Form 3160-3
(August 1999)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0136
Expires November 30, 2000

JUL 2003
RECEIVED
OIL CONS. DIV.
DIST. 3

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Designation and Serial No.: NMNM-105533
6. If Indian, Allottee or Tribe Name:
7. Unit or CA, Agreement, Name and No.: 28893

1a. Type of Work: [X] DRILL [ ] REENTER

1b. Type of Well: [X] Oil Well [ ] Gas Well [ ] Other [X] Single Zone [ ] Multiple Zone

8. Lease Name and Well No.: Bois d' Arc Divide 22 # 2

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

9. API Well No.: 30-043-20982

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

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

10. Field and Pool, or Exploratory: WC 21N5W 22 Mesaverde (Oil)

4. Location of Well (Footage, Sec, T. R., M, or Survey Description)
At surface: Unit Letter P, 690' FSL, 615' FEL, Sec 22, T21N-R05W
At proposed prod. Zone: Same

11. Sec., T., R., M., or Blk. and Survey or Area: P Sec 22, T-21-N, R-05-W

14. Distance in miles and direction from nearest town or post office*: 10 Miles West of Johnsons Trading Post

12. County or Parish: Sandoval

13. State: New Mexico

15. Distance from proposed* location to nearest propety or lease line, ft. (Also to nearest drlg. Unit line, if any): 690 Feet from South Line

16. No of Acres in lease: 1280 Acres

17. Spacing Unit dedicated to this well: 40 Acres SE/4 SE/4

18. Distance from proposed* location to nearest propety or lease line, ft.: 615 Feet from East Line

19. Proposed Depth: 4050'

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

21. Elevation (Show whether DF, KDB, RT, GL, etc.): 7238' Ground Level

22. Approximate date work will start*: June 30th 2003

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" K-55	24 #	170'	100 sxs, 139 ft3 - 100% Excess
7-7/8"	5-1/2" K-55	15.5#	4050'	457 sxs, 1110 ft3 - 60% Excess

SEE ATTACHED APD INFORMATION

Latitude: 36 Deg, 01 Min, 46 Sec N
Longitude: 107 Deg, 20 Min, 38 Sec W

25. Signature: T. E. Mullins — Name(Printed/Typed): Thomas E. Mullins — Date: 6-3-2003

Title: Engineering Manager

Approved by (Signature): /s/ David R. Sitzler — Name(Printed/Typed): — Date: JUL 14 2003

Title: Assistant Field Manager — Office:

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)

Attached

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

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

Form C-102
Revised August 15, 2000

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
30-043-20982	97283	WC 21N5W22; Mesaverde (Oil)

[4] Property Code	[5] Property Name	[6] Well Number
28893	BOIS d'ARC DIVIDE 22	2

[7] OGRID No.	[8] Operator Name	[9] Elevation
163458	SYNERGY OPERATING LLC	7238'

[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
P	22	21-N	5-W		690'	SOUTH	615'	EAST	SANDOVAL

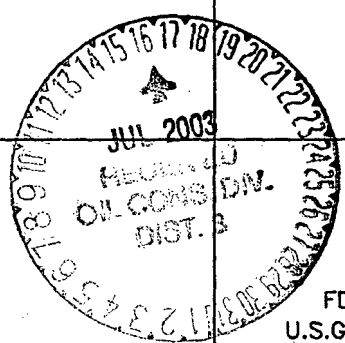
[11] Bottom Hole Location If Different From Surface

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.
40			

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



FD 2 1/2"
U.S.G.L.O. BC
1925

22

LAT. 36°01'46" N (NAD 83)
LONG. 107°20'38" W

N 00-07-03 W
2625.60' (M)

623'

693'

615'

FD 2 1/2"
U.S.G.L.O. BC
1925

FD 2 1/2"
U.S.G.L.O. BC
1925

N 89-36-26 W
2616.00' (M)

690'

[17] 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

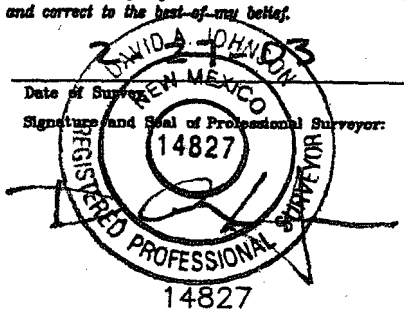
3-3-2003
Date

[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.

2-21-03
Date of Survey

Signature and Seal of Professional Surveyor:



14827
Certificate Number

SYNERGY OPERATING, LLC

WELL NAME: Bois d' Arc Divide 22 # 2

DRILLING PROGNOSIS

1. Location of Proposed Well: Unit P, 690' FSL & 615' FEL
   Section 22, T21N, R05W
   Sandoval County, New Mexico

2. Unprepared Ground Elevation: @ 7238 '.

3. The geological name of the surface formation is Nacimiento .

4. Type of drilling tools will be Rotary .

5. Proposed drilling depth is 4050'.

6. The estimated tops of important geologic markers are as follows (reference GL):

Nacimiento -		Chacra -	'
Ojo Alamo -	1050'	La Ventana (Cliffhouse) -	2184'
Kirtland -	'	Meneffe -	2767'
Fruitland -	1176'	Pt. Lookout -	3742'
Pictured Cliffs -	1438'	T. D. -	4050'
Lewis Shale -	1517'		

7. The estimated depths at which anticipated water, oil, gas or other mineral bearing formations are expected to be encountered are as follows:

Oil and Gas Zones		Water Zones		Coal Zones	
Meneffe	2767'	Ojo Alamo	1050'	Fruitland	1176'
		Pictured Cliffs	1438'		
Pt. Lookout	3742'	Cliffhouse	2184'	Meneffe	2767'

8. The proposed casing program is as follows:

   Surface String: 8-5/8", 24#, J/K-55 @ 170' *
   Production String: 5-1/2", 15.5# J/K-55 @ 4050' (see details below)

   * The surface casing will be set at a minimum of 170' KB, but could be set deeper if required to maintain hole stablity.

9. Cement Program:

Surface String: 100 sacks of Class "B" cement or equivlanet (1.39 ft3/sx yield, 14.6 ppg) with 3 percent CaCl in mix water and ¼# sack celloflake. Volume is based upon 100% excess. A wooden wiper plug will be displaced within 20' of the shoe. This casing string will be cemented to surface.

Production String: **Lead Cement:** 381 sacks Type III Cement + 3% bwow Potassium Chloride + 0.25 lbs/sack Cello Flake+ 4 lbs/sack Pheno Seal + 8% bwoc Bentonite +0.3% bwoc Sodium Metasilicate + 126.2% Fresh Water mixed at 12.2 ppg (2.50 cf/sx yield = 952 cf)

Tail Cement: 76 sacks Premium Lite High Strength FM + 5% bwow Sodium Chloride + 0.25 lbs/sack CelloFlake + 0.3% bwoc CD-32 + 0.7% bwoc FL-52 +4 lbs/sack Pheno Seal + 107.7% Fresh Water mixed at 12.5 ppg (2.09 cf/sx yield = 158 ft3)

A Guide Shoe, and autofill float collar will be run 20' off of bottom. A marker jt will be run on the 5-1/2" casing at approximately 3400'.

Note: Synergy continues to work to improve the cement slurries on our wells. Any modifications to cement will be of equivalent total volume, but would have better mechanical properties than the cement we are currently using.

Centralizer Program:

Surface: Total four (4) minimum - 10' above shoe and top of 2nd, 3rd, & 4th jts. One Centralizer will be run per joint.

Production: Total seven (7) - 20' above shoe and top of 1st, 2nd, 4th, 6th, 8th, & 10th jts. a cement basket will be run above the Pictured Cliffs, with turbolators above and below it.

Turbulators: Total Four (4) - one at 1st jt below Pictured Cliffs and 1 jt above this turbolator. Also one 1st jt below Ojo Alamo and 1 jt above this turbolator.

10. A 3000# Blow-Out Preventer System will be used for this well, consisting of the following items:

2 Hydraulic Rams (Pipe & Blind) or Hydraulic and Annular with Blind Ram on Bottom.
1- Kill Line (2-inch minimum)
1- Kill Line Valve (2-inch minimum)
1 – Choke Line Valve
2 chokes (refer to diagram in Attachment) on Choke Manifold
Upper kelly cock valve in open position with handle available

Safety Valve (in open position) and subs to fit all drill strings in use (with handle available)
Pressure gauged choke manifold
2 inch minimum choke line
Fill-up line above the uppermost preventer

The BOP equipment will be pressure and function tested according to Onshore Order # 2 – III.A-1 with a 30% safety factor. Please see that attached diagram.

11. Drilling Mud Prognosis:

Depth	Type	Wt./ppg.	Vis.,	Fluid Loss	pH
0'-170'	FW gel/lime spud mud	8.4 – 8.7	30-50	NC	10
170'- TD	Low solids non-dispersed	8.4 - 9.0	30-40	<20 cc's	9.5-10

Sufficient material needed to maintain mud properties, control loss circulation, and absorbent materials to contain any unforeseen pressure control situations will be maintained at the wellsite during all drilling operations. A mud logging unit w/ gas detector as well as a mud pit level indicator will be used out from under surface to TD.

12. The testing, logging, and coring programs are as follows:

D.S.T.s or cores: None Planned.

Logs: Mud logger out from under Surface to TD, Openhole Logs to include SP, Induction, Density, & Neutron. Additional logs may be run.

13. No Anticipated or abnormal pressures or temperatures should be encountered. No hydrogen sulfide is present or anticipated.

Estimated Bottomhole pressures: Pt. Lookout is - +/- 1700 psi

Surface casing and BOPE equipment will be tested to 1500 psi prior to drilling of the shoe. 3000# BOPE equipment will be utilized during production hole drilling operations.

14. The anticipated starting date is sometime in late June 2003 with duration of drilling operations for approximately 6 days thereafter. Completion Operations should take 10 days. Production Equipment will be installed and the well production tested based upon completion results.