



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED  
OMB No. 1004-0137  
Expires March 31, 2007

5. Lease Designation and Serial No.

NMNM-99735

6. If Indian, Allottee or Tribe Name

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

8. Lease Name and Well No.

Synergy 21-7-8 # 138

9. API Well No.

30-043-21033

10. Field and Pool, or Exploratory

Basin Fruitland Coal

11. Sec., T., R., M., or Blk. and Survey or Area

0 Sec 08, T-21-N, R-07-W

12. County or Parish,  
Sandoval

13. State  
New Mexico

17. Spacing Unit dedicated to this well

320  
322.13 Acres - East Half

20. BLM/BIA Bond No. on file  
NM-2559

23. Estimated duration  
30 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall be attached to this form:

- Well plat certified by a registered surveyor.
- A Drilling Plan
- A Surface Use Plan (If the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
- Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
- Operator certification.
- Such other site specific information and/or plans as may be required by the authorized officer

Size of Hole	Grade, Size of Casing	Weight per Foot	Setting Depth	Quantity of Cement
12-1/4"	8-5/8" K-55	24 #	120'	70 sxs, 99 ft3 - 100% Excess
7-7/8"	5-1/2" K-55	15.5#	850'	211 sxs, 294 ft3 - 100% OH Excess

SEE ATTACHED APD INFORMATION

Latitude: 36.06203 Deg N  
Longitude: 107.59688 Deg W

25. Signature 	Name(Printed/Typed) Thomas E. Mullins	Date 7-6-06
Title Engineering Manager		
Approved by (Signature) 	Name(Printed/Typed) AFM	Date 7/24/06
Title AFM	Office FPD	

Application approval does not warrant or certify the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make 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.

\*(Instructions on reverse)

DRILLING OPERATIONS AUTHORIZED ARE  
SUBJECT TO COMPLIANCE WITH ATTACHED  
"GENERAL REQUIREMENTS".

NMOCD

8

This action is subject to technical and  
procedural review pursuant to 43 CFR 3165.3  
and appeal pursuant to 43 CFR 3165.4

DISTRICT I  
1625 N. French Dr., Hobbs, N.M. 88240

DISTRICT II  
811 South First, Artesia, N.M. 88210

DISTRICT III  
1000 Rio Brazos Rd., Aztec, N.M. 87410

DISTRICT IV  
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals & Natural Resources Department

Form C-102  
Revised August 15, 2000

Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

OIL CONSERVATION DIVISION  
2040 South Pacheco  
Santa Fe, NM 87505

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-043-21033		*Pool Code 71629	*Pool Name FRUITLAND COAL
*Property Code 35856	*Property Name SYNERGY 21-7-8		*Well Number 138
*OGRID No. 163458	*Operator Name SYNERGY OPERATING, L.L.C.		*Elevation 6669'

<sup>10</sup> Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
0	8	21N	7W		1135'	SOUTH	1820'	EAST	SANDOVAL

<sup>11</sup> 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
*Dedicated Acres 320 322.13 Acres - (E/2)					*Joint or Infill		*Consolidation Code		*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

FND 2" BC GLO 1948		N 89°43' W N 89°43'29" W		5261.52' (R) 5262.23' (M)		FND 2" BC GLO 1948	
5342.04' (R) 5339.78' (M)						5337.42' (R) 5339.09' (M)	
N 0°04' W N 0°06'08" W		8		LAT: 36.06203 N LONG: 107.59888 W DATUM: (NAD 1983)		N 0°01' E N 0°01'37" E	
FND 2" BC GLO 1948		N 89°43' W N 89°43'54" W		5246.34' (R) 5250.17' (M)		FND 2" BC GLO 1948	

<sup>17</sup> OPERATOR CERTIFICATION

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

Signature  
Thomas E. Mullins  
Printed Name  
ENGINEERING MANAGER  
Title  
4-26-06  
Date

<sup>18</sup> 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.

APRIL 10, 2006  
Date of Survey  
Signature and Seal of Professional Surveyor:  
DAVID R. RUSSELL  
Certificate Number 10201



## **Synergy Operating LLC**

### **Operations Plan**

**Well Name:** Synergy 21-7-8 # 138

**Location:** Unit O - 1135' FSL, 1820' FEL, Sec. 8, T-21-N, R-7-W, Sandoval Co. NM  
Latitude 36.06203° N, Longitude 107.59688° W (NAD 83)

**Field:** Basin Fruitland Coal

**Elevation:** 6669' GL

### **GEOLOGIC PROGRAM**

<b>Formations:</b>	<b>Tops/Depth</b>	<b>Fluids</b>
Base Ojo/Top Kirtland	167'	None
Fruitland	321'	Natural gas & produced water
Lower Fruitland Coal	619'	Natural gas & produced water
Pictured Cliffs	649'	Natural gas & produced water
TOTAL Depth	850'	

#### **Logging Program:**

- A) Open Hole: Density/Caliper & Gamma Ray: TD to Surface Csg Shoe  
B) Cased Hole: GR-CCL

#### **Mudlogs, Cores, DST's:**

No mudlogs, coring or drill-stem testing (DST's) are scheduled.

#### **Anticipated Downhole Conditions:**

It is not anticipated that any abnormal temperatures, abnormal pressures or hydrogen sulfide gas will be encountered. The maximum anticipated formation pressures are expected to be less than 500-PSIG. A minimum of MMS Class 1 BOP equipment will be used.

### **DRILLING PROGRAM**

**Contractor:** A local rotary drilling company is yet to be determined.

**Mud Program:** Freshwater based mud system will be utilized. Water sourced from commercial suppliers.

Depth	Type	Viscosity	#s/Gal
0-120'	Spud	40-50	8.4-8.9
120'-TD	Low Solids, Non-dispersed	30-60	8.4-9.5*

\* Barite will be used as a weighting material if needed

## Pressure Control / Blow Out Preventers (BOP's):

All BOP systems will be in accordance with MMS Onshore Oil & gas Order No2. Until the drilling contract has been let, the exact make, model and pressure rating of BOP's is unknown. A typical double gate BOP with a rotating head is shown in the attached Exhibit #1. A typical Choke & Kill manifold is also shown in the attached Exhibit #1.

The minimum requirements necessary to drill this well comply with a Class 1 Well Control Equipment rated to 1000 psi operating conditions.

An upper kelly cock valve with handle and drill string safety valves for each size of drill pipe will be available on the rig floor.

## BOP Testing:

Surface – TD: An 11" 1000#, 2000#, or 3000# double gate BOP Stack & choke manifold will be utilized. Prior to drilling out the surface casing, the ~~rams~~ <sup>BOPs</sup> will be tested to 500#.

Pipe rams will be hydraulically actuated at least once a day. The blind rams will be function tested on each pipe trip. All ram function testing and BOP pressure testing will be recorded on the daily IADC drilling logs.

## Casing & Tubing Program:

All casing shall be new and constructed to API standards.

Hole Size	OD	Weight	Grade	GL Set Depth	Clearance Hole/Collar
12-1/4"	8.625"	24#/ft	J-55	0' – 120'	1.3125"
7-7/8"	5.500"	15.5#/ft	J-55	0' – TD(850'+/-)	0.9125"
2-3/8"	2.375"	4.7#/ft	J-55	Unknown	

## Float Equipment & Centralizers:

8-5/8" Surface Casing: Cement Guide Shoe, 1-Jt 8-5/8" casing as shoe joint, float collar and 8-5/8" casing to surface. A centralizer will be run 10' above the shoe, secured with a stop ring, around each of the collars of the planned three (3) casing joints. Surface casing will be run to a minimum depth of 120' to ensure protection of surface waters. No wiper plug will be run, cement will be just be displaced to within 20' of the shoe.

5-1/2" Production Casing: Cement guide shoe w/ auto-fill, 1-Jt 5-1/2" casing as shoe joint, float collar, and 5-1/2" casing to surface. A centralizers will be run on every other joint of casing. Additional centralizers will be deployed every other joint from the fifth most bottom joint to surface. Estimated total of twenty (20) centralizers. No turbolizers are planned to be run, as there are no indications of any problems to be encountered with the cementing of such shallow wells.

All strings of casing and all cement will be circulated to the surface and topped off if necessary.

## Wellhead Equipment:

A 8-5/8" x 5-1/2" 1000# or 1500# wellhead will be screwed on to the top joint of the 8-5/8" surface casing, w/ 3" line pipe outlets.

### **Cementing Program:**

8-5/8" Surface Casing: Pump 70-sxs (99-ft<sup>3</sup>) Type III Cement w/ 3% CaCl<sub>2</sub> + 1/4-#/sx Celloflake. Yield = 1.42 ft<sup>3</sup>/sx, Slurry Weight = 14.5 PPG. Cement volume is 100% of annular excess to ensure circulation to surface. Wait on Cement (WOC) for 8-Hours. Pressure test surface casing to 750# for 15-Minutes.

5-1/2" Production Casing: Pump 211-sxs (294-ft<sup>3</sup>) Type III Cement w/ 1% CaCl<sub>2</sub> + 1/4-#/sx Celloflake + 0.2% FL-52 + 2-#/sx Pheno-Seal. Yield = 1.39 ft<sup>3</sup>/sx, Slurry Weight = 14.6 PPG. Total slurry volume is 294 ft<sup>3</sup>.

The projected annular hole volume from 850' to surface is: 147 ft<sup>3</sup>. Cement volume is 100% excess of annular openhole volume to ensure circulation to surface. Cement will be brought to surface on all strings of casing.

### **Estimated Drilling Time:**

Spud date will occur after the APD has been approved, the location built and a drilling contractor selected. Once drilling operations commence, it is anticipated that the drilling phase should be completed within three (3) days.

### **Estimated Completion Time:**

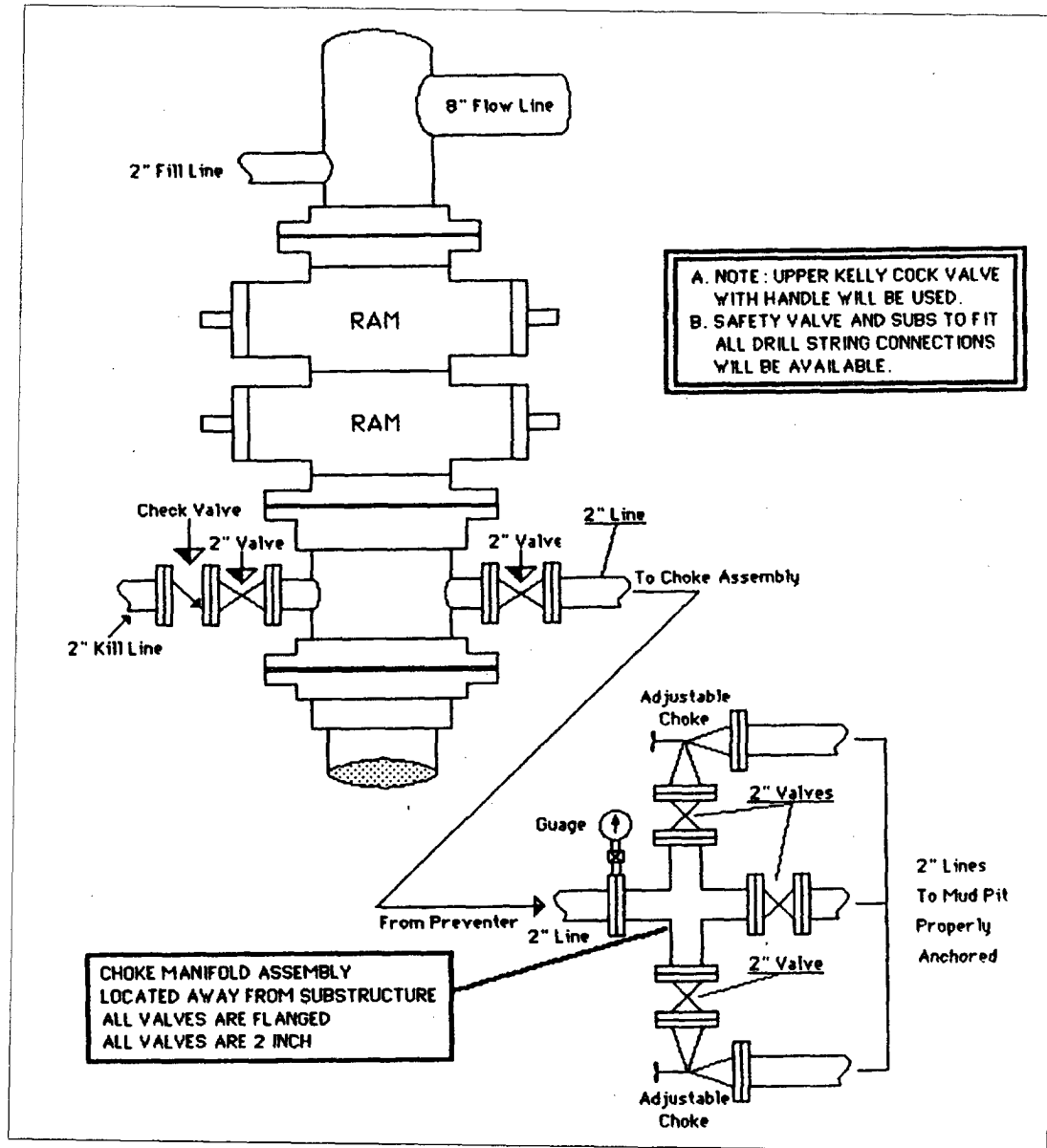
Rig completion activities are estimated to take approximately five (5) days. Surface facilities anticipated will include a rod pumping unit, a small separator, and one four hundred (400) bbl water production tank. No oil production is anticipated from this well. A gas meter will be utilized temporarily for 30 days to measure the anticipated gas production.

Synergy will be installing a 4" Gas Sales Line and a 3" water gathering line to gather all produced waters to a central facility should the well be deemed commercial.

### **Reserve Pit Construction/Closure:**

The planned reserve pit is located on the attached plat. The pit dimensions are projected to be 65 feet by 15 feet. The pit will be lined with an approved lining material, a minimum of a 12 mils in thickness. The pit will be constructed and closed per the November 1, 2004 NMOC pit guideline information. A form C-144 will be prepared and submitted for the reserve pit in conjunction with this APD submittal.

**Synergy Operating, LLC**  
 San Juan Basin  
 1M BOPE - Class 1 BOPE  
 Minimum of 1000 psi Working Pressure



A BOP Stack consisting of either a manual two(2) ram preventer, (double or 2 singles) or a single Hydraulic annular preventer with a minimum of 1000 psi working pressure. The upper ram cavity Shall contain pipe rams to fit the drill pipe in use. The lower cavity shall contain blind rams.

The choke and kill manifold shall be minimum 2" in diameter and rated to minimum of 1000#.