ 7420.0usft (Original Well Elev)
Well:	Carracas 30B#6	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

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

Site	Sec20 T32N-R4W - 30B				
Site Position:		Northing:	2,173,735.14 usft	Latitude:	36° 58' 9.228 N
From:	Lat/Long	Easting:	1,338,210.11 usft	Longitude:	107° 17' 4.236 W
Position Uncertainty:	0 0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0 62 °

Well	Carracas 30B#6					
Well Position	+N/-S	0.0 usft	Northing:	2,173,735.14 usft	Latitude:	36° 58' 9.228 N
	+E/-W	0.0 usft	Easting:	1,338,210.11 usft	Longitude:	107° 17' 4.236 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	7,420 0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	06/20/11	9.72	63.75	50,921

Design	Wellbore #1				
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	244.31	

Survey Program	Date	07/22/11			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
265.0	10,167.0	Survey #1 (Wellbore #1)	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
265 0	0 18	343.57	265.0	0 4	-0.1	-0 1	0 07	0.07	0.00
360.0	0 35	29 21	360.0	0 8	0.0	-0 3	0 27	0.18	48 04
455 0	0 26	40.26	455.0	1 2	0.3	-0 8	0 11	-0.09	11.63
550.0	0 26	71 18	550.0	1 4	0.6	-1 2	0 15	0.00	32.55
646 0	0 09	56 30	646.0	1 6	0.9	-1 5	0 18	-0.18	-15.50
742 0	0 09	73.79	742.0	1 6	1.0	-1 6	0 03	0 00	18 22
837 0	0 09	313 16	837.0	1 7	1.0	-1 7	0 16	0.00	-126.98
931 0	0 09	2 09	931 0	1 8	1 0	-1 7	0 08	0 00	52.05
1,027 0	0 09	121.00	1,027 0	1 9	1 0	-1 7	0 16	0.00	123.86

Survey Report

Company: Energen Resources
 Project: Rio Arriba County
 Site: Sec20 T32N-R4W - 30B
 Well: Carracas 30B#6
 Wellbore: Wellbore #1
 Design: Wellbore #1

Local Co-ordinate Reference: Well Carracas 30B#6
 TVD Reference: WELL @ 7420.0usft (Original Well Elev)
 MD Reference: WELL @ 7420.0usft (Original Well Elev)
 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)
1,123.0	0.79	278.81	1,123.0	1.9	0.5	-1.2	0.91	0.73	164.39
1,218.0	0.35	166.81	1,218.0	1.7	-0.1	-0.6	1.03	-0.46	-117.89
1,314.0	0.53	162.45	1,314.0	1.0	0.1	-0.5	0.19	0.19	-4.54
1,410.0	0.44	171.23	1,410.0	0.2	0.3	-0.3	0.12	-0.09	9.15
1,505.0	0.62	187.23	1,505.0	-0.6	0.3	0.0	0.24	0.19	16.84
1,600.0	0.79	191.34	1,600.0	-1.8	0.1	0.7	0.19	0.18	4.33
1,696.0	0.70	196.89	1,696.0	-3.0	-0.2	1.5	0.12	-0.09	5.78
1,792.0	0.88	212.44	1,792.0	-4.2	-0.8	2.5	0.29	0.19	16.20
1,888.0	0.97	218.81	1,887.9	-5.4	-1.7	3.9	0.14	0.09	6.64
1,983.0	1.06	231.33	1,982.9	-6.6	-2.9	5.5	0.25	0.09	13.18
2,077.0	1.23	241.91	2,076.9	-7.6	-4.5	7.3	0.29	0.18	11.26
2,172.0	0.97	238.38	2,171.9	-8.5	-6.1	9.2	0.28	-0.27	-3.72
2,268.0	0.88	242.85	2,267.9	-9.3	-7.4	10.7	0.12	-0.09	4.66
2,364.0	0.88	239.98	2,363.9	-10.0	-8.7	12.2	0.05	0.00	-2.99
2,458.0	0.97	231.75	2,457.9	-10.8	-9.9	13.7	0.17	0.10	-8.76
2,552.0	1.23	243.42	2,551.8	-11.8	-11.5	15.5	0.36	0.28	12.41
2,646.0	1.23	246.28	2,645.8	-12.7	-13.3	17.5	0.07	0.00	3.04
2,739.0	1.41	253.91	2,738.8	-13.4	-15.3	19.6	0.27	0.19	8.20
2,830.0	1.58	231.81	2,829.8	-14.5	-17.4	21.9	0.66	0.19	-24.29
2,921.0	1.32	212.05	2,920.7	-16.1	-18.9	24.0	0.61	-0.29	-21.71
2,981.0	1.49	202.90	2,980.7	-17.4	-19.6	25.2	0.47	0.28	-15.25
3,011.0	2.55	195.37	3,010.7	-18.4	-19.9	25.9	3.63	3.53	-25.10
3,040.0	3.78	192.73	3,039.7	-20.0	-20.3	27.0	4.27	4.24	-9.10
3,070.0	5.01	189.56	3,069.6	-22.2	-20.7	28.3	4.18	4.10	-10.57
3,099.0	6.07	189.75	3,098.4	-25.0	-21.2	29.9	3.66	3.66	0.66
3,130.0	7.56	190.28	3,129.2	-28.6	-21.8	32.1	4.81	4.81	1.71
3,160.0	9.15	191.83	3,158.9	-32.9	-22.7	34.7	5.35	5.30	5.17
3,190.0	11.17	191.25	3,188.4	-38.1	-23.7	37.9	6.74	6.73	-1.93
3,220.0	13.28	190.87	3,217.7	-44.3	-25.0	41.7	7.04	7.03	-1.27
3,250.0	14.95	190.44	3,246.8	-51.5	-26.3	46.0	5.58	5.57	-1.43
3,281.0	16.00	189.11	3,276.7	-59.7	-27.7	50.8	3.58	3.39	-4.29
3,311.0	16.97	187.72	3,305.5	-68.1	-29.0	55.6	3.49	3.23	-4.63
3,342.0	18.29	185.30	3,335.0	-77.4	-30.0	60.6	4.87	4.26	-7.81
3,372.0	20.14	183.83	3,363.3	-87.2	-30.8	65.6	6.37	6.17	-4.90
3,402.0	22.34	182.74	3,391.3	-98.1	-31.4	70.8	7.45	7.33	-3.63
3,432.0	24.27	181.98	3,418.9	-110.0	-31.9	76.4	6.51	6.43	-2.53
3,462.0	26.56	180.92	3,445.9	-122.8	-32.2	82.3	7.78	7.63	-3.53
3,492.0	28.49	180.33	3,472.6	-136.7	-32.4	88.4	6.50	6.43	-1.97
3,521.0	30.42	179.70	3,497.8	-150.9	-32.4	94.6	6.74	6.66	-2.17
3,552.0	32.27	179.29	3,524.3	-167.1	-32.2	101.5	6.01	5.97	-1.32
3,583.0	34.12	179.23	3,550.2	-184.0	-32.0	108.6	5.97	5.97	-0.19
3,613.0	35.79	179.81	3,574.8	-201.2	-31.9	115.9	5.68	5.57	1.93
3,645.0	37.81	180.09	3,600.4	-220.4	-31.8	124.2	6.33	6.31	0.88
3,677.0	39.92	180.10	3,625.3	-240.5	-31.9	133.0	6.59	6.59	0.03

Survey Report

Company: Energen Resources
 Project: Rio Arriba County
 Site: Sec20 T32N-R4W - 30B
 Well: Carracas 30B#6
 Wellbore: Wellbore #1
 Design: Wellbore #1

Local Co-ordinate Reference: Well Carracas 30B#6
 TVD Reference: WELL @ 7420.0usft (Original Well Elev)
 MD Reference: WELL @ 7420.0usft (Original Well Elev)
 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)
3,709.0	41.94	179.92	3,649.5	-261.4	-31.9	142.1	6.32	6.31	-0.56
3,740.0	43.62	179.74	3,672.3	-282.5	-31.8	151.1	5.43	5.42	-0.58
3,772.0	45.11	179.81	3,695.1	-304.9	-31.7	160.8	4.66	4.66	0.22
3,804.0	47.04	180.11	3,717.3	-327.9	-31.7	170.7	6.07	6.03	0.94
3,835.0	49.15	180.38	3,738.0	-351.0	-31.8	180.8	6.84	6.81	0.87
3,867.0	51.00	180.69	3,758.6	-375.5	-32.0	191.7	5.83	5.78	0.97
3,899.0	53.29	180.82	3,778.2	-400.8	-32.4	202.9	7.16	7.16	0.41
3,931.0	54.87	180.56	3,797.0	-426.7	-32.7	214.4	4.98	4.94	-0.81
3,963.0	57.07	180.52	3,814.9	-453.2	-32.9	226.2	6.88	6.88	-0.13
3,994.0	59.09	180.28	3,831.3	-479.5	-33.1	237.7	6.55	6.52	-0.77
4,026.0	61.47	180.72	3,847.1	-507.3	-33.4	250.0	7.53	7.44	1.38
4,058.0	63.05	180.92	3,862.0	-535.6	-33.8	262.6	4.97	4.94	0.63
4,090.0	64.54	181.65	3,876.2	-564.3	-34.4	275.7	5.09	4.66	2.28
4,122.0	66.04	182.45	3,889.6	-593.4	-35.5	289.2	5.21	4.69	2.50
4,154.0	68.41	182.43	3,901.9	-622.9	-36.7	303.1	7.41	7.41	-0.06
4,186.0	70.43	182.19	3,913.2	-652.8	-37.9	317.2	6.35	6.31	-0.75
4,218.0	72.81	182.32	3,923.3	-683.1	-39.1	331.4	7.45	7.44	0.41
4,249.0	74.92	183.24	3,931.9	-712.9	-40.6	345.6	7.38	6.81	2.97
4,281.0	74.92	185.17	3,940.2	-743.7	-42.8	361.0	5.82	0.00	6.03
4,313.0	75.27	186.91	3,948.4	-774.4	-46.1	377.3	5.37	1.09	5.44
4,345.0	75.27	188.64	3,956.6	-805.1	-50.3	394.3	5.23	0.00	5.41
4,377.0	75.89	189.83	3,964.6	-835.7	-55.2	412.1	4.09	1.94	3.72
4,409.0	77.38	191.77	3,971.9	-866.3	-61.1	430.6	7.51	4.66	6.06
4,441.0	78.00	193.20	3,978.8	-896.8	-67.8	449.9	4.78	1.94	4.47
4,472.0	78.00	194.37	3,985.2	-926.2	-75.1	469.2	3.69	0.00	3.77
4,504.0	77.65	194.76	3,992.0	-956.5	-82.9	489.4	1.62	-1.09	1.22
4,536.0	77.21	195.78	3,998.9	-986.6	-91.2	509.9	3.40	-1.38	3.19
4,568.0	77.47	197.69	4,005.9	-1,016.5	-100.1	530.9	5.88	0.81	5.97
4,599.0	77.91	200.03	4,012.6	-1,045.2	-109.9	552.2	7.51	1.42	7.55
4,631.0	77.91	201.45	4,019.3	-1,074.5	-121.0	574.9	4.34	0.00	4.44
4,663.0	78.44	203.82	4,025.8	-1,103.4	-133.1	598.2	7.44	1.66	7.41
4,694.0	78.96	205.60	4,031.9	-1,131.0	-145.8	621.7	5.88	1.68	5.74
4,726.0	79.23	207.25	4,037.9	-1,159.1	-159.8	646.5	5.13	0.84	5.16
4,758.0	79.32	208.74	4,043.9	-1,186.9	-174.5	671.8	4.58	0.28	4.66
4,790.0	79.23	211.18	4,049.9	-1,214.1	-190.2	697.8	7.50	-0.28	7.63
4,821.0	79.40	213.23	4,055.6	-1,239.9	-206.4	723.6	6.52	0.55	6.61
4,853.0	79.23	215.03	4,061.5	-1,265.9	-224.1	750.7	5.55	-0.53	5.63
4,885.0	79.49	216.58	4,067.4	-1,291.4	-242.5	778.4	4.83	0.81	4.84
4,917.0	79.67	218.10	4,073.2	-1,316.4	-261.6	806.4	4.71	0.56	4.75
4,949.0	80.02	219.55	4,078.9	-1,341.0	-281.3	834.9	4.59	1.09	4.53
4,981.0	80.37	221.41	4,084.3	-1,365.0	-301.8	863.7	5.83	1.09	5.81
5,013.0	80.64	223.60	4,089.6	-1,388.2	-323.1	893.0	6.80	0.84	6.84
5,044.0	80.81	225.63	4,094.6	-1,410.0	-344.6	921.8	6.49	0.55	6.55

Survey Report

Company: Energen Resources
Project: Rio Arriba County
Site: Sec20 T32N-R4W - 30B
Well: Carracas 30B#6
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Carracas 30B#6
TVD Reference: WELL @ 7420.0usft (Original Well Elev)
MD Reference: WELL @ 7420.0usft (Original Well Elev)
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)
5,076.0	80.90	227.49	4,099.7	-1,431.7	-367.5	951.9	5.75	0.28	5.81
5,108.0	81.16	229.31	4,104.7	-1,452.7	-391.2	982.3	5.68	0.81	5.69
5,140.0	81.95	230.68	4,109.4	-1,473.1	-415.4	1,013.0	4.90	2.47	4.28
5,172.0	81.78	232.06	4,113.9	-1,492.8	-440.2	1,043.8	4.30	-0.53	4.31
Coal Entry 5172'MD / 4114'TVD									
5,203.0	83.19	232.83	4,118.0	-1,511.6	-464.5	1,073.9	5.17	4.55	2.48
5,235.0	85.21	233.02	4,121.2	-1,530.8	-489.9	1,105.1	6.34	6.31	0.59
5,267.0	87.58	233.03	4,123.2	-1,550.0	-515.4	1,136.4	7.41	7.41	0.03
5,299.0	89.96	233.34	4,123.9	-1,569.1	-541.1	1,167.8	7.50	7.44	0.97
5,331.0	90.92	235.10	4,123.6	-1,587.9	-567.0	1,199.3	6.26	3.00	5.50
5,363.0	90.75	237.29	4,123.2	-1,605.7	-593.6	1,231.0	6.86	-0.53	6.84
5,394.0	90.75	239.49	4,122.8	-1,621.9	-620.0	1,261.8	7.10	0.00	7.10
5,426.0	90.48	241.77	4,122.4	-1,637.6	-647.9	1,293.8	7.17	-0.84	7.13
5,458.0	90.66	244.18	4,122.1	-1,652.1	-676.4	1,325.8	7.55	0.56	7.53
5,490.0	90.75	246.56	4,121.7	-1,665.5	-705.5	1,357.7	7.44	0.28	7.44
5,522.0	90.92	249.23	4,121.3	-1,677.5	-735.1	1,389.7	8.36	0.53	8.34
5,556.0	90.75	252.07	4,120.8	-1,688.8	-767.2	1,423.5	8.37	-0.50	8.35
5,624.0	90.03	257.83	4,120.3	-1,706.4	-832.8	1,490.3	8.53	-1.05	8.47
7" CSG @ 5624'MD / 4120'TVD									
5,648.0	89.78	259.86	4,120.3	-1,711.1	-856.4	1,513.5	8.53	-1.06	8.47
5,689.0	90.04	259.20	4,120.4	-1,718.5	-896.7	1,553.0	1.73	0.63	-1.61
5,721.0	90.40	258.64	4,120.3	-1,724.7	-928.1	1,584.0	2.08	1.13	-1.75
5,751.0	90.57	258.39	4,120.0	-1,730.6	-957.5	1,613.1	1.01	0.57	-0.83
5,782.0	90.22	258.20	4,119.8	-1,736.9	-987.8	1,643.2	1.28	-1.13	-0.61
5,814.0	89.96	258.15	4,119.8	-1,743.5	-1,019.2	1,674.2	0.83	-0.81	-0.16
5,846.0	91.01	259.71	4,119.5	-1,749.6	-1,050.6	1,705.2	5.88	3.28	4.88
5,878.0	90.92	260.33	4,118.9	-1,755.2	-1,082.1	1,736.0	1.96	-0.28	1.94
5,910.0	90.66	260.63	4,118.5	-1,760.5	-1,113.6	1,766.7	1.24	-0.81	0.94
5,942.0	90.31	260.44	4,118.2	-1,765.7	-1,145.2	1,797.5	1.24	-1.09	-0.59
5,973.0	90.13	260.21	4,118.1	-1,770.9	-1,175.8	1,827.3	0.94	-0.58	-0.74
6,005.0	90.22	260.37	4,118.0	-1,776.3	-1,207.3	1,858.0	0.57	0.28	0.50
6,037.0	90.75	260.44	4,117.7	-1,781.7	-1,238.8	1,888.8	1.67	1.66	0.22
6,069.0	91.28	261.06	4,117.2	-1,786.8	-1,270.4	1,919.4	2.55	1.66	1.94
6,101.0	91.45	261.79	4,116.4	-1,791.6	-1,302.1	1,950.0	2.34	0.53	2.28
6,132.0	91.19	262.86	4,115.7	-1,795.7	-1,332.8	1,979.5	3.55	-0.84	3.45
6,164.0	91.36	263.02	4,115.0	-1,799.6	-1,364.5	2,009.8	0.73	0.53	0.50
6,196.0	90.13	262.25	4,114.6	-1,803.7	-1,396.3	2,040.2	4.53	-3.84	-2.41
6,228.0	89.96	261.28	4,114.6	-1,808.3	-1,427.9	2,070.7	3.08	-0.53	-3.03
6,260.0	89.96	259.24	4,114.6	-1,813.7	-1,459.5	2,101.5	6.37	0.00	-6.38
6,292.0	90.13	259.14	4,114.5	-1,819.7	-1,490.9	2,132.4	0.62	0.53	-0.31
6,323.0	89.52	258.16	4,114.6	-1,825.8	-1,521.3	2,162.4	3.72	-1.97	-3.16
6,355.0	90.13	258.38	4,114.7	-1,832.4	-1,552.6	2,193.5	2.03	1.91	0.69
6,386.0	89.52	258.11	4,114.8	-1,838.7	-1,583.0	2,223.6	2.15	-1.97	-0.87
6,418.0	89.87	258.63	4,115.0	-1,845.1	-1,614.3	2,254.6	1.96	1.09	1.63

Survey Report

Company: Energen Resources
 Project: Rio Arriba County
 Site: Sec20 T32N-R4W - 30B
 Well: Carracas 30B#6
 Wellbore: Wellbore #1
 Design: Wellbore #1

Local Co-ordinate Reference: Well Carracas 30B#6
 TVD Reference: WELL @ 7420.0usft (Original Well Elev)
 MD Reference: WELL @ 7420.0usft (Original Well Elev)
 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)
6.450 0	89 52	259.09	4,115.2	-1.851 3	-1.645 7	2,285.6	1 81	-1.09	1 44
6.482 0	89 87	260.11	4,115.3	-1.857 1	-1,677.2	2,316.5	3 37	1.09	3.19
6.514 0	90 13	260.72	4,115.3	-1,862.4	-1,708.7	2,347.2	2.07	0 81	1.91
6.546 0	89 52	260.88	4,115.4	-1,867 5	-1,740.3	2,377.9	1 97	-1.91	0.50
6.577 0	89.25	260.81	4,115.8	-1,872 5	-1,770.9	2,407.6	0.90	-0.87	-0.23
6.609 0	89 25	260 73	4,116.2	-1 877.6	-1,802.5	2,438 3	0.25	0.00	-0.25
6.641 0	89 43	260.76	4,116.6	-1,882.7	-1,834 1	2,469.0	0.57	0.56	0.09
6.673 0	89 43	260.89	4,116.9	-1,887.8	-1,865.7	2,499.7	0 41	0.00	0 41
6.705 0	90 75	261.02	4,116.8	-1,892 9	-1,897 3	2,530.3	4.14	4.13	0.41
6.735 0	91 89	260.88	4,116.1	-1,897 6	-1,926.9	2,559.0	3 83	3 80	-0.47
6.766 0	91.71	260.98	4,115 2	-1,902 5	-1,957.5	2,588.7	0 66	-0.58	0 32
6.796 0	92.24	261.17	4,114 1	-1,907.1	-1,987.1	2,617.4	1 88	1.77	0.63
6.826 0	92 77	261 11	4,112 8	-1,911.7	-2 016.7	2,646 1	1.78	1.77	-0.20
6.857 0	92 51	261.01	4,111 4	-1,916.5	-2,047 3	2,675 8	0 90	-0.84	-0.32
6.888 0	92.24	260.69	4,110 1	-1,921.5	-2,077 9	2,705.5	1.35	-0.87	-1.03
6.917 0	92.59	260.37	4,108 9	-1,926 2	-2,106.5	2,733.3	1.63	1 21	-1.10
6.949 0	92.33	259.50	4,107.5	-1,931.8	-2,138.0	2,764.1	2 84	-0.81	-2.72
6.979 0	94 44	258.61	4,105.7	-1,937.5	-2,167.4	2,793.0	7 63	7 03	-2 97
7.010 0	94 88	257.88	4,103.2	-1,943.8	-2,197 6	2,823.0	2 74	1.42	-2 35
7.039 0	92.59	257 47	4,101.3	-1,950 0	-2,225.9	2,851 2	8 02	-7.90	-1 41
7.069 0	92.07	257.39	4,100.1	-1,956 5	-2,255.1	2,880 4	1.75	-1.73	-0.27
7.099 0	92 42	256.63	4,098.9	-1,963.2	-2,284.3	2,909.6	2 79	1.17	-2.53
7.129 0	91.89	257.86	4,097.8	-1,969 9	-2,313.6	2,938.8	4.46	-1.77	4.10
7.160 0	91.89	258.29	4,096.8	-1,976 3	-2,343.9	2,968.9	1.39	0.00	1.39
7.189 0	91 89	259 21	4,095.8	-1,981 9	-2,372 3	2,997.0	3 17	0 00	3.17
7.219 0	91 28	259.77	4,095.0	-1,987 4	-2,401.8	3,025.9	2 76	-2 03	1.87
7.250 0	90.84	259 43	4,094.4	-1,993 0	-2,432 3	3,055.8	1 79	-1 42	-1.10
7.281 0	90 13	259.06	4,094.2	-1,998 8	-2,462.7	3,085 8	2.58	-2.29	-1 19
7.311 0	89.87	258.85	4,094.2	-2,004 5	-2,492.2	3,114.8	1.11	-0.87	-0 70
7.341 0	89 60	258 77	4,094.3	-2,010 3	-2,521 6	3,143.9	0 94	-0 90	-0 27
7.372 0	89 43	259.01	4,094.6	-2,016 3	-2,552 0	3,173 9	0.95	-0 55	0.77
7.404 0	89 69	259.35	4,094.8	-2,022 3	-2,583 5	3,204.8	1.34	0 81	1.06
7.434 0	89 69	259.41	4,095 0	-2,027 8	-2,612.9	3,233.8	0 20	0 00	0 20
7.465 0	90 13	259.86	4,095.0	-2,033 4	-2,643 4	3,263.7	2.03	1.42	1.45
7.496 0	90 48	260.35	4,094.9	-2,038.8	-2,674 0	3,293.5	1.94	1 13	1.58
7.527 0	90 66	260 33	4,094 6	-2,044.0	-2,704.5	3,323.3	0.58	0.58	-0.06
7.558 0	90.75	260.17	4,094.2	-2,049.2	-2,735.1	3,353.1	0.59	0.29	-0.52
7.588 0	90 40	260.40	4,093 9	-2,054.3	-2,764.7	3,381.9	1.40	-1.17	0.77
7.619 0	90 40	260 30	4,093 7	-2,059 5	-2,795 2	3,411.7	0 32	0.00	-0.32
7.650 0	90 75	260.85	4,093 3	-2,064 5	-2,825.8	3,441.5	2 10	1 13	1.77
7.681 0	91.10	260.97	4,092.8	-2,069.4	-2,856.4	3,471 2	1.19	1 13	0 39
7.712 0	91 45	260.97	4,092 2	-2,074 3	-2,887 0	3,500.9	1.13	1.13	0.00
7.743 0	92 42	260.88	4,091 1	-2,079.2	-2,917 6	3,530.6	3.14	3 13	-0 29

Survey Report

Company: Energen Resources
Project: Rio Arriba County
Site: Sec20 T32N-R4W - 30B
Well: Carracas 30B#6
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Carracas 30B#6
TVD Reference: WELL @ 7420.0usft (Original Well Elev)
MD Reference: WELL @ 7420.0usft (Original Well Elev)
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)
7.774.0	92.68	260.78	4,089.7	-2,084.1	-2,948.2	3,560.2	0.90	0.84	-0.32
7.806.0	92.95	260.59	4,088.2	-2,089.3	-2,979.7	3,590.9	1.03	0.84	-0.59
7.836.0	92.59	259.98	4,086.7	-2,094.4	-3,009.3	3,619.7	2.36	-1.20	-2.03
7.868.0	91.71	259.65	4,085.5	-2,100.0	-3,040.7	3,650.5	2.94	-2.75	-1.03
7.898.0	91.28	259.06	4,084.7	-2,105.5	-3,070.2	3,679.5	2.43	-1.43	-1.97
7.929.0	91.19	258.15	4,084.1	-2,111.7	-3,100.6	3,709.5	2.95	-0.29	-2.94
7.959.0	91.89	258.14	4,083.2	-2,117.8	-3,129.9	3,738.6	2.33	2.33	-0.03
7.989.0	92.68	258.67	4,082.1	-2,123.9	-3,159.3	3,767.7	3.17	2.63	1.77
8.018.0	92.51	258.76	4,080.7	-2,129.5	-3,187.7	3,795.8	0.66	-0.59	0.31
8.049.0	92.24	258.57	4,079.5	-2,135.6	-3,218.1	3,825.8	1.06	-0.87	-0.61
8.080.0	92.42	258.41	4,078.2	-2,141.8	-3,248.4	3,855.8	0.78	0.58	-0.52
8.111.0	92.51	258.29	4,076.9	-2,148.0	-3,278.8	3,885.9	0.48	0.29	-0.39
8.142.0	92.42	258.17	4,075.5	-2,154.4	-3,309.1	3,915.9	0.48	-0.29	-0.39
8.173.0	92.95	257.99	4,074.1	-2,160.8	-3,339.4	3,946.0	1.81	1.71	-0.58
8.204.0	92.86	257.84	4,072.5	-2,167.2	-3,369.7	3,976.1	0.56	-0.29	-0.48
8.234.0	91.54	257.96	4,071.4	-2,173.5	-3,399.0	4,005.2	4.42	-4.40	0.40
8.264.0	90.92	257.53	4,070.7	-2,179.9	-3,428.3	4,034.4	2.51	-2.07	-1.43
8.295.0	90.75	258.12	4,070.3	-2,186.4	-3,458.6	4,064.5	1.98	-0.55	1.90
8.325.0	91.19	258.57	4,069.7	-2,192.5	-3,487.9	4,093.6	2.10	1.47	1.50
8.355.0	90.22	259.15	4,069.4	-2,198.3	-3,517.4	4,122.7	3.77	-3.23	1.93
8.386.0	89.96	259.23	4,069.3	-2,204.1	-3,547.8	4,152.6	0.88	-0.84	0.26
8.416.0	89.52	259.08	4,069.5	-2,209.7	-3,577.3	4,181.6	1.55	-1.47	-0.50
8.447.0	88.90	259.02	4,069.9	-2,215.6	-3,607.7	4,211.6	2.01	-2.00	-0.19
8.477.0	88.64	258.61	4,070.5	-2,221.4	-3,637.2	4,240.6	1.62	-0.87	-1.37
8.508.0	88.90	259.50	4,071.2	-2,227.3	-3,667.6	4,270.6	2.99	0.84	2.87
8.539.0	90.66	260.25	4,071.3	-2,232.8	-3,698.1	4,300.5	6.17	5.68	2.42
8.569.0	90.75	260.56	4,071.0	-2,237.8	-3,727.7	4,329.3	1.08	0.30	1.03
8.600.0	91.80	260.26	4,070.3	-2,242.9	-3,758.2	4,359.1	3.52	3.39	-0.97
8.631.0	91.36	259.45	4,069.4	-2,248.4	-3,788.7	4,388.9	2.97	-1.42	-2.61
8.661.0	91.10	258.99	4,068.8	-2,254.0	-3,818.2	4,417.9	1.76	-0.87	-1.53
8.692.0	91.80	258.98	4,068.0	-2,259.9	-3,848.6	4,447.9	2.26	2.26	-0.03
8.722.0	92.07	258.48	4,067.0	-2,265.8	-3,878.0	4,476.9	1.89	0.90	-1.67
8.752.0	92.33	258.58	4,065.8	-2,271.8	-3,907.4	4,506.0	0.93	0.87	0.33
8.781.0	92.51	258.68	4,064.6	-2,277.5	-3,935.8	4,534.1	0.71	0.62	0.34
8.812.0	92.15	258.35	4,063.3	-2,283.6	-3,966.2	4,564.1	1.57	-1.16	-1.06
8.843.0	92.24	258.38	4,062.1	-2,289.9	-3,996.5	4,594.1	0.31	0.29	0.10
8.874.0	92.33	257.77	4,060.9	-2,296.3	-4,026.8	4,624.2	1.99	0.29	-1.97
8.904.0	92.42	257.48	4,059.7	-2,302.7	-4,056.1	4,653.4	1.01	0.30	-0.97
8.935.0	92.86	257.78	4,058.2	-2,309.3	-4,086.3	4,683.5	1.72	1.42	0.97
8.966.0	93.39	257.71	4,056.5	-2,315.9	-4,116.6	4,713.6	1.72	1.71	-0.23
8.996.0	92.15	258.63	4,055.1	-2,322.1	-4,145.9	4,742.7	5.14	-4.13	3.07
9.027.0	91.36	258.78	4,054.1	-2,328.1	-4,176.3	4,772.7	2.59	-2.55	0.48
9.056.0	89.25	258.22	4,054.0	-2,333.9	-4,204.7	4,800.8	7.53	-7.28	-1.93

Survey Report

Company: Energen Resources
Project: Rio Arriba County
Site: Sec20 T32N-R4W - 30B
Well: Carracas 30B#6
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Carracas 30B#6
TVD Reference: WELL @ 7420.0usft (Original Well Elev)
MD Reference: WELL @ 7420.0usft (Original Well Elev)
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)
9,086.0	87.23	257.43	4,054.9	-2,340.2	-4,234.0	4,830.0	7.23	-6.73	-2.63
9,115.0	86.00	256.79	4,056.6	-2,346.7	-4,262.2	4,858.2	4.78	-4.24	-2.21
9,146.0	85.65	257.33	4,058.9	-2,353.6	-4,292.4	4,888.4	2.07	-1.13	1.74
9,177.0	86.35	258.12	4,061.0	-2,360.2	-4,322.6	4,918.5	3.40	2.26	2.55
9,208.0	86.61	259.77	4,062.9	-2,366.1	-4,353.0	4,948.4	5.38	0.84	5.32
9,238.0	87.23	260.40	4,064.6	-2,371.3	-4,382.5	4,977.2	2.94	2.07	2.10
9,268.0	87.49	260.46	4,065.9	-2,376.3	-4,412.0	5,006.0	0.89	0.87	0.20
9,299.0	88.90	261.11	4,066.9	-2,381.2	-4,442.6	5,035.7	5.01	4.55	2.10
9,329.0	90.40	262.01	4,067.1	-2,385.6	-4,472.3	5,064.4	5.83	5.00	3.00
9,360.0	92.33	261.97	4,066.4	-2,389.9	-4,503.0	5,093.9	6.23	6.23	-0.13
9,390.0	92.59	262.26	4,065.1	-2,394.1	-4,532.7	5,122.4	1.30	0.87	0.97
9,420.0	92.51	261.20	4,063.7	-2,398.4	-4,562.3	5,151.0	3.54	-0.27	-3.53
9,450.0	91.71	260.54	4,062.6	-2,403.1	-4,591.9	5,179.8	3.46	-2.67	-2.20
9,480.0	90.84	259.71	4,062.0	-2,408.3	-4,621.5	5,208.6	4.01	-2.90	-2.77
9,510.0	91.36	259.59	4,061.4	-2,413.7	-4,651.0	5,237.6	1.78	1.73	-0.40
9,541.0	91.45	259.26	4,060.6	-2,419.3	-4,681.4	5,267.5	1.10	0.29	-1.06
9,572.0	91.71	259.40	4,059.8	-2,425.1	-4,711.9	5,297.4	0.95	0.84	0.45
9,602.0	91.28	258.86	4,059.0	-2,430.7	-4,741.3	5,326.4	2.30	-1.43	-1.80
9,633.0	90.92	258.32	4,058.4	-2,436.9	-4,771.7	5,356.4	2.09	-1.16	-1.74
9,664.0	91.19	258.41	4,057.8	-2,443.1	-4,802.1	5,386.5	0.92	0.87	0.29
9,693.0	90.57	258.03	4,057.4	-2,449.0	-4,830.5	5,414.6	2.51	-2.14	-1.31
9,724.0	90.84	258.08	4,057.0	-2,455.5	-4,860.8	5,444.8	0.89	0.87	0.16
9,755.0	90.57	258.15	4,056.6	-2,461.8	-4,891.1	5,474.9	0.90	-0.87	0.23
9,786.0	90.31	257.98	4,056.4	-2,468.2	-4,921.4	5,505.0	1.00	-0.84	-0.55
9,815.0	90.22	257.90	4,056.2	-2,474.3	-4,949.8	5,533.1	0.42	-0.31	-0.28
9,846.0	89.69	257.96	4,056.3	-2,480.8	-4,980.1	5,563.3	1.72	-1.71	0.19
9,877.0	90.04	258.03	4,056.3	-2,487.2	-5,010.4	5,593.4	1.15	1.13	0.23
9,908.0	90.92	258.40	4,056.1	-2,493.6	-5,040.8	5,623.5	3.08	2.84	1.19
9,938.0	91.10	258.41	4,055.6	-2,499.6	-5,070.2	5,652.6	0.60	0.60	0.03
9,969.0	90.84	258.37	4,055.0	-2,505.8	-5,100.5	5,682.6	0.85	-0.84	-0.13
10,002.0	90.31	258.50	4,054.7	-2,512.4	-5,132.9	5,714.6	1.65	-1.61	0.39
10,033.0	89.43	258.14	4,054.8	-2,518.7	-5,163.2	5,744.7	3.07	-2.84	-1.16
10,065.0	88.90	258.02	4,055.2	-2,525.3	-5,194.5	5,775.8	1.70	-1.66	-0.38
10,097.0	88.99	257.73	4,055.8	-2,532.1	-5,225.8	5,806.9	0.95	0.28	-0.91
10,167.0	88.99	257.73	4,057.1	-2,546.9	-5,294.2	5,875.0	0.00	0.00	0.00

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5,172.0	4,113.9	-1,492.8	-440.2	Coal Entry 5172'MD / 4114'TVD
5,624.0	4,120.3	-1,706.4	-832.8	7" CSG @ 5624'MD / 4120'TVD

Survey Report

Company: Energen Resources
Project: Rio Arriba County
Site: Sec20 T32N-R4W - 30B
Well: Carracas 30B#6
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Carracas 30B#6
TVD Reference: WELL @ 7420.0usft (Original Well Elev)
MD Reference: WELL @ 7420.0usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Checked By _____	Approved By. _____	Date: _____
------------------	--------------------	-------------