

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

RECEIVED

FORM APPROVED  
OMB NO. 1004-0137  
Expires July 31, 2010

FEB 20 2009

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

5. Lease Serial No.  
SF 077764

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.

8. Well Name and No.  
Schumacher 12E

9. API Well No.  
30-045-34874

10. Field and Pool, or Exploratory Area  
Basin Dakota

11. County or Parish, State  
San Juan NM

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well  
☐ Oil Well ☒ Gas Well ☐ Other

2. Name of Operator  
Energen Resources Corporation

3a. Address  
2010 Afton Place, Farmington, NM 87401

3b. Phone No. (include area code)  
(505) 325-6800

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)  
SHL: 1372' FNL, 680' FEL Sec.17 T30N, R10W  
BHL: 1700' FNL, 1850' FWL Sec.17, T30N, R10W

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize <input type="checkbox"/> Deepen <input type="checkbox"/> Production (Start/Resume) <input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing <input type="checkbox"/> Fracture Treat <input type="checkbox"/> Reclamation <input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair <input type="checkbox"/> New Construction <input type="checkbox"/> Recomplete <input type="checkbox"/> Other
	<input checked="" type="checkbox"/> Change Plans <input type="checkbox"/> Plug and Abandon <input type="checkbox"/> Temporarily Abandon
	<input type="checkbox"/> Convert to Injection <input type="checkbox"/> Plug Back <input type="checkbox"/> Water Disposal

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the final site is ready for final inspection.)

Energen Resources would like make the following changes to the Schumacher #12E:

- Change the setting depth of the 4-1/2" production casing from 8552' MD to 8364' MD ✓
- Change the kick-off point from 3000' TVD to 500' TVD ✓
- Attached is a revised drilling/operations plan and directional plan. ✓

RCVD FEB 24 '09  
OIL CONS. DIV.

DIST. 3

CONDITIONS OF APPROVAL  
Adhere to previously issued stipulations.

Hold C104  
for Directional Survey  
and "As Drilled" plat

14. I hereby certify that the foregoing is true and correct

Name (Printed/Typed)

Jason Kincaid

Title Drilling Engineer

Signature

Date 2/20/2009

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Troy L. Salyers

Title

Petroleum Engineer

Date

2/23/2009

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office

FFO

Title 18 U.S.C. Section 1001, and Title 43 U.S.C. Section 1212, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

2/20/2009



RECEIVED

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**OPERATIONS PLAN**

WELL NAME.....Schumacher #12E  
JOB TYPE.....Deviated New Drill  
DEPT.....Drilling and Completions  
PREPARED BY.....Jason Kincaid

Bureau of Land Management  
Farmington Field Office

**GENERAL INFORMATION**

Surface Location	1372 fnl, 680 fel
S-T-R	NE Sec.17, T30N, R10W
Bottom Hole Location	1700 fnl, 1850 fwl
S-T-R	NW Sec.17, T30N, R10W
County, State	San Juan, New Mexico
Elevations	6466' GL
Total Depth	8364' +/- (MD); 7650' (TVD)
Formation Objective	Basin Dakota

**FORMATION TOPS**

Nacimiento	Surface	Point Lookout Ss	5237'
Ojo Alamo Ss	1617'	Mancos Shale	5705'
Kirtland Sh	1738'	Gallup Ss	6544'
Fruitland Fm	2449'	Greenhorn	7295'
Pictured Cliffs Ss	3000'	Graneros	7349'
Lewis Shale	3653'	Dakota "Pagate" Ss	7492' 8333'MD
Cliff House Ss	4628'	Dakota "Cubero" Ss	7532' 8374'MD
Menefee Fm	4810'	Dakota "Encinal Canyon"	7582' 8425'MD
		<b>Total Depth</b>	<b>8364' MD</b>

**DRILLING**

The 12-1/4" wellbore will be drilled with a fresh water mud system.  
The 8-3/4" and 7-7/8" wellbore will be drilled with a LSND mud essentially un-weighted. Mud density is expected to range from 8.6ppg to 8.9ppg. Keep fluid loss between 4 and 6. KOP is 500' TVD. An "S" curve will be drilled initially building angle at 2°/100' and then dropping angle to 10° with a drop of 6.72°/100'. Anticipated bottom-hole pressure is 1200 psi (8.38 ppg).

**Blowout Control Specifications:**

A 3000 psi minimum double ram or annulus BOP stack will be used following nipple up of casing head. A 2" nominal, 2000 psi minimum choke manifold will also be used. An upper Kelly Cock valve handle and drill string valve should be available to fit each drill string and be available on the rig floor during drilling operations. **Pressure test BOP to 250 psi for 15 min and 2000 psi for 15 min.**

**Logging Program:**

Open hole logs: 7-7/8" wellbore gamma/induction density logs.  
Mudlogs: From 7000' TVD to total depth  
Surveys: Every 500' for vertical hole section and 250' while directional drilling to TD.

2/20/2009



## CASING, TUBING & CASING EQUIPMENT

String	Start Depth	End Depth	Wellbore	Size	Wt	Grade
Surface	0	400	12-1/4"	9-5/8"	32.3 lb/ft	H-40 ST&C
Production	0	6500	8-3/4"	4-1/2"	11.6 lb/ft	J-55 LT&C
	6500	8364	7-7/8"	4-1/2"	11.6 lb/ft	J-55 LT&C
Tubing	0	8300		2 3/8"	4.7 lb/ft	J-55

### **Casing Equipment:**

**Surface Casing:** Depending on wellbore conditions, a Texas Pattern Guide Shoe on first joint with and insert float valve on top. Run standard bow spring centralizers as follows: every other joint from TD to surface.

**Production Casing:** String will be cemented in multiple (3) stages. Cement float shoe on bottom with float collar on top of 1<sup>st</sup> shoe joint. Starting from bottom, centralizers will be placed on every 4<sup>th</sup> joint. Location of centralizers as follows: 12 below and 12 above hydraulic stage packer collar and 20 centralizers above third stage collar for a total of 44 centralizers.

## WELLHEAD

11" 3000 x 9 5/8" weld/slip on casing head. 11" 3000 x 7 1/16" Christmas Tree.

## CEMENTING

**Surface Casing:** 220 sks Type V with 2.0 % CaCl<sub>2</sub> and ¼ #/sk Flocele (15.6 ppg, 1.18 ft<sup>3</sup>/sk 250 ft<sup>3</sup> of slurry). WOC 12 hours. Pressure test surface casing to 750 psi for 30 min. Test BOP as outlined in the drilling section

**Production Casing:** Before cementing, circulate hole at least 1 ½ hole volumes of mud and reduce funnel viscosity to minimum to aide in hole cleanout.

**First Stage:** Depending on wellbore conditions, cement may consist of 560 sks 50/50 Class G with 0.60 % Halad-9, 0.10 % CFR-3, 5 #/sk Gilsonite, and ¼ #/sk Flocele (13.5 ppg, 1.30 ft<sup>3</sup>/sk). (290 ft<sup>3</sup> of slurry, 20 % excess to circulate to surface). **Stage Collar at 5700'.**

**Second Stage:** Depending on wellbore conditions, cement may consist a lead of 492 sks 65/35 Type V with 2.0% CaCl<sub>2</sub>, 10 #/sk Gilsonite, and ½ #/sk Flocele and a tail of 50 sks Type V with 1.0 % CaCl<sub>2</sub>. (12.3 ppg, 1.93 ft<sup>3</sup>/sk and 15.6 ppg, 1.18 ft<sup>3</sup>/sk respectively). (338 ft<sup>3</sup> of slurry, 60% excess to circulate to surface). **Stage Collar at 3650'.** Circulate 4 hours starting at time of plug down.

**Third Stage:** Depending on wellbore conditions, cement may consist a lead of 957 sks 65/35 Type V with 2.0% CaCl<sub>2</sub>, 10 #/sk Gilsonite, and ½ #/sk Flocele and a tail of 50 sks Type V with 1.0 % CaCl<sub>2</sub>. (12.3 ppg, 1.93 ft<sup>3</sup>/sk and 15.6 ppg, 1.18 ft<sup>3</sup>/sk respectively). (638 ft<sup>3</sup> of slurry, 70% excess to circulate to surface).

### **Set slips with full string weight**

If cement does not circulate, run temperature survey in 8 hrs. to determine TOC.

2/20/2009



**OTHER INFORMATION**

- 1) This well will be cased and the Basin Dakota fracture stimulated.
- 2) If lost circulation is encountered, sufficient LCM will be added to the mud system to maintain well control. The production string may need to be cemented in multiple stages with a slurry design deviated from that listed above.
- 3) If high reservoir pressures or water flows are encountered slurry design may need to be deviated to from those listed above to satisfy wellbore and formation conditions. Anticipated pressure is 1200 psi.
- 4) No abnormal temperatures or pressures are anticipated.
- 5) This gas is dedicated.

WELL DETAILS: Schumacher #12E

Ground Elevation: 6466.00  
RKB Elevation: WELL @ 6480.00ft (Est. Rig RKB)  
Rig Name: Est. Rig RKB

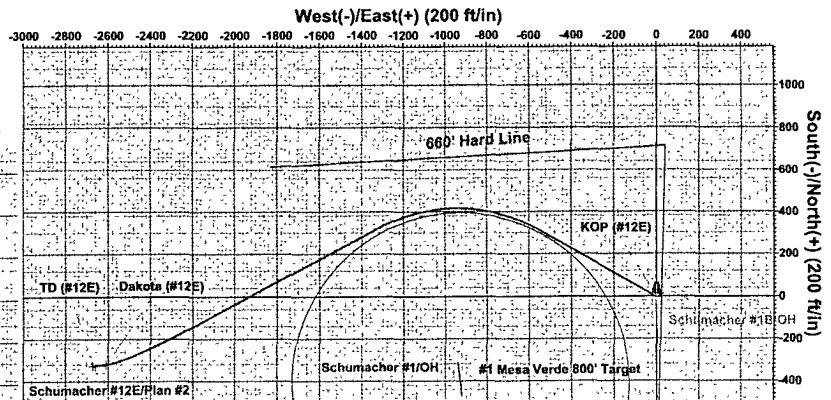
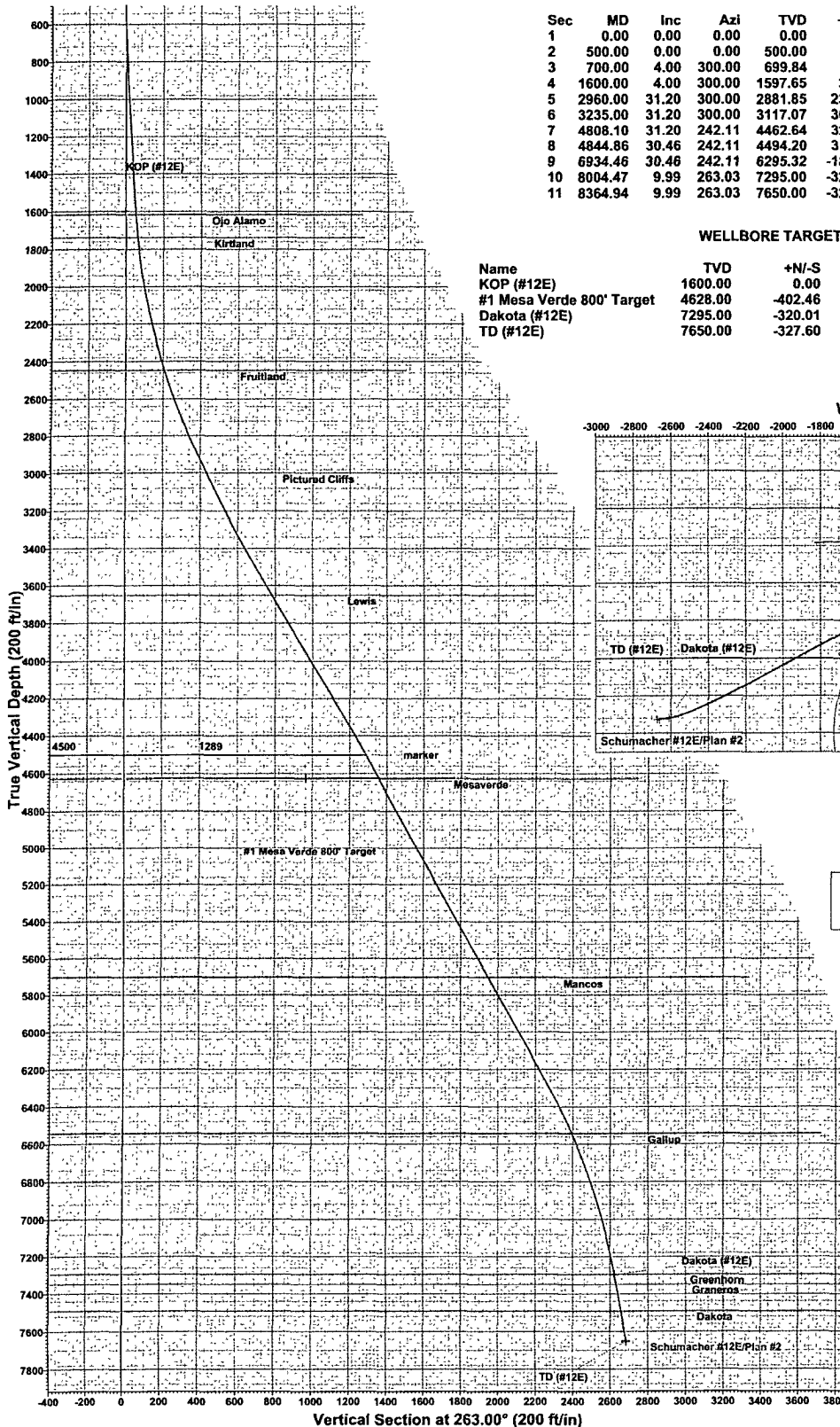
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	2120299.67	1157219.92	36° 48' 55.80003 N	107° 54' 2.59196 W	

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	
3	700.00	4.00	300.00	699.84	3.49	-6.04	2.00	300.00	5.57	
4	1600.00	4.00	300.00	1597.65	34.88	-60.41	0.00	0.00	55.71	
5	2960.00	31.20	300.00	2881.85	238.57	-413.21	2.00	0.00	381.05	
6	3235.00	31.20	300.00	3117.07	309.79	-536.58	0.00	0.00	494.83	
7	4808.10	31.20	242.11	4462.64	324.17	-1317.13	1.91	-90.00	1267.81	
8	4844.86	30.46	242.11	4494.20	315.36	-1333.78	2.00	179.99	1285.41	
9	6934.46	30.46	242.11	6295.32	-180.22	-2270.18	0.00	0.00	2275.22	
10	8004.47	9.99	263.03	7295.00	-320.01	-2606.00	2.00	-170.22	2625.58	Dakota (#12E)
11	8364.94	9.99	263.03	7650.00	-327.60	-2668.10	0.00	0.00	2688.14	TD (#12E)

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
KOP (#12E)	1600.00	0.00	0.00	2120299.67	1157219.92	Point
#1 Mesa Verde 800' Target	4628.00	-402.46	-925.46	2119913.25	1156287.65	Circle (Radius: 800.00)
Dakota (#12E)	7295.00	-320.01	-2606.00	2120024.71	1154608.78	Point
TD (#12E)	7650.00	-327.60	-2668.10	2120018.19	1154546.56	Point



Note: All lease lines and hard lines are estimates only and are subject to customers approval.

PROJECT DETAILS: Central Basin - S17, T30N, R10W  
Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: New Mexico Central Zone

System Datum: Mean Sea Level  
Local North: True



Azimuths to True North  
Magnetic North: 10.23°

Magnetic Field  
Strength: 51016.7snT  
Dip Angle: 63.57°  
Date: 2/13/2009  
Model: IGRF200510

Plan: Plan #2 (Schumacher #12E/OH - S Shape Dakota)  
Created By: John Walker Date: 16:37, February 18 2009