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Farmington Field Office

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

5 Lease Designation and Serial No: NM-99735

6 If Indian, Allottee or Tribe Name:

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

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

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

8. Lease Name and Well No.: Caleb Mesa SWD #1

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

9. API Well No.: 30-043-21055

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

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

10. Field and Pool, or Exploratory: Morrison; Bluff Entrada SWD (96162)

4. Location of Well (Footage, Sec, T R, M, or Survey Description)
At surface: Unit Letter J, 2080' FSL, 1750' FEL, Sec 07, T21N-R07W
At proposed prod Zone: Same

11. Sec., T, R., M, or Blk. and Survey or Area: J Sec 7, T-21-N, R-07-W

14. Distance in miles and direction from nearest town or post office*: 11 miles South of Lybrook, NM

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): 2080' to the South

16. No of Acres in lease: 1921.60-Acres

17. Spacing Unit dedicated to this well: NA ~~SE/4 (160-acres)~~

18. Distance from proposed* location to nearest propety or lease line, ft: 3200' to the West

19 Proposed Depth: 6250'

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

21. Elevation (Show whether DF, KDB, RT, GL, etc.): 6617' Ground Level

22. Approximate date work will start*: March 1, 2008

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 #	340'	260-sxs, 307 ft3 - 100% Excess
7-7/8"	5-1/2" J-55	15.5#	6250'	805-sxs, 1569 ft3 - 50/20% OH Excess

SEE ATTACHED APD INFORMATION

Latitude: 36.06473-Deg North
Longitude: 107.61445-Deg West

25. Signature: Glen O. Papp — Name (Printed/Typed): Glen O. Papp — Date: 10-10-07

Title: Operations Manager

Approved by (Signature): [signature] — Name (Printed/Typed): — Date: 12/17/07

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

NOTIFY AZTEC OCD 24 HRS. PRIOR TO CASING & CEMENT

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, ficticious, or fraudulent statements or representations as to any matter within its jurisdiction

*(Instructions on reverse)

BLM'S APPROVAL OR ACCEPTANCE OF THIS ACTION DOES NOT RELIEVE THE LESSEE AND OPERATOR FROM OBTAINING ANY OTHER AUTHORIZATION REQUIRED FOR OPERATIONS ON FEDERAL AND INDIAN LANDS

An SWD permit must be approved prior to commencement of injection.

Obtain a pit permit from NMOCD prior to constructing location

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

DEC 20 2007 NMOCD

AV

DRILL
SUBJE
"GENE

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

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

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

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

State of New Mexico
rgy, Minerals & Natural Resources Departme

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

RECEIVED
OCT 12 2007
Bureau of Land Management
Farmington Field Office

Form C-102
Revised October 12, 2005

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
30-043-21055	96162	SWD Morrison Bluff Entrada

[4] Property Code	[5] Property Name	[6] Well Number
36899	CALEB MESA SWD	1

[7] OGRID No.	[8] Operator Name	[9] Elevation
163458	SYNERGY OPERATING, L.L.C.	6617'

[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
J	7	21N	7W		2080'	SOUTH	1750'	EAST	SANDOVAL

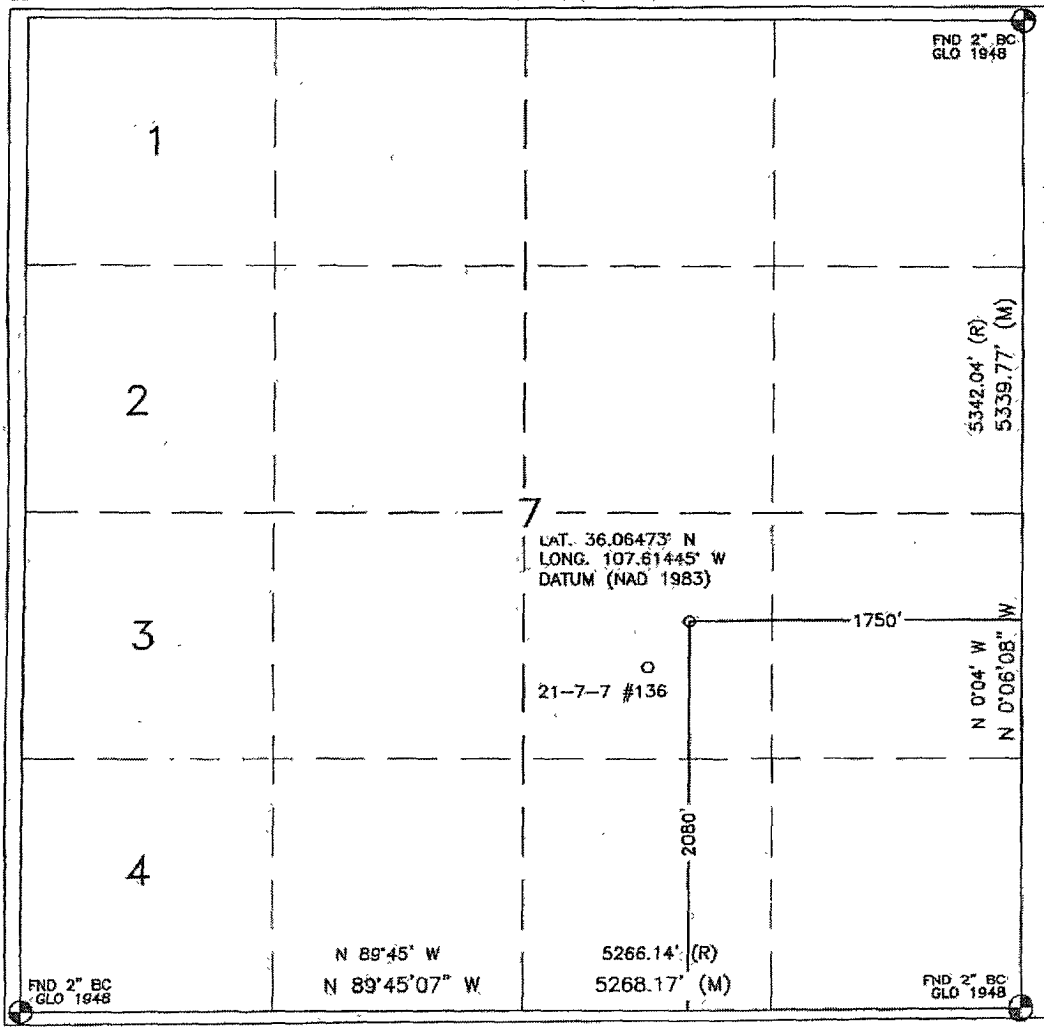
[11] Bottom Hole Location If Different From Surface

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.

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, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner or a compulsory pooling order heretofore entered by the division.

Signature — Date: 1-16-07

Thomas E. Mullins
Printed Name

[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.

JANUARY 8, 2007
Date of Survey

Signature and Seal of Professional Surveyor:

David Russell

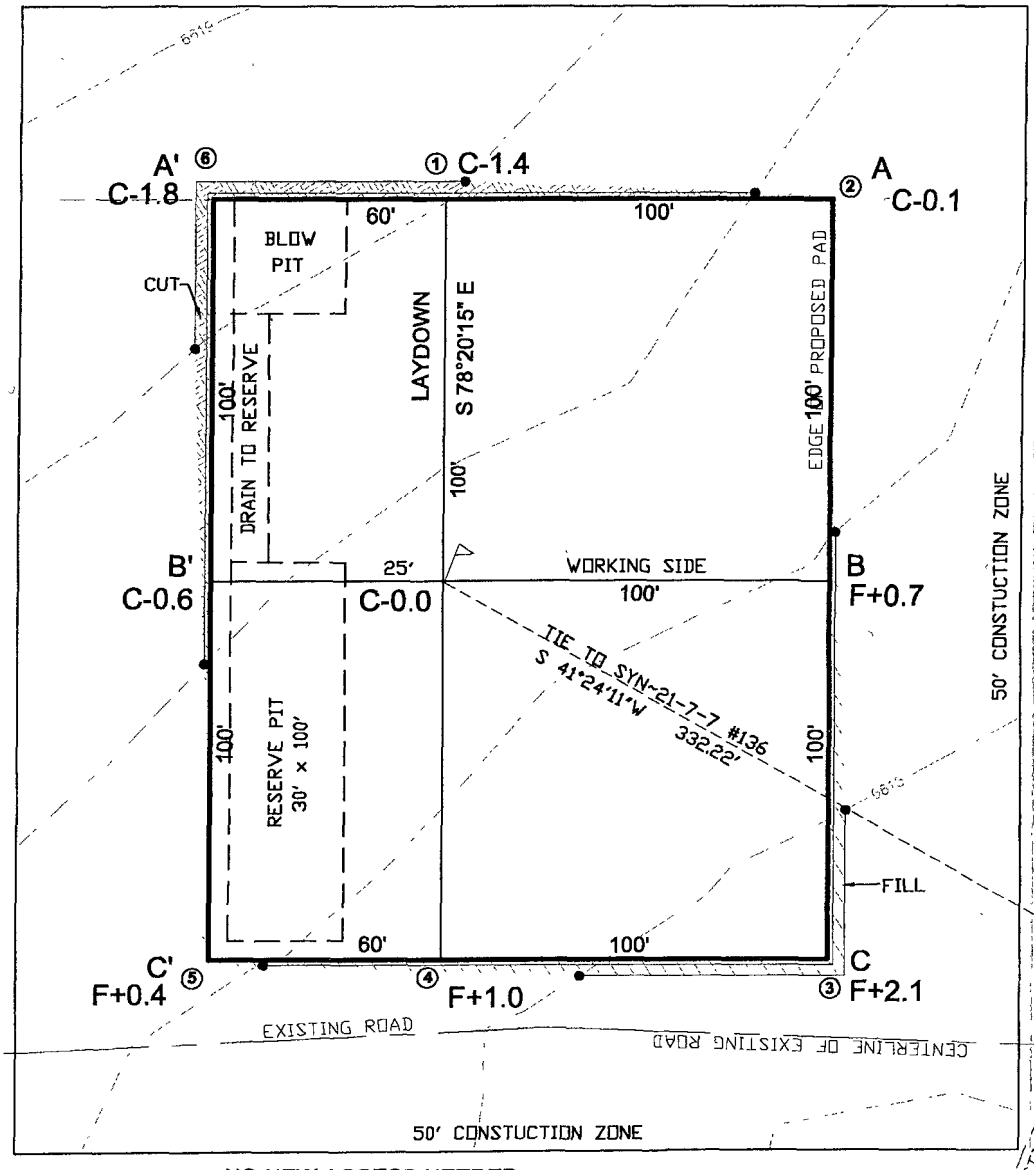
DAVID RUSSELL
Certificate Number 10201

LATITUDE: 36.06473°N
LONGITUDE: 107.61445°W
DATUM: NAD 83

SYNERGY OPERATING, L.L.C.

CALEB MESA SWD #1
2080' FSL & 1750' FEL
LOCATED IN THE NW/4 SE/4 OF SECTION 7,
T21N, R7W, N.M.P.M.,
SANDOVAL COUNTY, NEW MEXICO
GROUND ELEVATION: 6617', NAVD 88
FINISHED PAD ELEVATION: 6616.6', NAVD 88

25' 0 25' 50'
SCALE = 50'



NO NEW ACCESS NEEDED

1 FOOT CONTOUR INTERVAL SHOWN
SCALE: 1" = 50'
JOB No.: SYN064
DATE: 01/10/07

Russell Surveying
1409 W. Aztec Blvd. #5
Aztec, New Mexico 87410
(505) 334-8637

LATITUDE: 36.06473°N
LONGITUDE: 107.61445°W
DATUM: NAD 83

SYNERGY OPERATING, L.L.C.

CALEB MESA SWD #1
2080' FSL & 1750' FEL
LOCATED IN THE NW/4 SE/4 OF SECTION 7,
T21N, R7W, N.M.P.M.,
SANDOVAL COUNTY, NEW MEXICO
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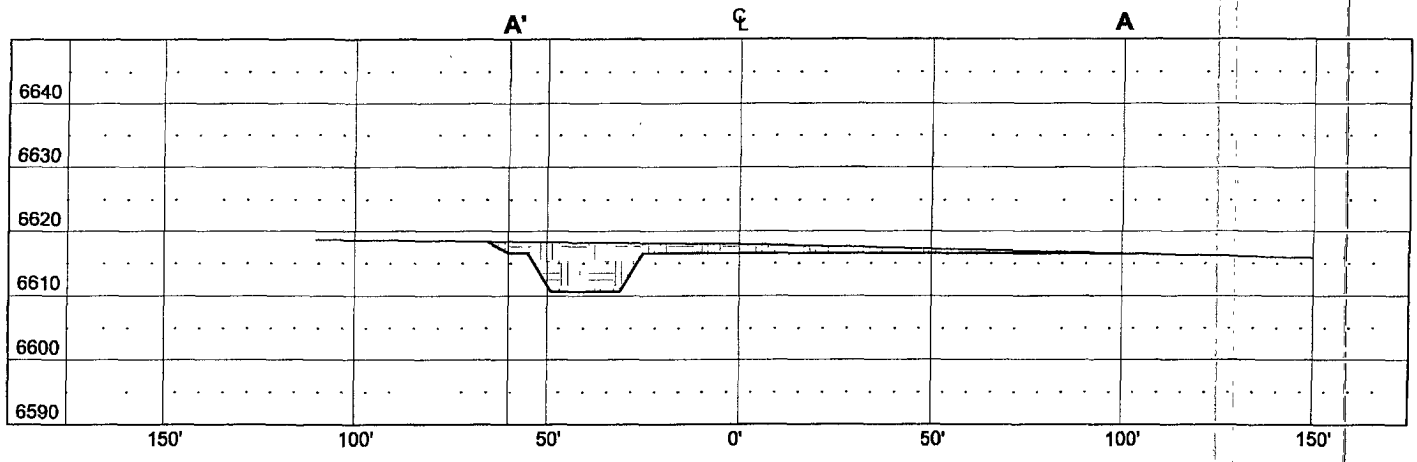

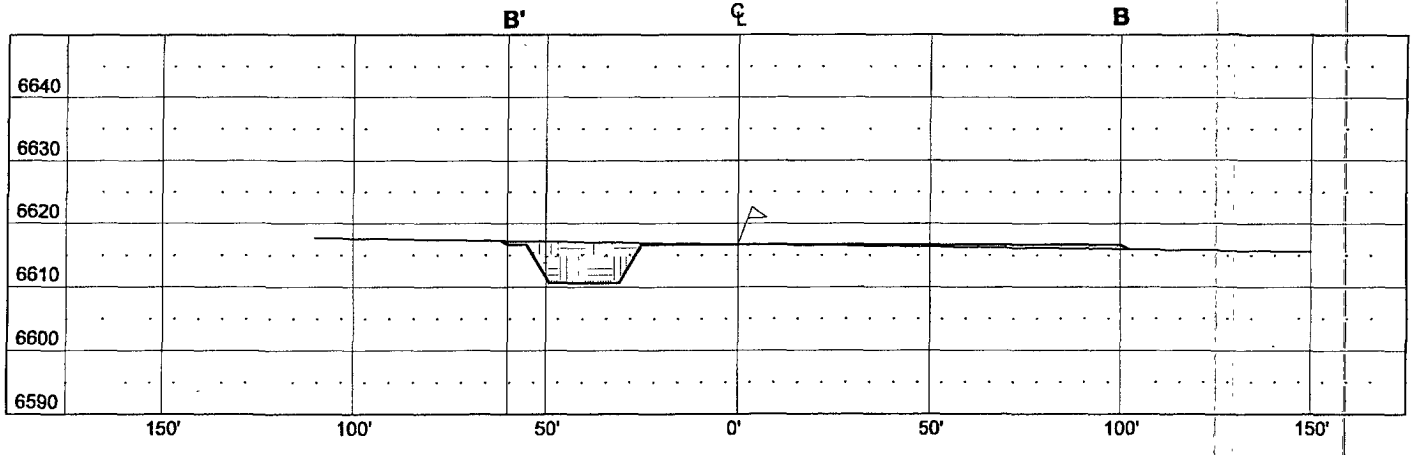

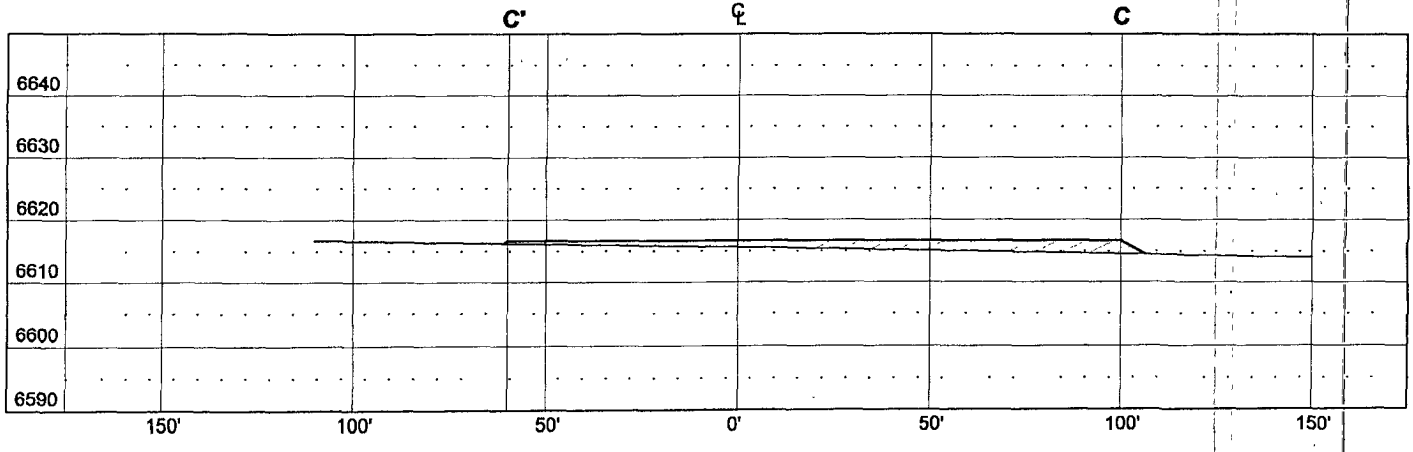

VERT. SCALE: 1" = 30'
HORZ. SCALE: 1" = 50'
JOB No.: SYN064
DATE: 01/10/07

CUT

FILL

Russell Surveying
1409 W. Aztec Blvd. #5
Aztec, New Mexico 87410
(505) 334-8637

Synergy Operating LLC

Drilling Plan

(As per 43 CFR Part 3160, Onshore Oil & Gas Order No.1)

Well Name: Caleb Mesa SWD #1

Location: Unit J, 2080' FSL, 1750' FEL, Sec. 7, T-21-N, R-07-W, Sandoval Co. NM
Latitude 36.06473° N, Longitude 107.61445° W

Field: Entrada SWD (96162)

Elevation: 6617' GL

A, B) GEOLOGIC DATA

Formations:	Tops/Depth	Fluids
Fruitland Coal	540'	Natural gas & produced water
Pictured Cliffs	607'	Natural gas & produced water
Lewis Shale	717'	
Mesa Verde	1385'	Produced water
Mancos	2997'	
Gallup	3825'	Oil, natural gas & produced water
Graneros	4814'	
Dakota	4844'	Produced water
Burro Canyon	5124'	
Morrison	5156'	
Entrada	6014'	
TOTAL Depth	6250'	

C) OPERATOR'S MINIMUM SPECIFICATIONS FOR BOPE

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:
340' (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 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.

D) OPERATOR'S PROPOSED CASING PROGRAM

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' – 340'	1.3125"
7-7/8"	5.500"	15.5#/ft	K-55	0' – 6250'(TD)	0.9125"
4.950"	3-1/2"	9.3#/ft	N-80	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 two joint and a third will be run on the collar of the fifth joint off of the bottom. 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 on the 2nd and 5th joints off of the bottom. Surface casing will be run to a minimum depth of 340' 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 turbolizer will be run 10' above the shoe, secured with a stop ring, and two 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. A DV cement stage tool will be placed at approximately 2700' and a ported cement collar will be run at approximately 500'.

E) CEMENTING PROGRAM

8-5/8" Surface Casing: Pump 260-sxs (307-ft^3) Type V Cement w/ 3% $CaCl_2$ + ¼-#/sx Celloflake. Yield = 1.18 ft^3/sx, Slurry Weight = 15.6 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:

1st-Stage

Lead Slurry: Pump 293-sxs (624-ft^3) Premium Lite FM Cement w/ 2% $CaCl_2$ + ¼-#/sx Celloflake + 5-#/sx LCM-1 + 0.4% FL-52 + 0.4% Sodium Metasilicate + 8% Gel. Yield = 2.13 ft^3/sx, Slurry Weight = 12.1 PPG.

Tail Slurry: Pump 193-sxs (266-ft^3) Type III Cement w/ 1% $CaCl_2$ + ¼-#/sx Celloflake + 0.2% FL-52. Yield = 1.38 ft^3/sx, Slurry Weight = 14.6 PPG.

2nd-Stage

Slurry: Pump 319-sxs (679-ft^3) Premium Lite FM Cement w/ 3% $CaCl_2$ + ¼-#/sx Celloflake + 5-#/sx LCM-1 + 0.4% FL-52 + 0.4% Sodium Metasilicate + 8% Gel. Yield = 2.13 ft^3/sx, Slurry Weight = 12.1 PPG.

1st Stage slurry volume = 890-ft^3, 2nd Stage slurry volume = 679-ft^3.
Total slurry volume is 1569-ft^3.

The projected annular open hole volume from 6250' to surface casing set depth is: 1024-ft^3, the annular volume from surface casing set depth-to-the surface is: 281-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.

F) CHARACTERISTICS OF THE PROPOSED CIRCLATING MEDIUM

Mud Program: A freshwater based gel mud system will be utilized. Water sourced from commercial suppliers.

Depth	Type	Viscosity	PPG
0-340'	Spud	40-50	8.4-8.9
340'-TD	Low Solids, Non-dispersed	30-60	8.4-9.5*

* Barite will be used as a weighting material and LCM will utilized if needed

G) TESTING, LOGGING, AND CORING PROCEDURES

Logging Program:

A) Open Hole: GR-SP-Induction/Resistivity-Neutron-Density : 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.

H) 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.

I) OTHER FACETS OF THE PROPOSED OPERATION

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

Estimated Drilling Time: Spud date will occur after the APD has been approved, the location built and a drilling contractor selected and scheduled. Once drilling operations commence, it is anticipated that the drilling phase should be completed within seven (7) to ten (10) days.

Estimated Completion Time: Rig completion activities are estimated to take approximately five (5) days. Surface facilities anticipated will include an inlet gas/water 2-Phase separator, four four-hundred (400) bbl water storage tanks and an enclosed water injection skid. No oil storage facilities are anticipated at this site.

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.

Wellhead Equipment: A 8-5/8" x 5-1/2" 3000# bradenhead will be screwed on to the top joint of the 8-5/8" surface casing.

Exhibit #1

Well Control Equipment Schematic for 2M Service

Attachment to Drilling Technical Program

Typical BOP setup

ocation: San Juan Basin, New Mexcio