Form 3160-3
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

2005 SEP 23 PM 1 07

070 FARMINGTON NM

RECEIVED

5. Lease Designation and Serial No.: NMNM-03877

6. If Indian, Allottee or Tribe Name:

1a. Type of Work: ☒ DRILL ☐ REENTER

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

1b. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.: Duff 29-11-8 #104

2. Name of Operator: Synergy Operating, LLC — NM OGRID # 163458

9. API Well No.: 30-045-33350

3a. Address: PO Box 5513, Farmington, NM 87499

3b. Phone Number: (505) 325-5449

10. Field and Pool, or Exploratory: Basin Fruitland Coal

4. Location of Well (Footage, Sec, T. R., M, or Survey Description)
At surface: Unit Letter D, 955' FNL, 885' FWL, Sec 8, T29N-R11W
At proposed prod. Zone: Same

11. Sec., T., R., M., or Blk. and Survey or Area: D Sec 8, T-29-N, R-11-W

14. Distance in miles and direction from nearest town or post office*: 3 miles northwest of Bloomfield, NM

12. County or Parish: San Juan

13. State: New Mexico

15. Distance from proposed* location to nearest propety or lease line, ft. (Also to nearest drlg. Unit line, if any): 885' from West Line

16. No of Acres in lease: _____ Acres

17. Spacing Unit dedicated to this well: 320-Acres (W/2)

18. Distance from proposed* location to nearest propety or lease line, ft.: 955' from North Line

19. Proposed Depth: 2025'

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

21. Elevation (Show whether DF, KDB, RT, GL, etc.): 5763' Ground Level

22. Approximate date work will start*: November 15, 2005

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:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office.
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. 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" J-55	24 #	220'	150-sxs, 213 ft^3 - 100% Excess
7-7/8"	5-1/2" J-55	15.5#	2025'	290-sxs, 548 ft^3 - 100% OH Excess

SEE ATTACHED APD INFORMATION

Latitude: 36 Deg, 44 Min, 41.5 Sec N
Longitude: 108 Deg, 01 Min, 15.4 Sec W

25. Signature: Glen O. Papp — Name (Printed/Typed): Glen O. Papp — Date: 9-23-05

Title: Operations Manager

Approved by (Signature): Matthews — Name (Printed/Typed): — Date: 11/2/05

Title: AFM — Office: FFO

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 knowlingly and willfully to make to any department or agency of the United States any false, ficticious, or fraudulent statements or representations as to any matter within its jurisdiction.

*(Instructions on reverse)

NOV 2005
RECEIVED
OIL CONS. DIV.
DIST. 3

NMOCD

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

DISTRICT II
1301 W. Grand Ave., Artesia, N.M. 88210

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

DISTRICT IV
1220 South St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department

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

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070 FARMINGTON NM

Form C-102
Revised June 10, 2003
Submit to Appropriate District Office
State Lease – 4 Copies
Fee Lease – 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-045-33350	71629	BASIN FRUITLAND COAL

[4] Property Code	[5] Property Name	[6] Well Number
35220	DUFF 29-11-8	104

[7] OGRID No.	[8] Operator Name	[9] Elevation
163458	SYNERGY OPERATING LLC	5763

[10] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	8	29-N	11-W		955	NORTH	885	WEST	SAN JUAN

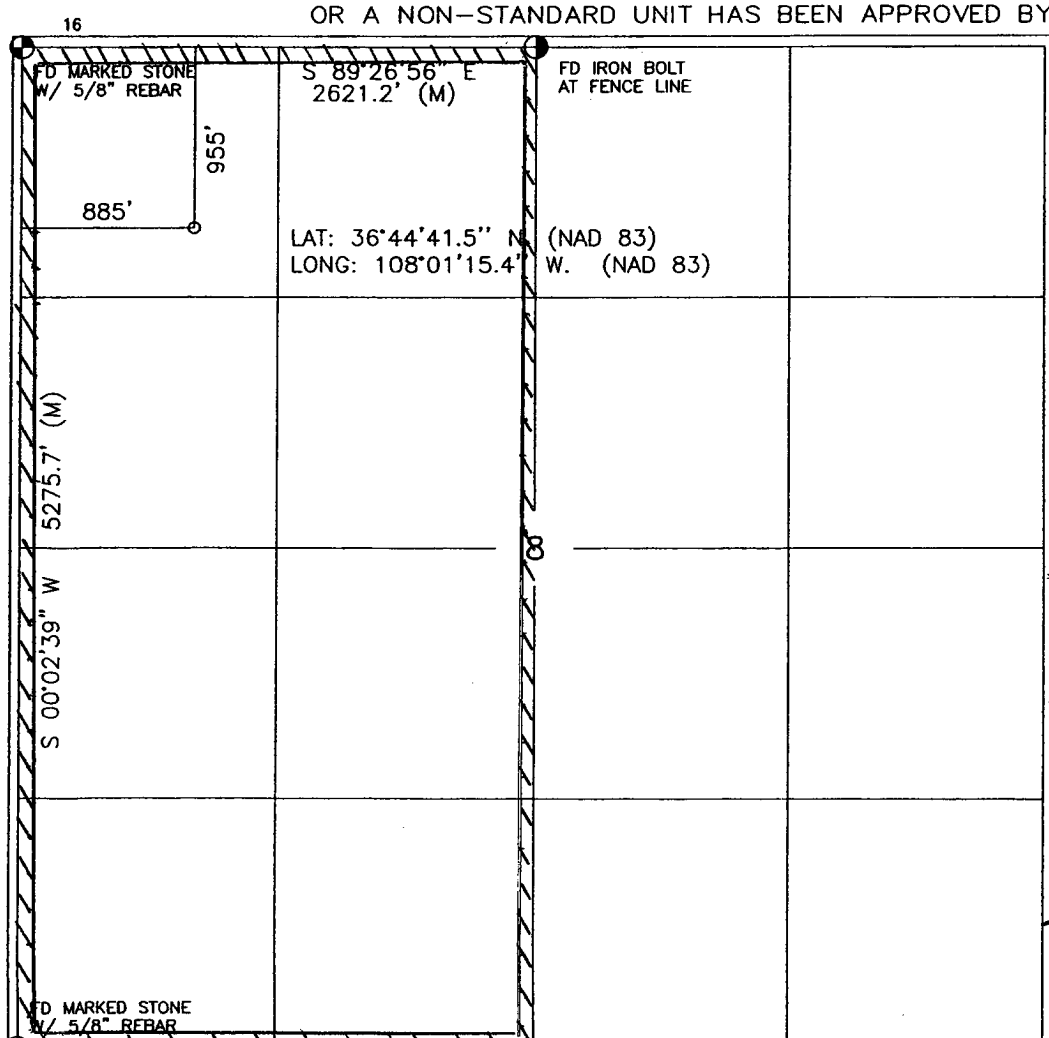
[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
W/2			

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

16



17 OPERATOR CERTIFICATION

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

Signature

Glen O. Papp

Printed Name

Operations Manager

Title

6-7-05

Date

18 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.

MAY 4, 2005

Date of Survey

Signature and Seal of Professional Surveyor:

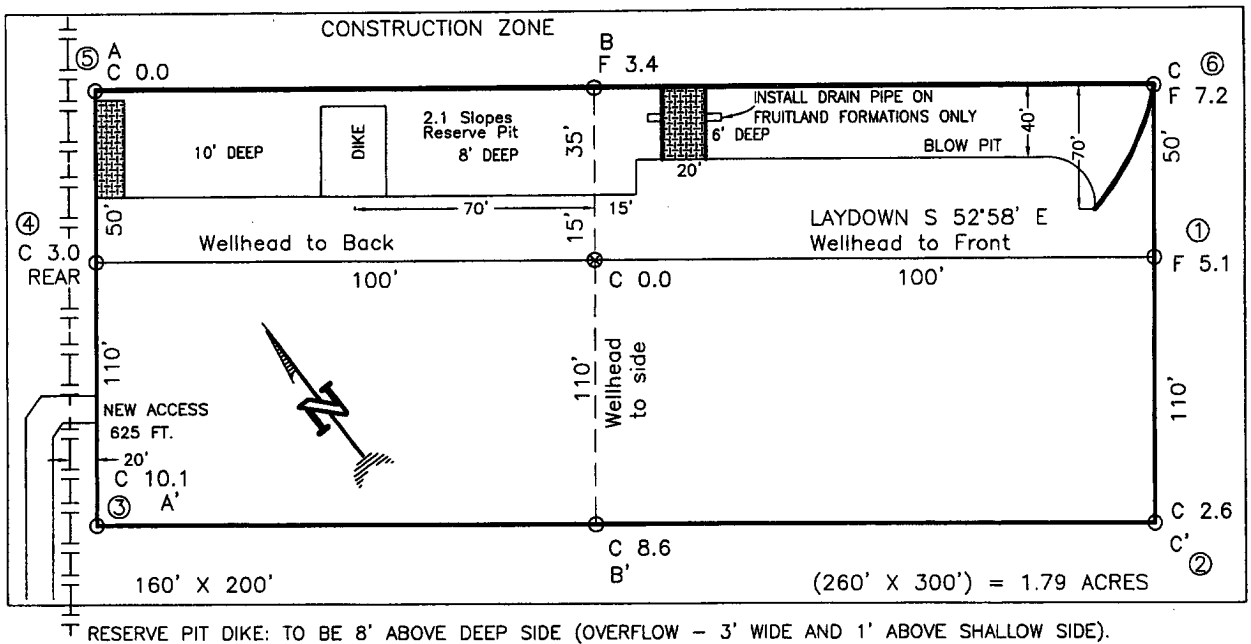
JOHN A. VUKONICH
NEW MEXICO
14831
REGISTERED PROFESSIONAL SURVEYOR

14831

Certificate Number

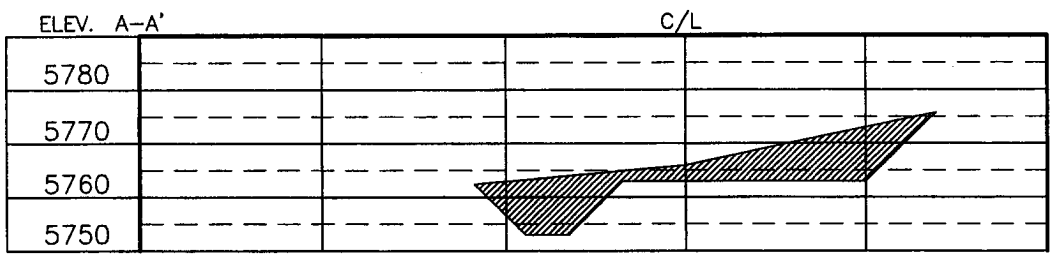
SYNERGY OPERATING LLC
DUFF 29-11-8 No. 104, 955' FNL 885' FWL
SECTION 8, T29N, R11W, N.M.P.M., SAN JUAN COUNTY, N. M.
GROUND ELEVATION: 5763', DATE: MAY 4, 2005

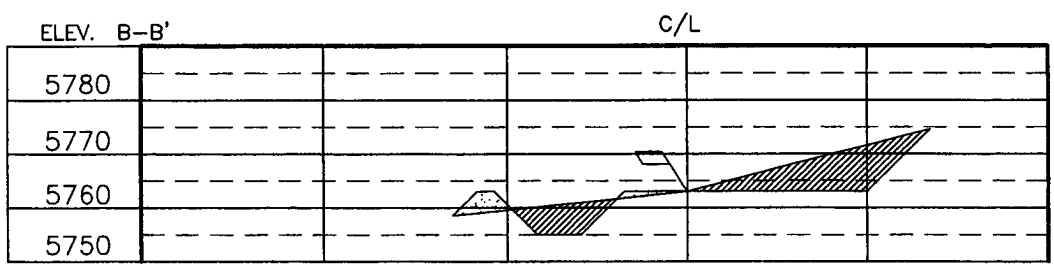
LAT. = 36°44'41.5" N.
LONG. = 108°01'15.4" W
NAD 83

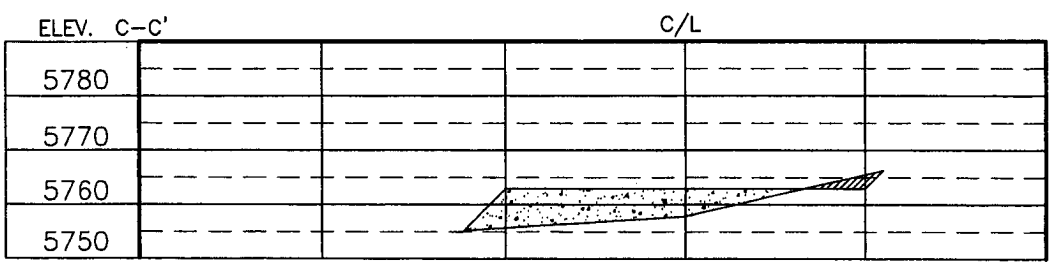


RESERVE PIT DIKE: TO BE 8' ABOVE DEEP SIDE (OVERFLOW - 3' WIDE AND 1' ABOVE SHALLOW SIDE).
BLOW PIT: OVERFLOW PIPE HALFWAY BETWEEN TOP AND BOTTOM AND TO EXTEND OVER PLASTIC LINER AND INTO BLOW PIT.

NOTE: DAGGETT ENTERPRISES, INC. IS NOT LIABLE FOR UNDERGROUND UTILITIES OR PIPELINES. NEW MEXICO ONE CALL TO BE NOTIFIED 48 HOURS PRIOR TO EXCAVATION OR CONSTRUCTION.







NOTE: CONTRACTOR SHOULD CALL ONE-CALL FOR LOCATION OF ANY MARKED OR UNMARKED BURIED PIPELINES OR CABLES ON WELL PAD AND OR ACCESS ROAD AT LEAST TWO (2) WORKING DAYS PRIOR TO CONSTRUCTION.

REVISION: CORRECT PAD SIZE / ACRES
DATE: 06/21/05
REVISED BY: B.L.
DRAWN BY: B.L.
DATE: 05/16/05
CADFILE: SYOP007CFB
ROW#: SYOP007

Daggett Enterprises, Inc.
Surveying and Oil Field Services
P. O. Box 15068 • Farmington, NM 87401
Phone (505) 326-1772 • Fax (505) 326-6019
NEW MEXICO P.L.S. No. 14831

Synergy Operating LLC
Operations Plan

Well Name: Duff 29-11-8 #104

Location: Unit D, 995' FNL, 885' FWL, Sec. 8, T-29-N, R-11-W, San Juan Co. NM
Latitude 36° 44' 41.5" N, Longitude 108° 01' 15.4" W

Field: Basin Fruitland Coal

Elevation: 5763' GL

GEOLOGIC PROGRAM

Formations:	Tops/Depth	Fluids
Nacimiento	Surface	None
Ojo Alamo	626'	Possible fresh water aquifer
Kirtland	773'	None
Fruitland	1443'	Natural gas & produced water
Pictured Cliffs	1923'	Natural gas & produced water
TOTAL Depth	2025'	

Logging Program:
A) Open Hole: Density + Neutron: TD to Surface Csg Shoe
B) Cased Hole: GR-CCL-CBL

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 1000-PSIG.

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	PPG
0-220'	Spud	40-50	8.4-8.9
220'-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 No 2. 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.

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:
220' (Surface Csg Shoe) – TD: An 11" 2000# or 3000# double gate BOP Stack & choke manifold will be utilized. All BOP systems will be tested in accordance with MMS Onshore Oil & gas Order No 2. A test plug will be used to test the BOPE, and the resultant pressures will be recorded using a test pump, calibrated test gauges and a calibrated chart recorder. A low pressure test of 250 PSIG will be held for 5-10 minutes, and a high pressure test will be tested to 1000 PSIG for 10-minutes. Prior to drilling out the surface casing, the 8-5/8" 24# surface casing will be tested to 1000 PSIG for 30-minutes.

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' – 220'	1.3125"
7-7/8"	5.500"	15.5#/ft	J-55	0' – TD(2025'+/-)	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 and 8-5/8" casing to surface. Centralizers will be on the bottom three joints, the bottom most centralizer will be run 10' above the shoe, secured with a stop ring. The other two centralizers will be secured around the collars. Surface casing will be run to a minimum depth of 220' to ensure protection of surface waters.

5-1/2" Production Casing: A cement nose guide shoe, 1-Jt 5-1/2" casing as shoe joint, float collar w/ auto-fill, and 5-1/2" casing to surface. A centralizer will be run 10' above the shoe, secured with a stop ring, and two more centralizers will be applied around the collars of the bottom most casing joints. Additional centralizers will be deployed every sixth joint from the third most bottom joint to surface. Turbolizers will be used around the first casing collar below the base of the Ojo Alamo and a second on the first casing collar above the base of the Ojo Alamo. The Ojo Alamo will be covered with cement.

Wellhead Equipment:

A 8-5/8" x 5-1/2" 2000# bradenhead will be screwed on to the top joint of the 8-5/8" surface casing.

Cementing Program:

8-5/8" Surface Casing: Pump 150-sxs (213-ft^3) Type III Cement w/ 3% $CaCl_2$ + ¼-#/sx Celloflake. Yield = 1.42 ft^3/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 1000# for 30-Minutes.

5-1/2" Production Casing:

Lead Slurry: Pump 190-sxs (409-ft^3) Premium Lite FM Cement w/ 3% $CaCl_2$ + ¼-#/sx Celloflake + 0.4% FL-52 + 8% Bentonite + 0.4% Sodium Metasilicate + 3-#/sx Pheno-Seal. Yield = 2.15 ft^3/sx, Slurry Weight = 12.1 PPG.
Tail Slurry: Pump 100-sxs (139-ft^3) Type III Cement w/ 1% $CaCl_2$ + ¼-#/sx Celloflake + 0.2% FL-52 + 2-#/sx Pheno-Seal. Yield = 1.39 ft^3/sx, Slurry Weight = 14.6 PPG. Total slurry volume is 547.5-ft^3.

The projected annular open hole volume from 2025' to surface is: 355.1-ft^3. Cement volume is 100% excess of annular openhole volume for the lead cement slurry, to ensure circulation to surface. The job is designed to circulate the cement to surface.

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) to five (5) days.

Estimated Completion Time:

Rig completion activities are estimated to take approximately five (5) days. Surface facilities anticipated will include a rod pumping unit, separator, and one four hundred (400) bbl water production tank and a well-site compressor. No oil production is anticipated from this well.

Reserve Pit Construction/Closure:

The attached plat depicts the planned reserve pit and the proposed dimensions. 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 NMOCD pit guideline information. A form C-144 will be prepared and submitted for the reserve pit in conjunction with this APD submittal.

Exhibit #1

Well Control Equipment Schematic for 2M Service

Attachment to Drilling Technical Program

Typical BOP setup

ocation: San Juan Basin, New Mexcio