

RCVD OCT26'06
OIL CONS. DIV.
DIST. 3

Energen Resources

Carson National Forest, NE S22, T32N, R5W

Carracas Mesa

Carracas 22 A #2

Final Survey

30-039-27587

Surface: 1030/N 1835/E

Start Lateral 1365/N 2089/E MD 3906
TVL 3823

end Lateral 2515/N 767/E MD 5350
TVL 3771

Plan: End of Well Survey

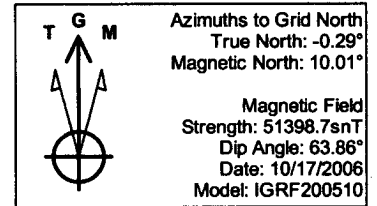
Energen Resources - Survey

17 October, 2006

B 11/15/06



Project: Carson National Forest
Site: Carracas Mesa
Well: Carracas 22 A #2
Wellbore: Final Survey
Plan: End of Well Survey (Carracas 22 A #2/Final Survey)

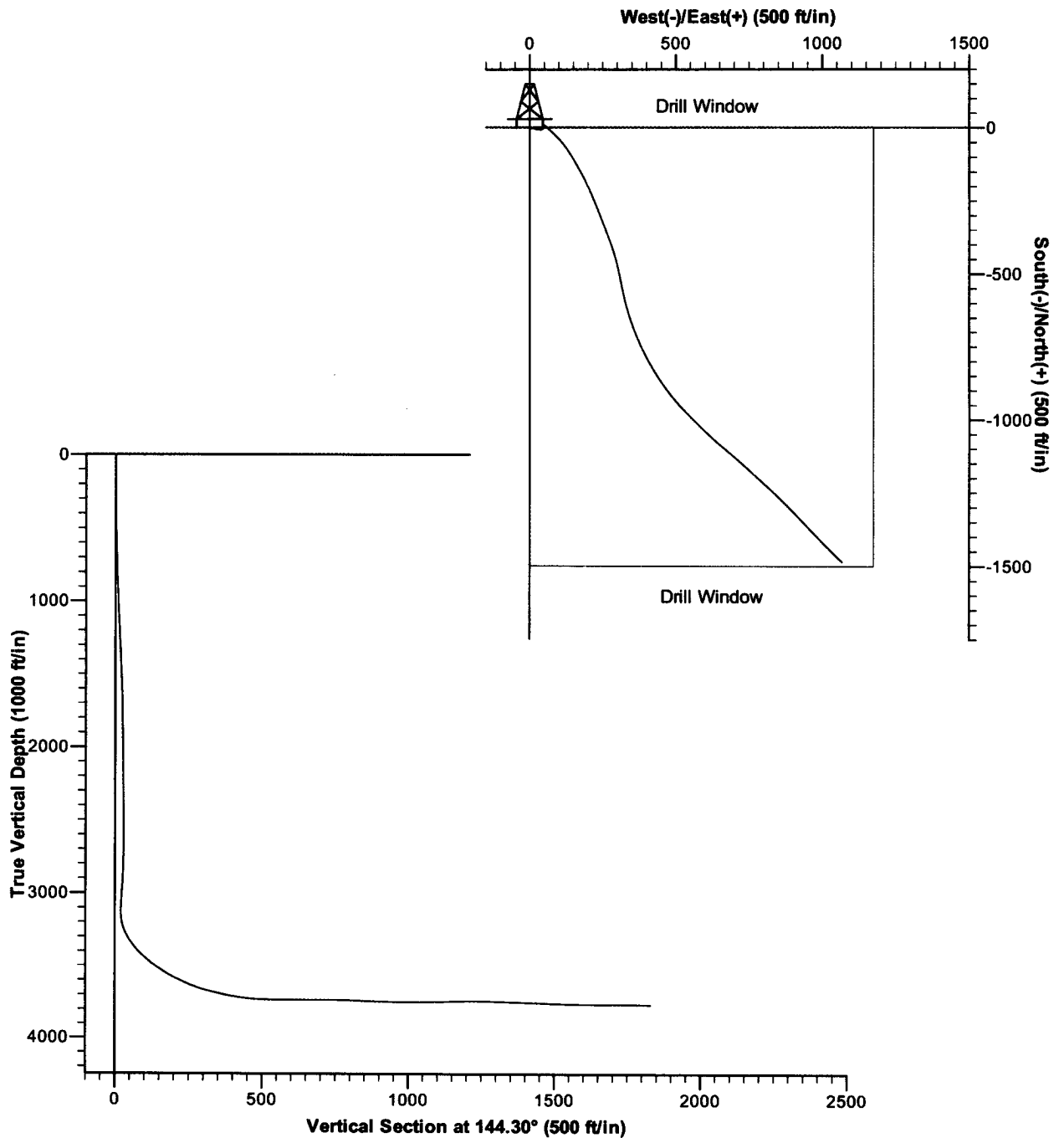


PROJECT DETAILS: Carson National Forest, NE S22, T32N, R5W

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Western Zone
System Datum: Mean Sea Level

SURFACE LOCATION

Easting: 2865339.21
Northing: 2172875.49



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Energen Resources - Survey



Company:	Energen Resources	Local Co-ordinate Reference:	Well Carracas 22 A #2
Project:	Carson National Forest, NE S22, T32N, R5W	TVD Reference:	KB Height @ 7176.0ft (AWS 289)
Site:	Carracas Mesa	MD Reference:	KB Height @ 7176.0ft (AWS 289)
Well:	Carracas 22 A #2	North Reference:	Grid
Wellbore:	Final Survey	Survey Calculation Method:	Minimum Curvature
Design:	End of Well Survey	Database:	EDM 2003.16 Single User Db

Project	Carson National Forest, NE S22, T32N, R5W, Carson National Forest		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site	Carracas Mesa				
Site Position:		Northing:	2,172,875.49 ft	Latitude:	36° 58' 13.000 N
From:	Lat/Long	Easting:	2,865,339.21 ft	Longitude:	107° 20' 47.000 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.29 °

Well	Carracas 22 A #2					
Well Position	+N/-S	0.0 ft	Northing:	2,172,875.49 ft	Latitude:	36° 58' 13.000 N
	+E/-W	0.0 ft	Easting:	2,865,339.21 ft	Longitude:	107° 20' 47.000 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	7,161.0 ft	Ground Level:	7,161.0 ft

Wellbore	Final Survey				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	10/17/2006	10.30	63.86	51,399

Design	End of Well Survey				
Audit Notes:					
Version:	1	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	144.30	

Survey Tool Program	Date	10/17/2006			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	5,350.0	End of Well Survey (Final Survey)	MWD	MWD - Standard	

Planned Survey						
MD (ft)	TVD (ft)	Inc (°)	Azi (°)	V. Sec (ft)	N/S (ft)	E/W (ft)
0.0	0.0	0.00	0.00	0.0	0.0	0.0
100.0	100.0	0.12	106.48	0.1	0.0	0.1
200.0	200.0	0.23	106.48	0.3	-0.1	0.4
300.0	300.0	0.35	106.48	0.7	-0.3	0.9
400.0	400.0	0.46	106.48	1.3	-0.5	1.5
458.0	458.0	0.53	106.48	1.7	-0.6	2.0
500.0	500.0	0.62	105.50	2.0	-0.7	2.4
600.0	600.0	0.84	104.04	3.0	-1.0	3.7
700.0	700.0	1.07	103.19	4.3	-1.4	5.3
800.0	799.9	1.29	102.63	5.8	-1.9	7.3
891.0	890.9	1.49	102.27	7.4	-2.4	9.5
900.0	899.9	1.50	102.24	7.6	-2.4	9.7

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Wellbore:	Final Survey	Survey Calculation Method:	Minimum Curvature
Design:	End of Well Survey	Database:	EDM 2003.16 Single User Db

Planned Survey

MD (ft)	TVD (ft)	Inc (°)	Azi (°)	V. Sec (ft)	N/S (ft)	E/W (ft)
1,000.0	999.9	1.62	101.94	9.6	-3.0	12.3
1,100.0	1,099.8	1.75	101.68	11.8	-3.6	15.2
1,200.0	1,199.8	1.87	101.45	14.1	-4.2	18.3
1,300.0	1,299.7	1.99	101.26	16.6	-4.9	21.6
1,325.0	1,324.7	2.02	101.21	17.2	-5.1	22.5
1,400.0	1,399.7	1.79	100.48	19.0	-5.5	24.9
1,500.0	1,499.6	1.48	99.16	21.1	-6.0	27.7
1,600.0	1,599.6	1.17	97.14	22.7	-6.3	30.0
1,700.0	1,699.6	0.87	93.69	23.8	-6.5	31.8
1,756.0	1,755.6	0.70	90.46	24.3	-6.5	32.6
1,800.0	1,799.6	0.70	90.58	24.6	-6.6	33.1
1,900.0	1,899.6	0.70	90.87	25.4	-6.6	34.3
2,000.0	1,999.6	0.70	91.15	26.1	-6.6	35.5
2,100.0	2,099.6	0.70	91.43	26.8	-6.6	36.8
2,190.0	2,189.6	0.70	91.69	27.5	-6.6	37.9
2,200.0	2,199.6	0.71	90.46	27.6	-6.7	38.0
2,300.0	2,299.5	0.78	79.33	28.2	-6.5	39.3
2,400.0	2,399.5	0.87	70.36	28.7	-6.1	40.6
2,500.0	2,499.5	0.99	63.31	29.1	-5.5	42.1
2,600.0	2,599.5	1.11	57.76	29.3	-4.6	43.7
2,622.0	2,621.5	1.14	56.71	29.3	-4.4	44.1
2,700.0	2,699.5	1.18	36.99	29.1	-3.3	45.2
2,800.0	2,799.5	1.41	16.56	28.0	-1.3	46.2
2,900.0	2,899.4	1.77	3.03	26.0	1.4	46.6
2,962.0	2,961.4	2.02	357.21	24.4	3.5	46.6
3,000.0	2,999.4	2.05	355.46	23.2	4.8	46.5
3,062.0	3,061.3	2.11	352.73	21.3	7.1	46.3
3,093.0	3,092.3	1.85	1.61	20.4	8.1	46.2
3,100.0	3,099.3	1.65	9.38	20.2	8.3	46.3
3,124.0	3,123.3	1.32	49.86	20.0	8.9	46.5
3,155.0	3,154.3	2.55	103.82	20.5	8.9	47.5
3,186.0	3,185.2	4.13	118.59	22.0	8.2	49.1
3,200.0	3,199.2	5.38	124.30	23.1	7.6	50.1
3,217.0	3,216.1	6.95	128.43	24.8	6.5	51.6
3,247.0	3,245.8	9.85	129.05	29.0	3.8	55.0
3,250.0	3,248.7	10.11	129.43	29.5	3.4	55.4
3,278.0	3,276.2	12.57	132.21	34.9	-0.2	59.5
3,300.0	3,297.5	14.44	132.41	39.9	-3.6	63.3
3,309.0	3,306.2	15.21	132.48	42.2	-5.2	65.0
3,340.0	3,335.9	18.20	134.06	50.9	-11.3	71.5
3,350.0	3,345.4	19.19	133.81	54.1	-13.5	73.8
3,371.0	3,365.1	21.28	133.35	61.2	-18.5	79.1
3,402.0	3,393.7	24.01	134.06	72.9	-26.8	87.7
3,433.0	3,421.8	26.47	136.69	86.0	-36.2	97.0

Energen

Energen Resources - Survey



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Site:	Carracas Mesa	MD Reference:	KB Height @ 7176.0ft (AWS 289)
Well:	Carracas 22 A #2	North Reference:	Grid
Wellbore:	Final Survey	Survey Calculation Method:	Minimum Curvature
Design:	End of Well Survey	Database:	EDM 2003.16 Single User Db

Planned Survey

MD (ft)	TVD (ft)	Inc (°)	Azi (°)	V. Sec (ft)	N/S (ft)	E/W (ft)
3,450.0	3,436.9	27.92	137.64	93.7	-41.9	102.3
3,464.0	3,449.2	29.11	138.36	100.3	-46.8	106.7
3,494.0	3,475.1	31.57	141.62	115.4	-58.5	116.5
3,500.0	3,480.2	32.02	142.35	118.6	-60.9	118.4
3,525.0	3,501.1	33.94	145.22	132.2	-71.9	126.4
3,550.0	3,521.6	35.86	147.23	146.5	-83.8	134.4
3,556.0	3,526.5	36.32	147.68	150.0	-86.8	136.3
3,585.0	3,549.4	39.04	148.65	167.7	-101.9	145.6
3,600.0	3,561.0	40.40	149.16	177.3	-110.1	150.6
3,617.0	3,573.8	41.94	149.70	188.4	-119.7	156.3
3,646.0	3,594.9	44.49	150.49	208.2	-136.9	166.2
3,650.0	3,597.8	44.90	150.62	211.0	-139.4	167.6
3,678.0	3,617.1	47.75	151.46	231.1	-157.1	177.4
3,700.0	3,631.5	50.43	152.66	247.5	-171.8	185.1
3,709.0	3,637.2	51.53	153.13	254.5	-178.0	188.3
3,725.0	3,646.9	53.66	154.38	267.0	-189.4	194.0
3,740.0	3,655.6	55.66	155.50	279.0	-200.5	199.1
3,750.0	3,661.1	57.13	155.97	287.2	-208.1	202.6
3,771.0	3,672.0	60.23	156.91	304.7	-224.5	209.7
3,775.0	3,674.0	60.78	157.07	308.1	-227.7	211.1
3,801.0	3,686.0	64.37	158.05	330.6	-249.0	219.9
3,832.0	3,698.5	67.80	158.23	358.1	-275.3	230.4
3,850.0	3,705.1	69.38	158.18	374.3	-290.9	236.7
3,863.0	3,709.5	70.52	158.14	386.2	-302.2	241.2
3,894.0	3,719.5	71.93	158.14	414.7	-329.5	252.1
3,900.0	3,721.4	72.56	158.37	420.2	-334.8	254.2
3,926.0	3,728.6	75.27	159.37	444.4	-358.1	263.3
3,950.0	3,733.6	80.24	159.51	467.0	-380.0	271.5
3,957.0	3,734.7	81.69	159.55	473.7	-386.5	273.9
3,975.0	3,736.9	84.44	161.01	490.9	-403.3	279.9
4,000.0	3,738.5	88.26	163.03	514.7	-427.1	287.6
4,018.0	3,738.6	91.01	164.47	531.6	-444.3	292.7
4,025.0	3,738.5	90.21	164.98	538.2	-451.1	294.5
4,048.0	3,739.0	87.58	166.67	559.6	-473.4	300.1
4,080.0	3,740.1	88.29	167.72	589.0	-504.6	307.2
4,100.0	3,740.4	90.38	168.66	607.3	-524.1	311.3
4,112.0	3,740.2	91.63	169.22	618.2	-535.9	313.6
4,143.0	3,739.3	91.71	167.63	646.5	-566.3	319.8
4,150.0	3,739.1	91.36	167.23	652.9	-573.1	321.4
4,175.0	3,738.8	90.13	165.79	676.1	-597.4	327.2
4,200.0	3,738.7	90.06	163.73	699.5	-621.5	333.8
4,206.0	3,738.7	90.04	163.24	705.2	-627.3	335.5
4,238.0	3,739.2	88.29	161.13	735.6	-657.7	345.3
4,250.0	3,739.6	87.82	160.54	747.1	-669.1	349.2

3906

Energen
Energen Resources - Survey



Company:	Energen Resources	Local Co-ordinate Reference:	Well Carracas 22 A #2
Project:	Carson National Forest, NE S22, T32N, R5W	TVD Reference:	KB Height @ 7176.0ft (AWS 289)
Site:	Carracas Mesa	MD Reference:	KB Height @ 7176.0ft (AWS 289)
Well:	Carracas 22 A #2	North Reference:	Grid
Wellbore:	Final Survey	Survey Calculation Method:	Minimum Curvature
Design:	End of Well Survey	Database:	EDM 2003.16 Single User Db

Planned Survey

MD (ft)	TVD (ft)	Inc (°)	Azi (°)	V. Sec (ft)	N/S (ft)	E/W (ft)
4,270.0	3,740.5	87.05	159.55	766.3	-687.9	356.0
4,301.0	3,742.1	87.05	157.79	796.3	-716.7	367.3
4,333.0	3,744.2	85.47	155.68	827.5	-746.0	379.9
4,350.0	3,745.5	85.52	154.19	844.2	-761.4	387.1
4,365.0	3,746.7	85.56	152.87	858.9	-774.8	393.7
4,396.0	3,749.0	85.74	150.93	889.6	-802.0	408.3
4,400.0	3,749.3	85.76	150.64	893.5	-805.5	410.2
4,428.0	3,751.3	85.91	148.65	921.3	-829.6	424.3
4,450.0	3,752.7	86.82	147.02	943.2	-848.2	436.0
4,460.0	3,753.3	87.23	146.28	953.2	-856.5	441.5
4,475.0	3,753.8	88.90	145.62	968.2	-868.9	449.9
4,490.0	3,753.8	90.57	144.96	983.2	-881.3	458.5
4,500.0	3,753.7	90.77	144.51	993.2	-889.4	464.2
4,521.0	3,753.4	91.19	143.55	1,014.2	-906.4	476.6
4,553.0	3,752.9	90.31	140.12	1,046.2	-931.6	496.3
4,584.0	3,752.7	90.57	136.87	1,077.0	-954.8	516.9
4,600.0	3,752.4	91.75	135.87	1,092.8	-966.4	527.9
4,615.0	3,751.8	92.86	134.94	1,107.6	-977.1	538.4
4,647.0	3,750.0	93.56	135.47	1,139.2	-999.7	560.9
4,679.0	3,748.2	92.86	134.94	1,170.7	-1,022.4	583.5
4,710.0	3,746.9	92.07	134.15	1,201.3	-1,044.1	605.5
4,742.0	3,746.3	89.96	133.01	1,232.7	-1,066.2	628.7
4,750.0	3,746.3	89.23	132.31	1,240.5	-1,071.6	634.6
4,772.0	3,747.0	87.23	130.37	1,262.0	-1,086.1	651.1
4,804.0	3,748.9	85.91	129.75	1,292.9	-1,106.7	675.5
4,835.0	3,751.1	86.17	130.19	1,322.9	-1,126.5	699.2
4,850.0	3,752.0	86.47	131.13	1,337.4	-1,136.3	710.6
4,866.0	3,753.0	86.79	132.13	1,353.0	-1,146.9	722.5
4,898.0	3,754.9	86.44	132.21	1,384.2	-1,168.4	746.2
4,900.0	3,755.0	86.42	132.22	1,386.2	-1,169.7	747.7
4,929.0	3,756.9	86.17	132.39	1,414.5	-1,189.2	769.1
4,959.0	3,758.9	86.09	132.65	1,443.8	-1,209.4	791.2
4,991.0	3,761.1	86.00	132.74	1,475.1	-1,231.1	814.6
5,000.0	3,761.7	86.17	133.06	1,483.9	-1,237.2	821.2
5,023.0	3,763.2	86.61	133.88	1,506.4	-1,253.0	837.9
5,053.0	3,765.1	86.17	133.97	1,535.9	-1,273.7	859.4
5,085.0	3,766.9	87.23	134.76	1,567.3	-1,296.1	882.3
5,100.0	3,767.6	87.48	134.97	1,582.1	-1,306.6	892.9
5,117.0	3,768.3	87.76	135.20	1,598.9	-1,318.7	904.9
5,148.0	3,769.0	89.78	136.43	1,629.5	-1,340.9	926.5
5,180.0	3,768.8	90.75	137.49	1,661.3	-1,364.3	948.3
5,200.0	3,768.5	90.81	137.38	1,681.1	-1,379.0	961.8
5,212.0	3,768.4	90.84	137.31	1,693.0	-1,387.8	970.0
5,243.0	3,768.2	89.87	135.99	1,723.8	-1,410.4	991.2
5,250.0	3,768.2	89.51	135.73	1,730.7	-1,415.4	996.1

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Planned Survey

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5,274.0	3,768.7	88.29	134.85	1,754.4	-1,432.4	1,013.0
5,295.0	3,769.3	88.02	134.06	1,775.1	-1,447.1	1,028.0
5,300.0	3,769.5	88.02	134.06	1,780.0	-1,450.6	1,031.6
5,350.0	3,771.2	88.02	134.06	1,829.2	-1,485.4	1,067.5

Checked By: _____	Approved By: _____	Date: _____
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