

Submit 3 Copies To Appropriate District  
Office  
District I  
1625 N. French Dr., Hobbs, NM 87240  
District II  
1301 W. Grand Ave., 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 and Natural Resources

Form C-103  
June 19, 2008

OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

WELL API NO. 30-039-31309
5. Indicate Type of Lease STATE <input type="checkbox"/> FEE <input checked="" type="checkbox"/>
6. State Oil & Gas Lease No.
7. Lease Name or Unit Agreement Name: Many Canyons 24-03 8
8. Well Number #4H
9. OGRID Number 162928
10. Pool name or Wildcat West Lindrith Gallup-Dakota

SUNDRY NOTICES AND REPORTS ON WELLS  
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A  
DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH  
PROPOSALS.)

1. Type of Well: Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other
2. Name of Operator Energen Resources Corporation
3. Address of Operator 2010 Afton Place, Farmington, NM 87401
4. Well Location Unit Letter P : 1230 feet from the South line and 716 feet from the East line Section 8 Township 24N Range 03W NMPM County Rio Arriba
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 6878' GL

12. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐  
TEMPORARILY ABANDON ☐ CHANGE PLANS ☒  
PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐  
DOWNHOLE COMMINGLE ☐

OTHER: ☐

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐  
COMMENCE DRILLING OPNS. ☐ P AND A ☐  
CASING/CEMENT JOB ☐

OTHER: ☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

After formation evaluation, Energen Resources would like to make the following changes to the Many Canyons 24-03 8 #4H:

Change the set depth of the 7" second intermediate to 6,505' (TVD); 7,265' (MD) and increase the tail cement to 185 sks.

Change the set depth of the 4 1/2" liner to 6,505' - 6,389' (TVD); 7,065' - 11,954' (MD) and increase the cement to 510 sks. The take points for production will remain at 330 fsl, 330 fwl and 330 fsl, 330 fel.

Attached is a revised drilling operations plan and directional plan depicting this change.

OIL CONS. DIV DIST. 3

Spud Date:

7/01/15

Rig Release Date:

JUL 28 2015

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE

*Anna Stotts*

TITLE

Regulatory Analyst

DATE

7/27/15

Type or print name Anna Stotts

E-mail address:

astotts@energen.com

PHONE

324-4154

For State Use Only

APPROVED BY

*Charles*

TITLE

SUPERVISOR DISTRICT #3

DATE

JUL 31 2015

Conditions of Approval (if any):

AV

# **Energen Resources**

Many Canyons Sec 8, T24N, R3W

Many Canyons 24-03 8 #004H

Preliminary Desgin

Design #1

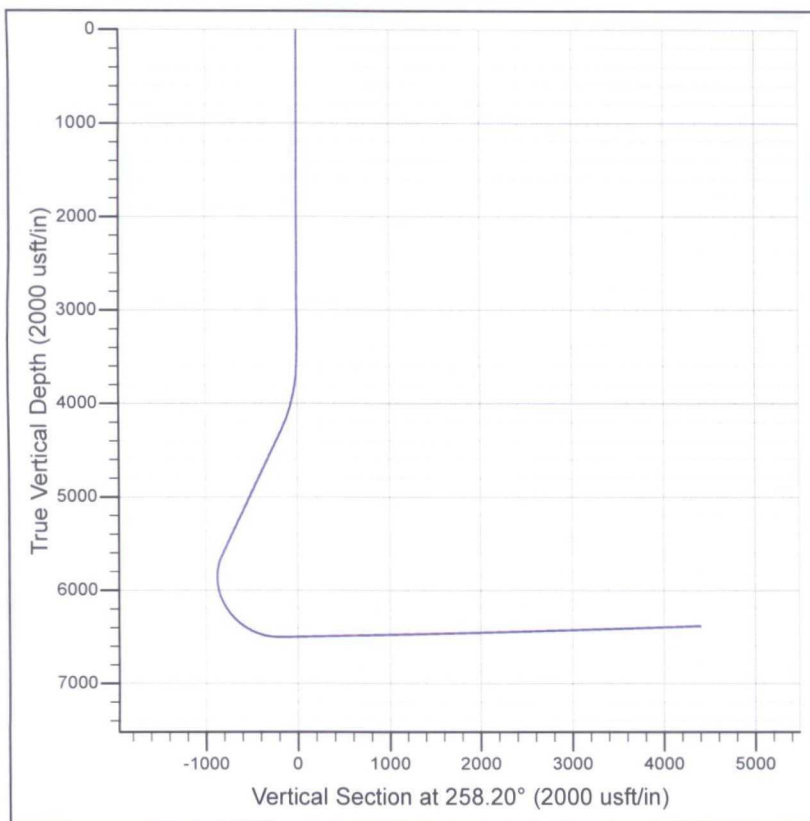
Plan: APD Plan - Revised

## **Preliminary Design**

27 July, 2015

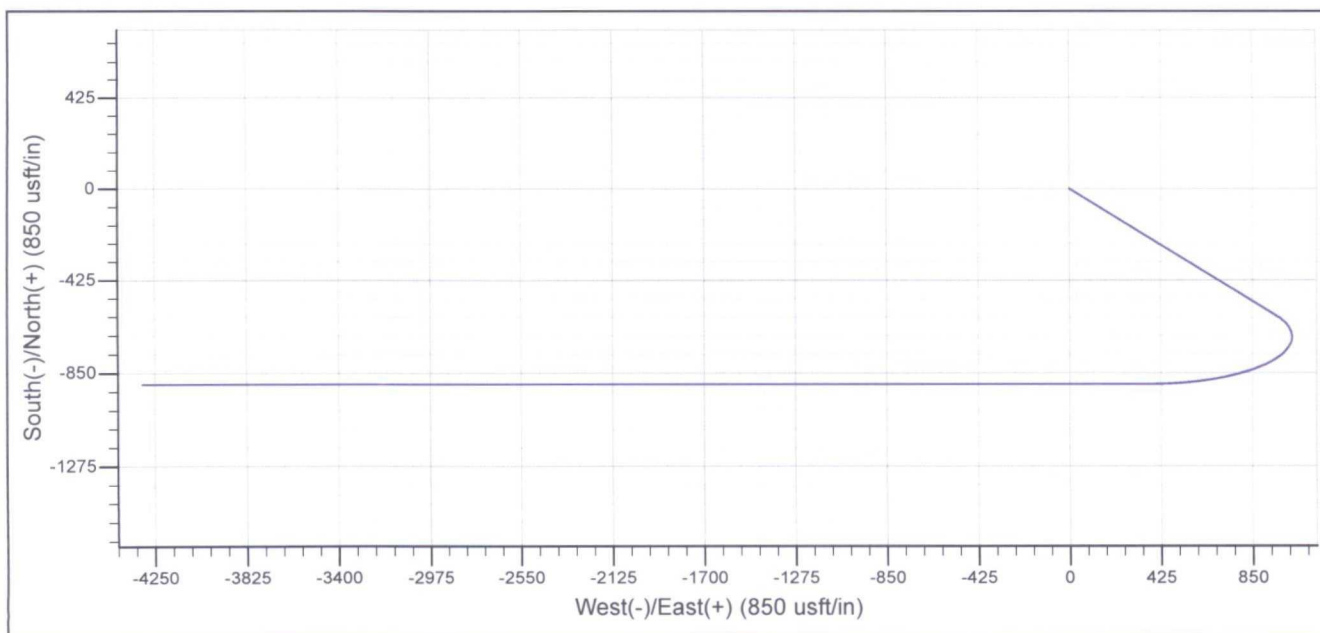
Company Name: Energen Resources

Project: Many Canyons Sec 8, T24N, R3W  
 Site: Many Canyons 24-03 8 #004H  
 Well: Preliminary Design  
 Wellbore: Design #1  
 Design: APD Plan - Revised



# SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0
2	3500.0	0.00	0.00	3500.0	0.0	0.0	0.00	0.00	0.0
3	4339.9	33.60	121.52	4292.6	-125.1	204.0	4.00	121.52	-174.1
4	5936.0	33.60	121.52	5622.1	-586.8	956.8	0.00	0.00	-816.6
5	7259.2	91.00	270.00	6505.0	-900.0	385.0	9.00	143.26	-192.8
6	11954.2	91.83	270.00	6389.1	-900.0	-4308.5	0.02	0.00	4401.5





# Energen

## Preliminary Design

Company:	Energen Resources	Local Co-ordinate Reference:	Site Many Canyons 24-03 8 #004H
Project:	Many Canyons Sec 8, T24N, R3W	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Many Canyons 24-03 8 #004H	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Well:	Preliminary Desgin	North Reference:	Grid
Wellbore:	Design #1	Survey Calculation Method:	Minimum Curvature
Design:	APD Plan - Revised	Database:	EDM 5000.1 Single User Db

Project	Many Canyons Sec 8, T24N, R3W, Rio Arriba County, NM, Single Lateral		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site Many Canyons 24-03 8 #004H

Site Position:	Northing:	1,948,429.33 usft	Latitude:	36° 19' 15.708 N
From: Lat/Long	Easting:	-295,388.39 usft	Longitude:	107° 10' 24.132 W
Position Uncertainty: 0.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	-1.68 °

Well Preliminary Desgin

Well Position	+N/-S	0.0 usft	Northing:	1,948,429.33 usft	Latitude:	36° 19' 15.708 N
	+E/-W	0.0 usft	Easting:	-295,388.39 usft	Longitude:	107° 10' 24.132 W
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft	Ground Level:	0.0 usft	

Wellbore Design #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	User Defined	2/26/2015	0.00	0.00	0

Design APD Plan - Revised

Audit Notes:

Version: Phase: PROTOTYPE Tie On Depth: 0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	258.20

Survey Tool Program Date 7/27/2015

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	11,954.2	APD Plan - Revised (Design #1)	MWD	MWD - Standard

Planned Survey

TVD (usft)	MD (usft)	Inc (°)	Azi (azimuth) (°)	N/S (usft)	E/W (usft)	Build (°/100usft)	V. Sec (usft)
0.0	0.0	0.00	0.00	0.0	0.0	0.00	0.0
100.0	100.0	0.00	0.00	0.0	0.0	0.00	0.0
200.0	200.0	0.00	0.00	0.0	0.0	0.00	0.0
13 3/8"							
300.0	300.0	0.00	0.00	0.0	0.0	0.00	0.0
400.0	400.0	0.00	0.00	0.0	0.0	0.00	0.0
500.0	500.0	0.00	0.00	0.0	0.0	0.00	0.0
600.0	600.0	0.00	0.00	0.0	0.0	0.00	0.0
700.0	700.0	0.00	0.00	0.0	0.0	0.00	0.0
800.0	800.0	0.00	0.00	0.0	0.0	0.00	0.0
900.0	900.0	0.00	0.00	0.0	0.0	0.00	0.0
1,000.0	1,000.0	0.00	0.00	0.0	0.0	0.00	0.0

# Energen

## Preliminary Design

Company:	Energen Resources	Local Co-ordinate Reference:	Site Many Canyons 24-03 8 #004H
Project:	Many Canyons Sec 8, T24N, R3W	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Many Canyons 24-03 8 #004H	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Well:	Preliminary Desgin	North Reference:	Grid
Wellbore:	Design #1	Survey Calculation Method:	Minimum Curvature
Design:	APD Plan - Revised	Database:	EDM 5000.1 Single User Db

### Planned Survey

TVD (usft)	MD (usft)	Inc (°)	Azi (azimuth) (°)	N/S (usft)	E/W (usft)	Build (°/100usft)	V. Sec (usft)
1,100.0	1,100.0	0.00	0.00	0.0	0.0	0.00	0.0
1,200.0	1,200.0	0.00	0.00	0.0	0.0	0.00	0.0
1,300.0	1,300.0	0.00	0.00	0.0	0.0	0.00	0.0
1,400.0	1,400.0	0.00	0.00	0.0	0.0	0.00	0.0
1,500.0	1,500.0	0.00	0.00	0.0	0.0	0.00	0.0
1,600.0	1,600.0	0.00	0.00	0.0	0.0	0.00	0.0
1,700.0	1,700.0	0.00	0.00	0.0	0.0	0.00	0.0
1,800.0	1,800.0	0.00	0.00	0.0	0.0	0.00	0.0
1,900.0	1,900.0	0.00	0.00	0.0	0.0	0.00	0.0
2,000.0	2,000.0	0.00	0.00	0.0	0.0	0.00	0.0
2,100.0	2,100.0	0.00	0.00	0.0	0.0	0.00	0.0
2,200.0	2,200.0	0.00	0.00	0.0	0.0	0.00	0.0
2,300.0	2,300.0	0.00	0.00	0.0	0.0	0.00	0.0
2,400.0	2,400.0	0.00	0.00	0.0	0.0	0.00	0.0
2,500.0	2,500.0	0.00	0.00	0.0	0.0	0.00	0.0
2,600.0	2,600.0	0.00	0.00	0.0	0.0	0.00	0.0
2,700.0	2,700.0	0.00	0.00	0.0	0.0	0.00	0.0
2,800.0	2,800.0	0.00	0.00	0.0	0.0	0.00	0.0
2,900.0	2,900.0	0.00	0.00	0.0	0.0	0.00	0.0
3,000.0	3,000.0	0.00	0.00	0.0	0.0	0.00	0.0
3,100.0	3,100.0	0.00	0.00	0.0	0.0	0.00	0.0
3,200.0	3,200.0	0.00	0.00	0.0	0.0	0.00	0.0
3,250.0	3,250.0	0.00	0.00	0.0	0.0	0.00	0.0
9 5/8"							
3,300.0	3,300.0	0.00	0.00	0.0	0.0	0.00	0.0
3,400.0	3,400.0	0.00	0.00	0.0	0.0	0.00	0.0
3,500.0	3,500.0	0.00	0.00	0.0	0.0	0.00	0.0
3,599.9	3,600.0	4.00	121.52	-1.8	3.0	4.00	-2.5
3,699.4	3,700.0	8.00	121.52	-7.3	11.9	4.00	-10.1
3,797.8	3,800.0	12.00	121.52	-16.4	26.7	4.00	-22.8
3,894.8	3,900.0	16.00	121.52	-29.0	47.3	4.00	-40.4
3,989.9	4,000.0	20.00	121.52	-45.2	73.6	4.00	-62.8
4,082.6	4,100.0	24.00	121.52	-64.7	105.6	4.00	-90.1
4,172.5	4,200.0	28.00	121.52	-87.7	142.9	4.00	-122.0
4,259.1	4,300.0	32.00	121.52	-113.8	185.5	4.00	-158.4
4,292.6	4,339.9	33.60	121.52	-125.1	204.0	4.00	-174.1
4,342.7	4,400.0	33.60	121.52	-142.5	232.3	0.00	-198.3
4,425.9	4,500.0	33.60	121.52	-171.4	279.5	0.00	-238.5
4,509.2	4,600.0	33.60	121.52	-200.3	326.7	0.00	-278.8
4,592.5	4,700.0	33.60	121.52	-229.3	373.8	0.00	-319.0
4,675.8	4,800.0	33.60	121.52	-258.2	421.0	0.00	-359.3
4,759.1	4,900.0	33.60	121.52	-287.1	468.2	0.00	-399.6
4,842.4	5,000.0	33.60	121.52	-316.0	515.3	0.00	-439.8
4,925.7	5,100.0	33.60	121.52	-345.0	562.5	0.00	-480.1
5,009.0	5,200.0	33.60	121.52	-373.9	609.7	0.00	-520.3

# Energen

## Preliminary Design

<b>Company:</b>	Energen Resources	<b>Local Co-ordinate Reference:</b>	Site Many Canyons 24-03 8 #004H
<b>Project:</b>	Many Canyons Sec 8, T24N, R3W	<b>TVD Reference:</b>	WELL @ 0.0usft (Original Well Elev)
<b>Site:</b>	Many Canyons 24-03 8 #004H	<b>MD Reference:</b>	WELL @ 0.0usft (Original Well Elev)
<b>Well:</b>	Preliminary Design	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Design #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	APD Plan - Revised	<b>Database:</b>	EDM 5000.1 Single User Db

Planned Survey							
TVD (usft)	MD (usft)	Inc (°)	Azi (azimuth) (°)	N/S (usft)	E/W (usft)	Build (°/100usft)	V. Sec (usft)
5,092.3	5,300.0	33.60	121.52	-402.8	656.8	0.00	-560.6
5,175.6	5,400.0	33.60	121.52	-431.8	704.0	0.00	-600.8
5,258.9	5,500.0	33.60	121.52	-460.7	751.2	0.00	-641.1
5,342.2	5,600.0	33.60	121.52	-489.6	798.3	0.00	-681.4
5,425.5	5,700.0	33.60	121.52	-518.5	845.5	0.00	-721.6
5,508.8	5,800.0	33.60	121.52	-547.5	892.7	0.00	-761.9
5,592.1	5,900.0	33.60	121.52	-576.4	939.8	0.00	-802.1
5,622.1	5,936.0	33.60	121.52	-586.8	956.8	0.00	-816.6
5,633.8	5,950.0	32.59	122.92	-590.9	963.3	-7.16	-822.1
5,676.7	6,000.0	29.16	128.60	-605.8	984.1	-6.87	-839.5
5,721.0	6,050.0	26.02	135.58	-621.3	1,001.3	-6.28	-853.1
5,766.5	6,100.0	23.30	144.18	-637.1	1,014.8	-5.44	-863.1
5,812.8	6,150.0	21.15	154.67	-653.3	1,024.5	-4.29	-869.2
5,859.7	6,200.0	19.78	166.94	-669.7	1,030.2	-2.76	-871.5
5,906.8	6,250.0	19.33	180.35	-686.2	1,032.1	-0.89	-870.0
5,953.9	6,300.0	19.88	193.69	-702.8	1,030.0	1.10	-864.6
6,000.8	6,350.0	21.34	205.81	-719.2	1,024.1	2.93	-855.4
6,047.0	6,400.0	23.56	216.09	-735.5	1,014.2	4.43	-842.4
6,092.3	6,450.0	26.33	224.51	-751.5	1,000.5	5.54	-825.7
6,136.5	6,500.0	29.50	231.34	-767.1	983.1	6.35	-805.5
6,179.3	6,550.0	32.96	236.90	-782.2	962.1	6.92	-781.8
6,220.3	6,600.0	36.62	241.49	-796.8	937.6	7.32	-754.9
6,259.4	6,650.0	40.43	245.34	-810.7	909.7	7.62	-724.8
6,296.4	6,700.0	44.35	248.62	-823.8	878.7	7.84	-691.7
6,330.9	6,750.0	48.35	251.47	-836.1	844.7	8.00	-655.9
6,362.8	6,800.0	52.42	253.99	-847.5	807.9	8.13	-617.6
6,391.8	6,850.0	56.53	256.24	-857.9	768.6	8.22	-577.0
6,417.9	6,900.0	60.67	258.29	-867.3	727.0	8.30	-534.3
6,440.7	6,950.0	64.85	260.17	-875.6	683.3	8.35	-489.9
6,460.3	7,000.0	69.05	261.93	-882.8	637.9	8.40	-443.9
6,476.5	7,050.0	73.26	263.60	-888.7	591.0	8.43	-396.8
6,489.1	7,100.0	77.49	265.19	-893.4	542.8	8.46	-348.7
6,498.1	7,150.0	81.73	266.73	-896.9	493.8	8.47	-300.0
6,503.4	7,200.0	85.97	268.23	-899.1	444.1	8.49	-250.9
6,505.1	7,250.0	90.22	269.73	-900.0	394.2	8.49	-201.8
6,505.0	7,259.2	91.00	270.00	-900.0	385.0	8.49	-192.8
6,504.9	7,265.0	91.00	270.00	-900.0	379.2	0.00	-187.2
7"							
6,504.3	7,300.0	91.01	270.00	-900.0	344.2	0.02	-152.9
6,502.5	7,400.0	91.02	270.00	-900.0	244.2	0.02	-55.0
6,500.7	7,500.0	91.04	270.00	-900.0	144.2	0.02	42.8
6,498.9	7,600.0	91.06	270.00	-900.0	44.2	0.02	140.7
6,497.0	7,700.0	91.08	270.00	-900.0	-55.7	0.02	238.6
6,495.1	7,800.0	91.10	270.00	-900.0	-155.7	0.02	336.5



# Energen

## Preliminary Design

<b>Company:</b>	Energen Resources	<b>Local Co-ordinate Reference:</b>	Site Many Canyons 24-03 8 #004H
<b>Project:</b>	Many Canyons Sec 8, T24N, R3W	<b>TVD Reference:</b>	WELL @ 0.0usft (Original Well Elev)
<b>Site:</b>	Many Canyons 24-03 8 #004H	<b>MD Reference:</b>	WELL @ 0.0usft (Original Well Elev)
<b>Well:</b>	Preliminary Design	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Design #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	APD Plan - Revised	<b>Database:</b>	EDM 5000.1 Single User Db

### Planned Survey

TVD (usft)	MD (usft)	Inc (°)	Azi (azimuth) (°)	N/S (usft)	E/W (usft)	Build (°/100usft)	V. Sec (usft)
6,493.2	7,900.0	91.11	270.00	-900.0	-255.7	0.02	434.3
6,491.2	8,000.0	91.13	270.00	-900.0	-355.7	0.02	532.2
6,489.2	8,100.0	91.15	270.00	-900.0	-455.7	0.02	630.1
6,487.2	8,200.0	91.17	270.00	-900.0	-555.6	0.02	727.9
6,485.2	8,300.0	91.18	270.00	-900.0	-655.6	0.02	825.8
6,483.1	8,400.0	91.20	270.00	-900.0	-755.6	0.02	923.7
6,481.0	8,500.0	91.22	270.00	-900.0	-855.6	0.02	1,021.5
6,478.8	8,600.0	91.24	270.00	-900.0	-955.6	0.02	1,119.4
6,476.7	8,700.0	91.25	270.00	-900.0	-1,055.5	0.02	1,217.3
6,474.4	8,800.0	91.27	270.00	-900.0	-1,155.5	0.02	1,315.1
6,472.2	8,900.0	91.29	270.00	-900.0	-1,255.5	0.02	1,413.0
6,469.9	9,000.0	91.31	270.00	-900.0	-1,355.5	0.02	1,510.8
6,467.6	9,100.0	91.33	270.00	-900.0	-1,455.4	0.02	1,608.7
6,465.3	9,200.0	91.34	270.00	-900.0	-1,555.4	0.02	1,706.6
6,463.0	9,300.0	91.36	270.00	-900.0	-1,655.4	0.02	1,804.4
6,460.6	9,400.0	91.38	270.00	-900.0	-1,755.3	0.02	1,902.3
6,458.1	9,500.0	91.40	270.00	-900.0	-1,855.3	0.02	2,000.1
6,455.7	9,600.0	91.41	270.00	-900.0	-1,955.3	0.02	2,098.0
6,453.2	9,700.0	91.43	270.00	-900.0	-2,055.3	0.02	2,195.9
6,450.7	9,800.0	91.45	270.00	-900.0	-2,155.2	0.02	2,293.7
6,448.2	9,900.0	91.47	270.00	-900.0	-2,255.2	0.02	2,391.6
6,445.6	10,000.0	91.48	270.00	-900.0	-2,355.2	0.02	2,489.4
6,443.0	10,100.0	91.50	270.00	-900.0	-2,455.1	0.02	2,587.3
6,440.3	10,200.0	91.52	270.00	-900.0	-2,555.1	0.02	2,685.1
6,437.7	10,300.0	91.54	270.00	-900.0	-2,655.1	0.02	2,783.0
6,435.0	10,400.0	91.56	270.00	-900.0	-2,755.0	0.02	2,880.8
6,432.2	10,500.0	91.57	270.00	-900.0	-2,855.0	0.02	2,978.7
6,429.5	10,600.0	91.59	270.00	-900.0	-2,954.9	0.02	3,076.5
6,426.7	10,700.0	91.61	270.00	-900.0	-3,054.9	0.02	3,174.4
6,423.9	10,800.0	91.63	270.00	-900.0	-3,154.9	0.02	3,272.2
6,421.0	10,900.0	91.64	270.00	-900.0	-3,254.8	0.02	3,370.1
6,418.1	11,000.0	91.66	270.00	-900.0	-3,354.8	0.02	3,467.9
6,415.2	11,100.0	91.68	270.00	-900.0	-3,454.7	0.02	3,565.8
6,412.3	11,200.0	91.70	270.00	-900.0	-3,554.7	0.02	3,663.6
6,409.3	11,300.0	91.71	270.00	-900.0	-3,654.7	0.02	3,761.5
6,406.3	11,400.0	91.73	270.00	-900.0	-3,754.6	0.02	3,859.3
6,403.2	11,500.0	91.75	270.00	-900.0	-3,854.6	0.02	3,957.1
6,400.2	11,600.0	91.77	270.00	-900.0	-3,954.5	0.02	4,055.0
6,397.1	11,700.0	91.79	270.00	-900.0	-4,054.5	0.02	4,152.8
6,394.0	11,800.0	91.80	270.00	-900.0	-4,154.4	0.02	4,250.7
6,390.8	11,900.0	91.82	270.00	-900.0	-4,254.4	0.02	4,348.5
6,389.1	11,954.0	91.83	270.00	-900.0	-4,308.3	0.02	4,401.3
4 1/2"							
6,389.1	11,954.2	91.83	270.00	-900.0	-4,308.5	0.02	4,401.5

**Energen**  
Preliminary Design

<b>Company:</b> Energen Resources <b>Project:</b> Many Canyons Sec 8, T24N, R3W <b>Site:</b> Many Canyons 24-03 8 #004H <b>Well:</b> Preliminary Desgin <b>Wellbore:</b> Design #1 <b>Design:</b> APD Plan - Revised	<b>Local Co-ordinate Reference:</b> <b>TVD Reference:</b> <b>MD Reference:</b> <b>North Reference:</b> <b>Survey Calculation Method:</b> <b>Database:</b>	Site Many Canyons 24-03 8 #004H WELL @ 0.0usft (Original Well Elev) WELL @ 0.0usft (Original Well Elev) Grid Minimum Curvature EDM 5000.1 Single User Db
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**Casing Points**

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
11,954.0	6,389.1	4 1/2"	4-1/2	6-1/4
7,265.0	6,504.9	7"	7	8-3/4
3,250.0	3,250.0	9 5/8"	9-5/8	12-1/4
200.0	200.0	13 3/8"	13-3/8	17-1/2

Checked By: _____	Approved By: _____	Date: _____
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## Drilling Plan

### Energen Resources Corporation

#### Many Canyons 24-03 8 #4H

Surface Location: 1230 FSL, 716 FEL

Legal Description: Sec 8, T24N, R3W (36.321030° N, 107.173370° W – NAD83)

Bottom Hole Location: 330 FSL, 330 FWL

Legal Description: Sec 8, T24N, R3W (36.318500° N, 107.187762° W – NAD83)

Rio Arriba County, NM

1. The elevation of the unprepared ground is 6,878 feet above sea level.
2. The geological name of the surface formation is the Nacimiento.
3. A rotary rig will be used to drill the well to a Proposed Total Depth of 6,505' TVD/11,954' MD.
4. Estimated top of important geological markers:

<u>Formation</u>	<u>Depth (TVD)(ft)</u>	<u>Depth (MD)(ft)</u>
San Jose	Surface	Surface
Nacimiento	1,235	1,235
Ojo Alamo	2,465	2,465
Kirtland	2,597	2,597
Pictured Cliffs	3,026	3,026
Lewis	3,134	3,134
Huerfano Bentonite	3,438	3,438
Chacara	3,929	3,935
Cliff House	4,704	4,834
Menefee	4,726	4,860
Point Lookout	5,221	5,455
Mancos	5,561	5,908
Mancos Landing Depth	6,505	7,235

5. Estimated depth at which anticipated water, oil, gas or other mineral bearing formations are expected to be encountered:

<u>Formation</u>	<u>Depth (TVD)(ft)</u>	<u>Water/HydroCarbon</u>
Pictured Cliffs	3,026	Gas
Cliffhouse	4,704	Gas
Point Lookout	5,221	Gas
Mancos	5,561	Oil/Gas

6. All proposed casing is new and the program is as follows:

Casing	Size	Depth		Grade	Weight	Connection	PSI x1000 lbs		
		MD	TVD				Burst	Collapse	Tension
Surface	13-3/8"	0-200'	0-200'	H-40	48.0	STC	1730	770	322
1 <sup>st</sup> Intermediate	9-5/8"	0-3,250'	0-3,250'	J-55	36.00	LTC	3520	2020	394
2 <sup>nd</sup> Intermediate	7"	0-7,265'	0-6,505'	L-80	26.00	DQX TMK IPSCO	7240	5410	830
Production	4-1/2"	7,065'-11,954'	6,505'-6,389'	P-110	11.60	DQX TMK IPSCO	10690	7560	367

## 7. Cementing Program:

- a. 17-1/2" hole x 13-3/8" casing at 200' will have cement circulated to surface with 240 sks (100% excess true hole) Class H Cement with 1.0 % CaCl<sub>2</sub>, 1/2 #/sk Poly-E-Flake 15.8 ppg, 1.17 ft<sup>3</sup>/sk. Note: CEMENT MUST BE CIRCULATED TO SURFACE. STANDARD BOW SPRING CENTRALIZERS SHALL BE PLACED ON THE FIRST 3 (BOTTOM 3) JOINTS OF CASING (1 PER JOINT) AND 1 EVERY 3<sup>RD</sup> JOINT TO SURFACE. 20 BBLS OF WATER AHEAD OF CEMENT AS SPACER
- b. 12-1/4" hole x 9-5/8" casing at 3,250' will have cement circulated to surface with 655 sks (50% excess true hole) of HALCEM™ SYSTEM with 0.125 #/sk Poly-E-Flake – 12.3 ppg, 1.93 ft<sup>3</sup>/sk followed 200 sks (50% excess true hole) VARICEM™ CEMENT 13.5 ppg, 1.29 ft<sup>3</sup>/sk. Note: CEMENT MUST BE CIRCULATED TO SURFACE. STANDARD BOW SPRING CENTRALIZERS SHALL BE PLACED ON THE FIRST 3 (BOTTOM 3) JOINTS OF CASING (1 PER JOINT) AND 1 EVERY 3<sup>RD</sup> JOINT TO SURFACE. 20 BBLS OF WATER FOLLOWED BY 20 BBLS OF MUDFLUSH AHEAD OF CEMENT AS SPACER Stage Tool to be placed at 2,650' if needed depending on wellbore conditions in the Pictured Cliffs Formation.
- c. 8-3/4" hole x 7" casing at 7,265'. Cement will be circulated to surface with 770 sks (50% excess true hole) of HALCEM™ SYSTEM with 0.125 #/sk Poly-E-Flake – 12.3 ppg, 1.93 ft<sup>3</sup>/sk followed by 185 sks (100% excess true hole) VARICEM™ CEMENT – 13.5 ppg, 1.29 ft<sup>3</sup>/sk. ONE CENTRALIZER PER JOINT FOR THE FIRST 3 JOINTS, THEN EVERY 3<sup>RD</sup> JOINT TO SURFACE. 10 BBLS OF WATER FOLLOWED BY 30 BBLS OF MUDFLUSH AHEAD OF CEMENT AS SPACER. Test Intermediate Casing to 1500 psi. Cement Additives Subject to Change Based on Wellbore Conditions and Cement Design Criteria
- d. 6-1/4" hole x 4-1/2" liner at 11,954'. A fluid caliper will be run to determine base slurry cement to have TOC at 7,065'. Base slurry to consist of 510 sks BONDCEM™ CEMENT – 13.3 ppg, 1.35 ft<sup>3</sup>/sk (50% excess). CENTRALIZERS TO BE USED AT DISCRETION IN LATERAL TO ACHIEVE DESIRED STAND OFF. ONE CENTRALIZER PER JOINT FOR THE FIRST 4 JOINTS AND 1 CENTRALIZER PER JOINT FROM 7265' TO 7,065'. HALLIBURTON VERSAFLEX LINER SYSTEM TO BE USED FOR LINER TOP ISOLATION. Liner to be Pressure Tested During Completion Operations.

## 8. Pressure Control Equipment

- a. BOPE to be installed prior to Surface Casing drillout.
- b. Pressure control equipment will be used to meet 2,000 (2M) psi specifications.
- c. Minimum BOPE working pressure of 3,000 psi.
- d. Function test and visual inspection to be done at each casing size change prior to drill out.
- e. BOP annular to be tested to 85% of working pressure.
- f. All BOP and related equipment will be tested in accordance with the requirements outlined in Onshore Order No. 2 and Notice to Operators dated May 27, 2005.
- g. BOP remote controls to be located on rig floor and readily accessible, master control on ground at accumulator will be able to function all preventors.
- h. Kill line will be 2 in min and have two kill line valves, one being a check valve.
- i. Choke line will be 2 in min and have two choke line valves, choke manifold with have two adjustable chokes, one manual and one remote. All choke lines will be as straight as possible. Any turns will be properly targeted using block and/or running tees. Choke line and manifold to be pressure tested to 1,500 psi.
- j. Float sub and TIW valve will be on the rig floor at all times.
- k. If high pressure co-flex hoses are used, they will be run as straight as possible and anchored to prevent whip.
- l. The main discharge line (panic line) will be at least 100' from the choke manifold and discharged into an appropriately sized discharge facility.

9. Mud Program:

0' - 200'	Fresh water/Spud Mud. Paper for losses and seepage. 8.5 to 9.0 ppg, 32 to 75 vis, PV 3 to 5, YP 5 to 7, WL NC
200' - 7,265'	Fresh water/LSND. As needed LCM for losses and seepage. 8.5 to 9.5 ppg, pH 10, 28 to 60 vis, PV 1, YP 1, WL 8-15
7,265' - 11,954'	WBM with shale and clay stabilizers. As needed LCM for losses and seepage. 8.3 to 9.3 ppg, 15 to 35 vis, PV 4-6, YP 4-6, WL < 20

**\*\*During drilling operations, all necessary products will be sufficiently stored on location for abnormal situations. The characteristics, use, testing of drilling mud and the implementation of related drilling procedures shall be designed to prevent the loss of well control. Sufficient quantities of mud materials shall be maintained or readily accessible for the purpose of assuring well control.**

**\*\*A pH of 10 or above in the fresh water base mud system shall be maintained to control the effects corrosion has on metallurgy of equipment used.**

Operating and Maintenance

Energen Resources Corporation will be using all above ground steel pits for fluid and cuttings while drilling. If any tank develops a leak we will have immediate visual discovery, we would then transfer the fluid to another tank then remove any contaminated soil and dispose of it in the cuttings bins for transportation. Any leaks, spills or other undesirable events will be reported in accordance with BLM NTL 3A. Rig crews will monitor the tanks at all times. A trip/surge tank will be used to monitor returns for any "kicks" of formation fluids.

Equipment:

2-Mongoose Shale Shakers

2-3400 High Speed Centrifuges with stands and pumps

2-Roll off bins with Tracks

2-200 bbl Open top Frac tanks

1-Mud/Gas Separator and Degasser

1-Trip/Surge Tank

Electronic or Visual monitoring system to indicate lost returns

10. Testing, Logging and Coring Program:

- a. Testing Program: No drillstem tests are anticipated
- b. Electric Logging Program: Triple Combo, FMI, Sonic Scanner
- c. LWD Program: TBD
- d. Coring Program: Sidewall Cores through Mancos Formation
- e. CBL's and/or Temperature Surveys Will Be Performed as Needed or Required.

11. Bottom Hole Pressure expected to be 2,500 +/- psi

12. Bottom Hole Temperature expected to be 160 deg F.