

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

- As drilled -
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 30-039-27564	² Pool Code 71629	³ Pool Name Basin Fruitland Coal
⁴ Property Code	⁵ Property Name Carracas 19 B	⁶ Well Number #11
⁷ OGRID No. 162928	⁸ Operator Name Energen Resources Corporation	⁹ Elevation 7318'

¹⁰ Surface Location

UL or lot no. K	Section 19	Township 32N	Range 04W	Lot Idn	Feet from the 2620'	North/South line South	Feet from the 1235'	East/West line West	County Rio Arriba
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¹¹ Bottom Hole Location If Different From Surface

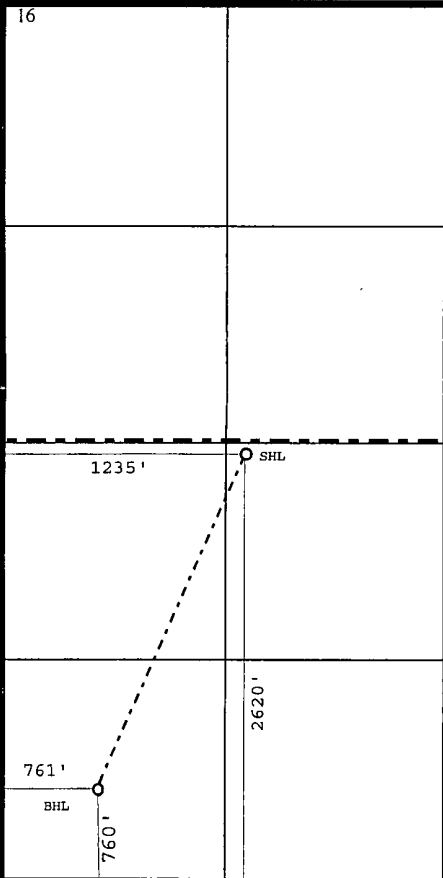
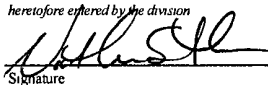
UL or lot no. M	Section 19	Township 32N	Range 04W	Lot Idn	Feet from the 760'	North/South line South	Feet from the 761'	East/West line West	County Rio Arriba
¹² Dedicated Acres 300.52 W/2	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.	RCVD AUG 30 '12 OIL CONS. DIV. DIST. 3					

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.

1156.98

1320.00

2640.00

5280.00	¹⁶ 				¹⁷ OPERATOR CERTIFICATION <i>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</i>  Signature 8/28/2012 Date Nathan Smith Printed Name	
					¹⁸ SURVEYOR CERTIFICATION <i>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.</i> October 16, 2003 Date of Survey Signature and Seal of Professional Surveyor. Original survey conducted and recorded by Jason C. Edwards 15269 Certificate Number	

WELL DETAILS: Carracas 19 B #11

Ground Elevation: 7318.0
 RKB Elevation: WELL @ 7333.0usft (Original Well Elev)
 Rig Name: Original Well Elev

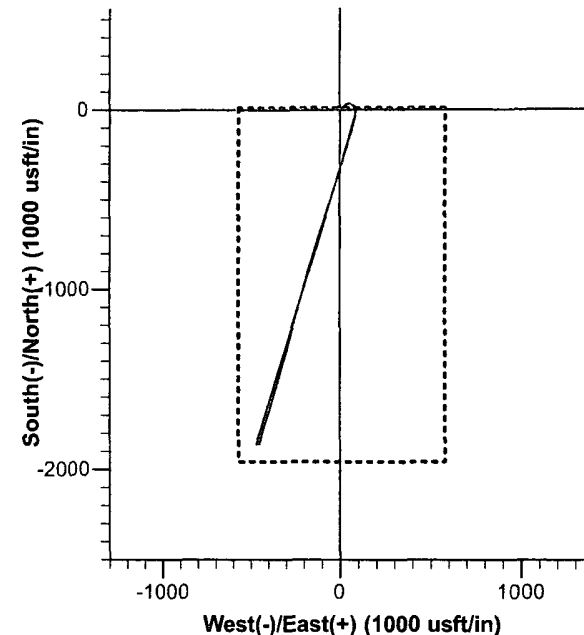
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	2174871.93	1333778.74	36° 58' 19 988 N	107° 17' 58.992 W	

SECTION DETAILS

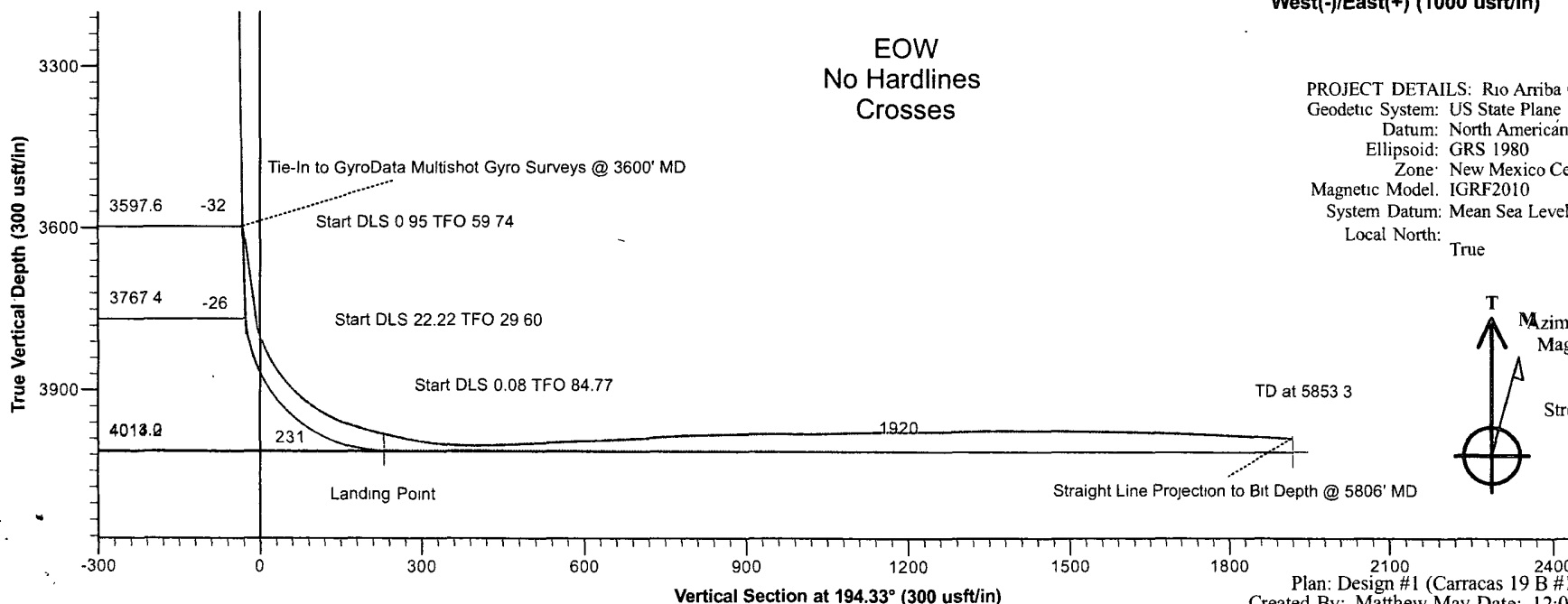
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSeet	Target
13600.0	1.97	140.22	3597.6	11.6	84.5	0.00	0.00	-32.2		
23770.0	3.11	166.80	3767.4	4.9	87.4	0.95	59.74	-26.4		
34162.4	89.90	196.36	4013.0	-243.6	21.3	22.22	29.60	230.8		
45853.3	90.02	197.71	4014.2	-1860.3	-474.0	0.08	84.77	1919.8		

TARGET DETAILS

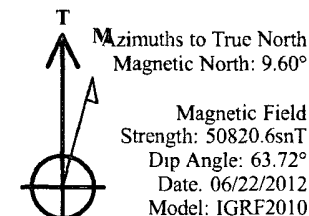
Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
Landing Point	4013.0	-243.4	24.0	2174628.33	1333800.04	Point
Carracas 19 B #11 PBHL	4014.3	-1860.0	-475.0	2173017.28	1333283.27	Point



EOW
 No Hardlines
 Crosses



PROJECT DETAILS: Rio Arriba County, NM
 Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: New Mexico Central Zone
 Magnetic Model: IGRF2010
 System Datum: Mean Sea Level
 Local North: True





Energen Resources Corp

Rio Arriba County, NM

Sec 19 T32N R04W

Carracas 19 B #11

ST01

Design: ST01

Standard Survey Report

22 June, 2012

PATHFINDER
A Schlumberger Company

Company:	Energen Resources Corp	Local Co-ordinate Reference:	Well Carracas 19 B #11
Project:	Rio Arriba County, NM	TVD Reference:	WELL @ 7333.0usft (Original Well Elev)
Site:	Sec 19 T32N R04W	MD Reference:	WELL @ 7333.0usft (Original Well Elev)
Well:	Carracas 19 B #11	North Reference:	True
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ST01	Database:	EDM 5000.1 Single User Db

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

Site		Sec 19 T32N R04W			
Site Position:		Northing:	2,174,871.93 usft	Latitude:	36° 58' 19.988 N
From:	Lat/Long	Easting:	1,333,778.74 usft	Longitude:	107° 17' 58.992 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.63 °

Well		Carracas 19 B #11				
Well Position	+N/-S	0.0 usft	Northing:	2,174,871.93 usft	Latitude:	36° 58' 19.988 N
	+E/-W	0.0 usft	Easting:	1,333,778.74 usft	Longitude:	107° 17' 58.992 W
Position Uncertainty	0.0 usft		Wellhead Elevation:	usft	Ground Level:	7,318.0 usft

Wellbore: ST01					
Magnetics:	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	06/22/12	9 60	63 72	50,821

Design:	ST01				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	3,600.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.0	0.0	0.0	194.33	

Survey Program		Date	06/22/12	
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
200.0	3,600.0	Survey #1 (OH)	NS-GYRO-MS	North sensing gyrocompassing m/s
3,794.2	5,806.0	Survey #1 (ST01)	MWD	MWD - Standard

Survey									
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Vertical Section	Dogleg Rate	Build Rate	Turn Rate
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.30	222.64	200.0	-0.4	-0.4	0.5	0.15	0.15	0.00
400.0	0.46	202.23	400.0	-1.5	-1.0	1.7	0.10	0.08	-10.21
600.0	0.46	339.03	600.0	-1.5	-1.6	1.9	0.43	0.00	68.40
800.0	0.99	7.05	800.0	1.0	-1.7	-0.5	0.31	0.27	14.01
1,000.0	0.99	53.80	999.9	3.7	-0.1	-3.6	0.39	0.00	23.38
1,200.0	3.20	43.49	1,199.8	8.8	5.2	-9.8	1.12	1.11	-5.16
1,400.0	4.44	49.12	1,399.4	17.9	14.9	-21.0	0.65	0.62	2.82
1,600.0	3.26	59.07	1,598.9	25.9	25.6	-31.4	0.68	-0.59	4.98
1,800.0	3.30	65.40	1,798.6	31.2	35.7	-39.1	0.18	0.02	3.17

Company: Energen Resources Corp
Project: Rio Arriba County, NM
Site: Sec 19 T32N R04W
Well: Carracas 19 B #11
Wellbore: ST01
Design: ST01

Local Co-ordinate Reference: Well Carracas 19 B #11
TVD Reference: WELL @ 7333.0usft (Original Well Elev)
MD Reference: WELL @ 7333.0usft (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)
2,000.0	2.75	74.13	1,998.3	34.9	45.6	-45.1	0.36	-0.28	4.37
2,200.0	1.66	95.52	2,198.2	35.9	53.1	-47.9	0.67	-0.55	10.70
2,400.0	1.24	124.89	2,398.1	34.4	57.7	-47.6	0.42	-0.21	14.69
2,600.0	1.66	127.85	2,598.0	31.4	61.8	-45.7	0.21	0.21	1.48
2,800.0	1.84	125.54	2,797.9	27.8	66.7	-43.4	0.10	0.09	-1.16
3,000.0	2.23	125.17	2,997.8	23.6	72.5	-40.8	0.20	0.20	-0.19
3,200.0	1.03	150.30	3,197.7	19.8	76.5	-38.2	0.68	-0.60	12.57
3,400.0	1.81	129.36	3,397.7	16.3	79.9	-35.5	0.46	0.39	-10.47
3,600.0	1.97	140.22	3,597.6	11.6	84.5	-32.2	0.20	0.08	5.43
Tie-In to GyroData Multishot Gyro Surveys @ 3600' MD									
3,794.2	15.39	186.26	3,789.2	-16.7	83.8	-4.6	7.26	6.91	23.71
3,810.5	19.43	187.84	3,804.7	-21.5	83.2	0.3	24.95	24.79	9.69
3,842.0	27.08	189.95	3,833.7	-33.8	81.3	12.6	24.39	24.25	6.69
3,873.4	33.77	191.62	3,860.8	-49.4	78.3	28.5	21.46	21.29	5.32
3,904.8	40.63	191.35	3,885.7	-68.0	74.5	47.5	21.87	21.86	-0.86
3,935.7	47.66	195.04	3,907.9	-88.9	69.5	69.0	24.20	22.74	11.93
3,967.0	54.61	197.42	3,927.5	-112.3	62.7	93.3	22.98	22.20	7.60
3,998.1	61.55	197.15	3,943.9	-137.4	54.9	119.6	22.39	22.38	-0.87
4,010.0	63.93	196.80	3,949.4	-147.6	51.8	130.2	20.10	19.93	-2.93
4,042.0	70.00	196.27	3,961.9	-175.8	43.4	159.6	19.03	18.97	-1.66
4,073.0	73.51	196.19	3,971.6	-204.1	35.2	189.0	11.33	11.32	-0.26
4,104.0	76.85	196.19	3,979.5	-232.8	26.8	219.0	10.77	10.77	0.00
4,135.0	77.38	196.45	3,986.5	-261.9	18.4	249.2	1.90	1.71	0.84
4,166.0	78.96	196.71	3,992.8	-290.9	9.7	279.5	5.16	5.10	0.84
4,198.0	82.13	197.07	3,998.1	-321.1	0.5	311.0	9.97	9.91	1.13
4,229.0	85.12	197.07	4,001.5	-350.6	-8.5	341.8	9.65	9.65	0.00
4,260.0	87.85	197.24	4,003.4	-380.1	-17.6	372.7	8.82	8.81	0.55
4,291.0	91.01	197.51	4,003.7	-409.7	-26.9	403.6	10.23	10.19	0.87
4,322.0	91.98	197.51	4,002.9	-439.3	-36.2	434.6	3.13	3.13	0.00
4,353.0	92.33	197.59	4,001.7	-468.8	-45.6	465.5	1.16	1.13	0.26
4,384.0	92.77	197.86	4,000.4	-498.3	-55.0	496.4	1.66	1.42	0.87
4,415.0	93.74	198.56	3,998.6	-527.7	-64.7	527.3	3.86	3.13	2.26
4,447.0	92.68	199.00	3,996.8	-558.0	-74.9	559.1	3.59	-3.31	1.38
4,477.0	91.89	199.26	3,995.6	-586.3	-84.8	589.0	2.77	-2.63	0.87
4,509.0	92.33	199.00	3,994.4	-616.5	-95.3	620.9	1.60	1.38	-0.81
4,540.0	92.77	197.94	3,993.1	-645.9	-105.1	651.8	3.70	1.42	-3.42
4,572.0	93.56	197.24	3,991.3	-676.3	-114.7	683.7	3.30	2.47	-2.19
4,603.0	93.65	196.80	3,989.3	-705.9	-123.8	714.6	1.45	0.29	-1.42
4,634.0	93.83	196.71	3,987.3	-735.5	-132.7	745.5	0.65	0.58	-0.29
4,666.0	92.68	196.19	3,985.5	-766.2	-141.7	777.4	3.94	-3.59	-1.63
4,697.0	91.80	196.01	3,984.3	-795.9	-150.3	808.4	2.90	-2.84	-0.58
4,728.0	91.54	196.01	3,983.4	-825.7	-158.9	839.3	0.84	-0.84	0.00
4,760.0	91.36	195.92	3,982.6	-856.5	-167.7	871.3	0.63	-0.56	-0.28

Company:	Energen Resources Corp	Local Co-ordinate Reference:	Well Carracas 19 B #11
Project:	Rio Arriba County, NM	TVD Reference:	WELL @ 7333 0usft (Original Well Elev)
Site:	Sec 19 T32N R04W	MD Reference:	WELL @ 7333 0usft (Original Well Elev)
Well:	Carracas 19 B #11	North Reference:	True
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ST01	Database:	EDM 5000.1 Single User Db

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)
4,791.0	90.75	195.75	3,982.0	-886.3	-176.1	902.3	2.04	-1.97	-0.55
4,822.0	90.84	196.10	3,981.6	-916.1	-184.6	933.3	1.17	0.29	1.13
4,853.0	89.87	195.48	3,981.4	-945.9	-193.1	964.3	3.71	-3.13	-2.00
4,884.0	89.16	194.52	3,981.6	-975.9	-201.1	995.3	3.85	-2.29	-3.10
4,915.0	90.48	194.69	3,981.7	-1,005.9	-208.9	1,026.3	4.29	4.26	0.55
4,947.0	91.63	194.96	3,981.2	-1,036.8	-217.1	1,058.3	3.69	3.59	0.84
4,978.0	91.80	195.04	3,980.2	-1,066.7	-225.1	1,089.2	0.61	0.55	0.26
5,009.0	91.71	195.22	3,979.3	-1,096.6	-233.2	1,120.2	0.65	-0.29	0.58
5,040.0	90.92	195.40	3,978.6	-1,126.5	-241.4	1,151.2	2.61	-2.55	0.58
5,072.0	90.31	195.48	3,978.2	-1,157.4	-249.9	1,183.2	1.92	-1.91	0.25
5,103.0	90.31	195.31	3,978.1	-1,187.3	-258.1	1,214.2	0.55	0.00	-0.55
5,134.0	90.40	195.75	3,977.9	-1,217.1	-266.4	1,245.2	1.45	0.29	1.42
5,165.0	91.19	195.66	3,977.4	-1,247.0	-274.8	1,276.2	2.56	2.55	-0.29
5,196.0	92.33	195.75	3,976.5	-1,276.8	-283.2	1,307.2	3.69	3.68	0.29
5,227.0	90.57	195.48	3,975.7	-1,306.6	-291.6	1,338.1	5.74	-5.68	-0.87
5,258.0	90.92	195.31	3,975.3	-1,336.5	-299.8	1,369.1	1.26	1.13	-0.55
5,290.0	89.69	195.48	3,975.1	-1,367.4	-308.3	1,401.1	3.88	-3.84	0.53
5,321.0	89.96	195.92	3,975.2	-1,397.2	-316.7	1,432.1	1.67	0.87	1.42
5,352.0	89.52	196.10	3,975.4	-1,427.0	-325.2	1,463.1	1.53	-1.42	0.58
5,384.0	89.34	195.84	3,975.7	-1,457.8	-334.0	1,495.1	0.99	-0.56	-0.81
5,415.0	89.25	196.10	3,976.1	-1,487.6	-342.5	1,526.1	0.89	-0.29	0.84
5,447.0	89.25	196.54	3,976.5	-1,518.3	-351.5	1,558.1	1.37	0.00	1.38
5,478.0	88.99	196.71	3,977.0	-1,548.0	-360.4	1,589.0	1.00	-0.84	0.55
5,509.0	88.81	197.07	3,977.6	-1,577.6	-369.4	1,620.0	1.30	-0.58	1.16
5,540.0	88.64	197.33	3,978.2	-1,607.2	-378.6	1,650.9	1.00	-0.55	0.84
5,571.0	88.37	197.77	3,979.0	-1,636.8	-387.9	1,681.9	1.66	-0.87	1.42
5,602.0	88.20	197.42	3,980.0	-1,666.3	-397.3	1,712.8	1.25	-0.55	-1.13
5,634.0	87.93	197.51	3,981.1	-1,696.8	-406.9	1,744.7	0.89	-0.84	0.28
5,665.0	87.76	197.68	3,982.2	-1,726.4	-416.3	1,775.7	0.78	-0.55	0.55
5,696.0	87.41	197.51	3,983.5	-1,755.9	-425.6	1,806.6	1.25	-1.13	-0.55
5,726.0	87.14	197.77	3,985.0	-1,784.4	-434.7	1,836.5	1.25	-0.90	0.87
5,746.0	86.88	197.51	3,986.0	-1,803.5	-440.7	1,856.5	1.84	-1.30	-1.30
5,806.0	86.88	197.51	3,989.3	-1,860.6	-458.8	1,916.3	0.00	0.00	0.00

Straight Line Projection to Bit Depth @ 5806' MD

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
3,600.0	3,597.6	11.6	84.5	Tie-In to GyroData Multishot Gyro Surveys @ 3600' MD
5,806.0	3,989.3	-1,860.6	-458.8	Straight Line Projection to Bit Depth @ 5806' MD

Company: Energen Resources Corp
Project: Rio Arriba County, NM
Site: Sec 19 T32N R04W
Well: Carracas 19 B #11
Wellbore: ST01
Design: ST01

Local Co-ordinate Reference: Well Carracas 19 B #11
TVD Reference: WELL @ 7333.0usft (Original Well Elev)
MD Reference: WELL @ 7333.0usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 5000 1 Single User Db

Checked By: _____ Approved By: _____ Date: _____