

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

2007 JUL 25 AM 12 00
APPLICATION FOR PERMIT TO DRILL OR REENTER

RECEIVED

5 Lease Designation and Serial No
NMNM-99736 (expiring 9/30/07)

6 If Indian, Allottee or Tribe Name

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

8 Lease Name and Well No.
Synergy 21-7-9 # 190

9. API Well No.
30-043-21051

10. Field and Pool, or Exploratory
Basin Fruitland Coal

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

0 Sec 9, T-21-N, R-07-W

12. County or Parish, Sandoval
13. State New Mexico

17 Spacing Unit dedicated to this well
320.0 Acres - West Half

20 BLM/BIA Bond No on file
NM-2559

23 Estimated duration
30 days

1a. Type of Work ☒ DRILL ☐ REENTER 070 FARMINGTON NM

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

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

3a. Address PO Box 5513
Farmington, NM 87499 3b Phone Number (505) 325-5449

4 Location of Well (Footage, Sec, T, R., M, or Survey Description)
At surface: Unit Letter D, 775' FNL, 755' FWL, Sec 9, T21N-R7W
At proposed prod Zone: Same

14. Distance in miles and direction from nearest town or post office*
12 Miles South of Lybrook, New Mexico. Turn South US Hwy 550 MM - 113.25

15. Distance from proposed* location to nearest property or lease line, ft.
775 Feet from North Line
(Also to nearest drlg Unit line, if any)

18 Distance from proposed* location to nearest property or lease line, ft.
755 Feet from West Line

21. Elevation (Show whether DF, KDB, RT, GL, etc)
6695' Ground Level

22. Approximate date work will start*
As Soon As Possible

24. Attachments

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

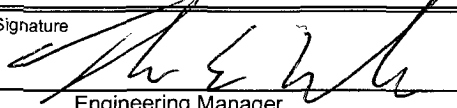
1. Well plat certified by a registered surveyor
2. A Drilling Plan
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office.
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above)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

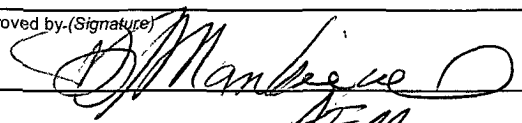
Size of Hole	Grade, Size of Casing	Weight per Foot	Setting Depth	Quantity of Cement
12-1/4"	8-5/8" K-55	24 #	120'	70 sxs, 99 ft3 - 100% Excess
7"	5-1/2" K-55	15.5#	900'	132 sxs, 184 ft3 - 100% OH Excess

LEASE EXPIRES 9/30/2007

SEE ATTACHED APD INFORMATION

Latitude: 36.07143 Deg N
Longitude: 107.58816 Deg W

25. Signature  Name(Printed/Typed) Thomas E. Mullins Date 7-25-07
Title Engineering Manager

Approved by: (Signature)  Name(Printed/Typed) Office FFO Date 8/14/07
Title

Application approval does not warrant or certify the applicant holds legal or equitable title to those rights in the subject lease 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 mail United States any false, fictitious, or fraudulent statements or representations as to any matter within its jurisdiction

*(Instructions on reverse)

Obtain a pit permit from NMOC prior to constructing location

NOTIFY AZTEC OCD 24 HRS.
PRIOR TO CASING & CEMENT

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

8-20-07
aw

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

OIL CONS. DIV.
DIST. 3

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

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised October 12, 2005

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

OIL CONSERVATION DIVISION

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

2007 JUL 25 AM 12:00

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

RECEIVED

070 FARMINGTON NM

☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-043-21051	² Pool Code 71629	³ Pool Name BASIN FRUITLAND COAL
⁴ Property Code: 36676	⁵ Property Name SYNERGY 21-7-9	⁶ Well Number 190
⁷ GRID No. 163458	⁸ Operator Name SYNERGY OPERATING, L.L.C.	⁹ Elevation 6695'

¹⁰ Surface Location

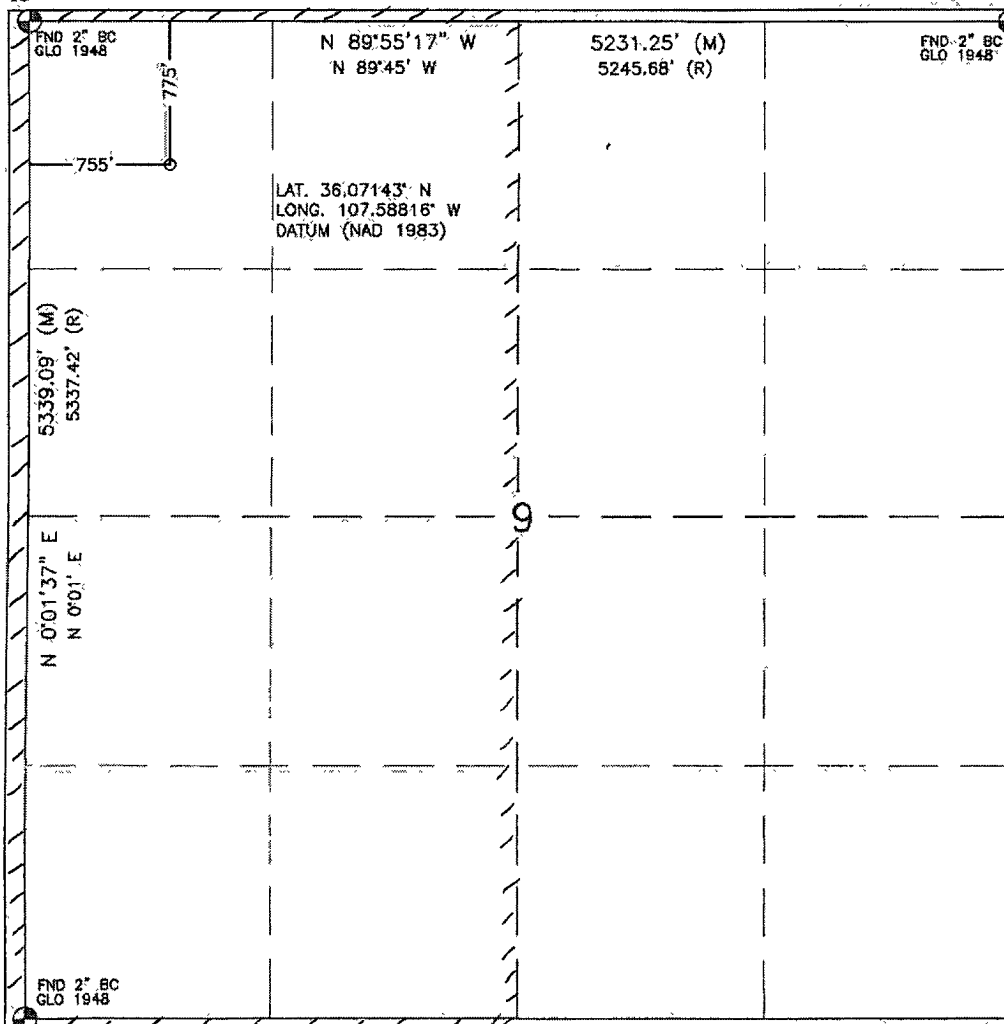
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	9	21N	7W		775'	NORTH	755'	WEST	SANDOVAL

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 320 W/2				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

Thomas E. Mullins
Printed Name

18 SURVEYOR CERTIFICATION

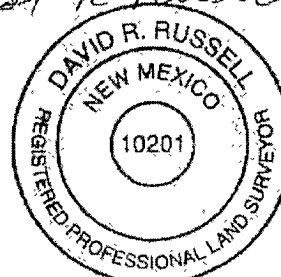
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

JULY 12, 2007

Date of Survey

Signature and Seal of Professional Surveyor:

David R. Russell



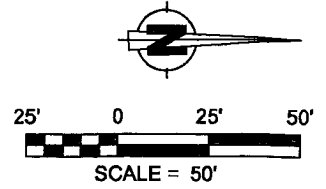
DAVID RUSSELL

Certificate Number

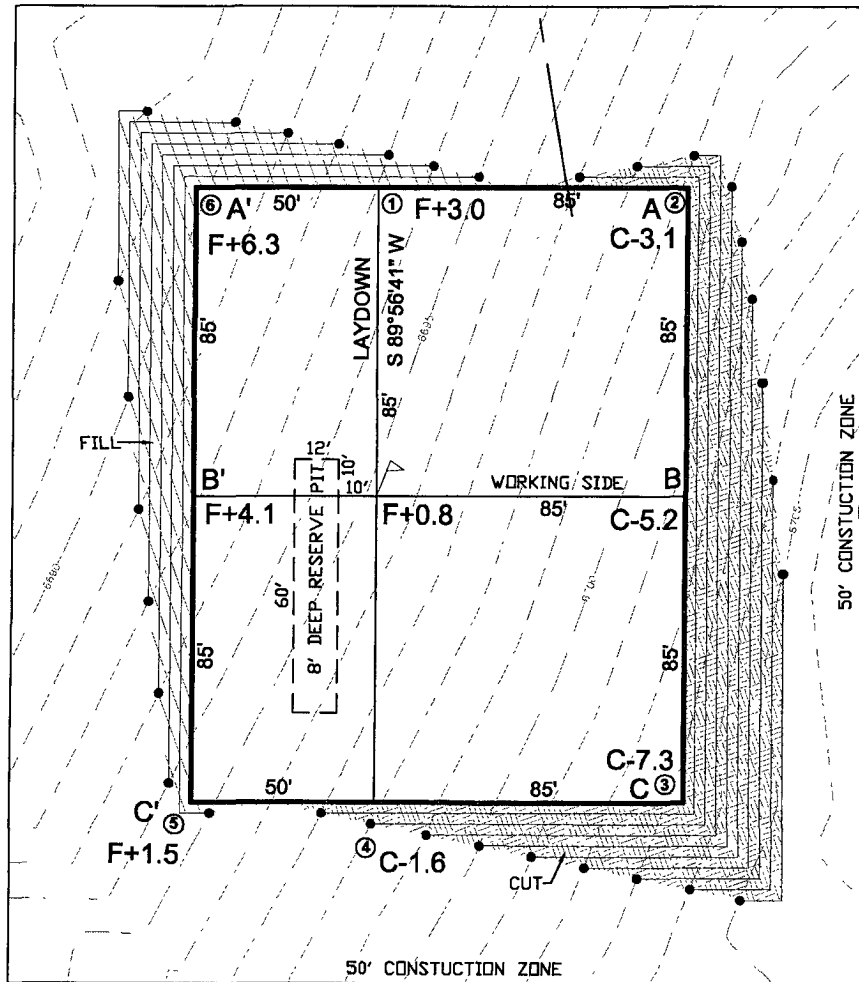
10201

LATITUDE: 36.07143°N
LONGITUDE: 107.58816°W
DATUM: NAD 83

SYNERGY OPERATING, L.L.C.
SYNERGY 21-7-9 #190
775' FNL & 755' FWL
LOCATED IN THE NW/4 NW/4 OF SECTION 9,
T21N, R7W, N.M.P.M.,
SANDOVAL COUNTY, NEW MEXICO
GROUND ELEVATION: 6695', NAVD 88
FINISHED PAD ELEVATION: 6696.0', NAVD 88



2160 LF OF NEW ACCESS
ACROSS BLM LANDS FROM
SYN ~ 21-7-8 #139 WELL PAD



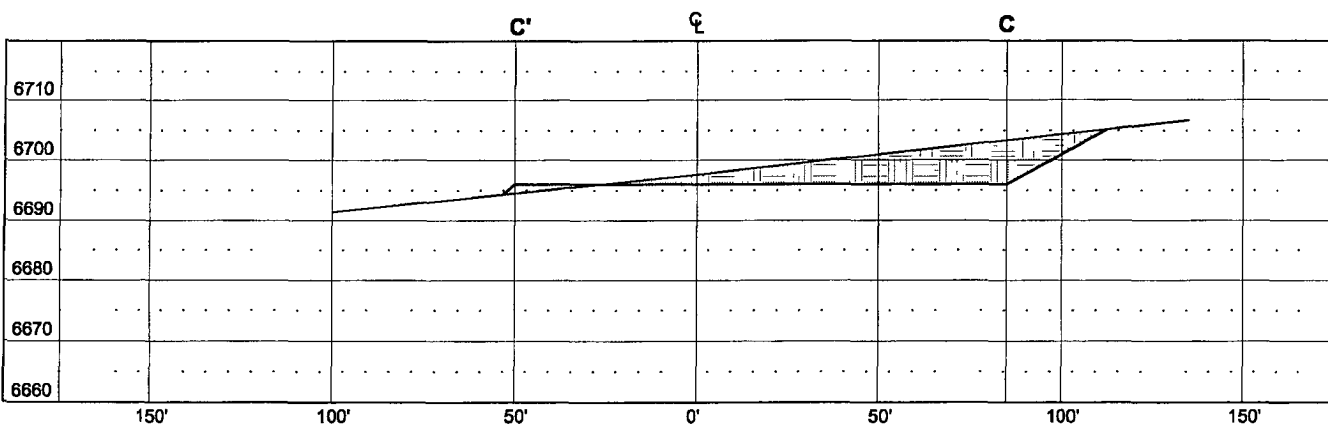
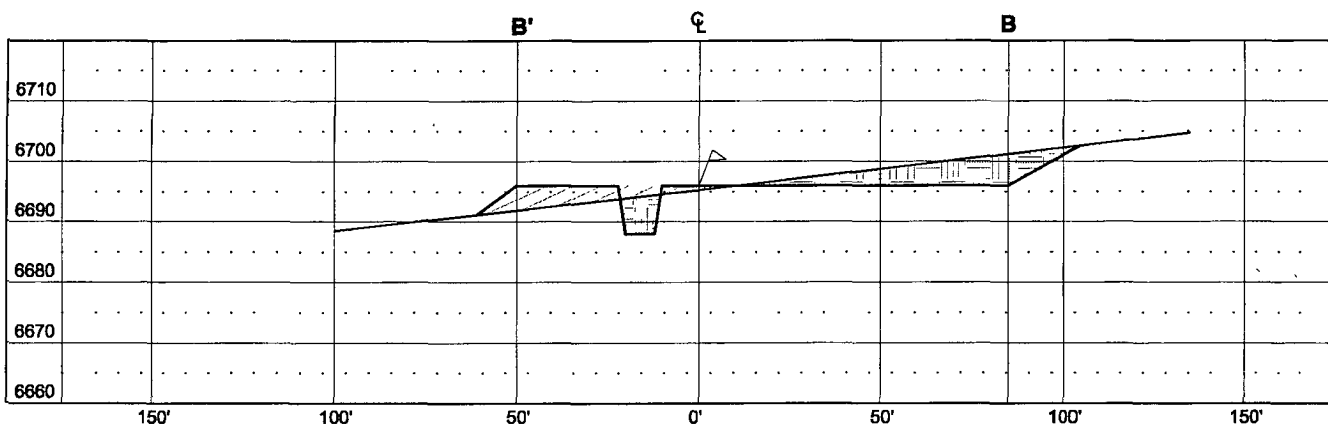
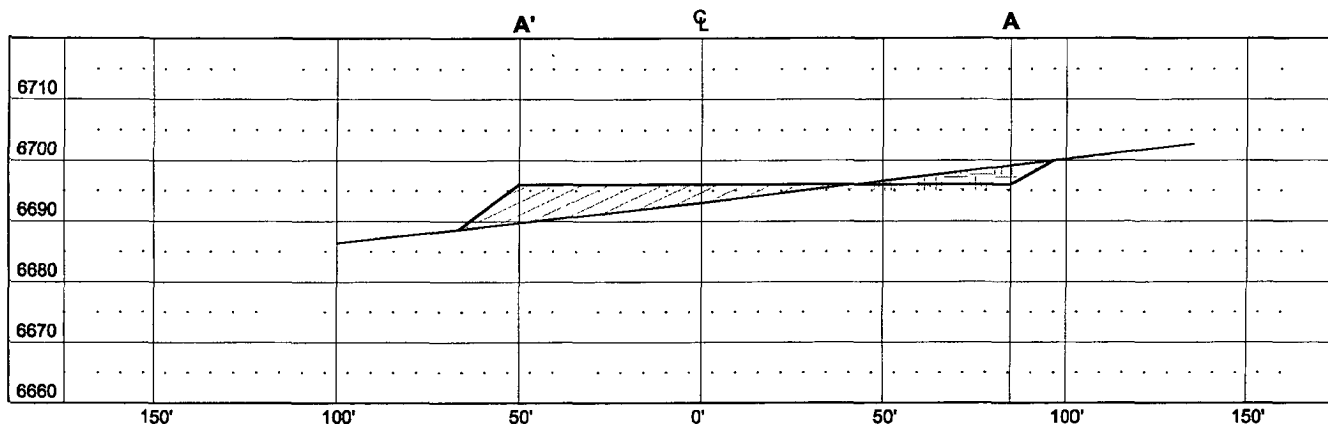
1 FOOT CONTOUR INTERVAL SHOWN
SCALE: 1" = 50'
JOB No.: SYN065; REV1
DATE: 07/19/07



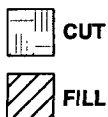
Russell Surveying
1409 W. Aztec Blvd. #5
Aztec, New Mexico 87410
(505) 334-8637

LATITUDE: 36.07143°N
LONGITUDE: 107.58816°W
DATUM: NAD 83

SYNERGY OPERATING, L.L.C.
SYNERGY 21-7-9 #190
775' FNL & 755' FWL
LOCATED IN THE NW/4 NW/4 OF SECTION 9,
T21N, R7W, N.M.P.M.,
SANDOVAL COUNTY, NEW MEXICO
GROUND ELEVATION: 6695', NAVD 88
FINISHED PAD ELEVATION: 6696.0', NAVD 88



VERT. SCALE: 1" = 30'
HORZ. SCALE: 1" = 50'
JOB No.: SYN065; REV1
DATE: 07/19/07



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

Cement Calculations

12.25" Hole Size

8-5/8" Casing Size

ANNULAR AREA CEMENT CALCULATIONS

12.25 ID OF HOLE

8.625 OD OF PIPE

0.073504 Bbls per Ft

0.412722 Ft3 per Ft

1.42 Cement Yield (ft3 per sack)

0.290649 Sacks per Ft

120 DEPTH OF CASING

8.820423 BBLS OF CEMENT 100%

49.52667 FT3 OF CEMENT NEEDED 100%

34.87794 SACKS OF CEMENT PER 100%

17.64085 DOUBLED BBLS OF CEMENT

99.05335 FT3 OF CEMENT (W EXCESS)

69.75588 SACKS WITH EXCESS

7" Hole Size

5-1/2" Casing Size

ANNULAR AREA CEMENT CALCULATIONS

7.00 ID OF HOLE

5.50 OD OF PIPE

0.018213 Bbls per Ft

0.102264 Ft3 per Ft

1.39 Cement Yield (ft3 per sack)

0.073572 Sacks per Ft

900 DEPTH OF CASING

16.39145 BBLS OF CEMENT 100%

92.038 FT3 OF CEMENT NEEDED 100%

66.21439 SACKS OF CEMENT PER 100%

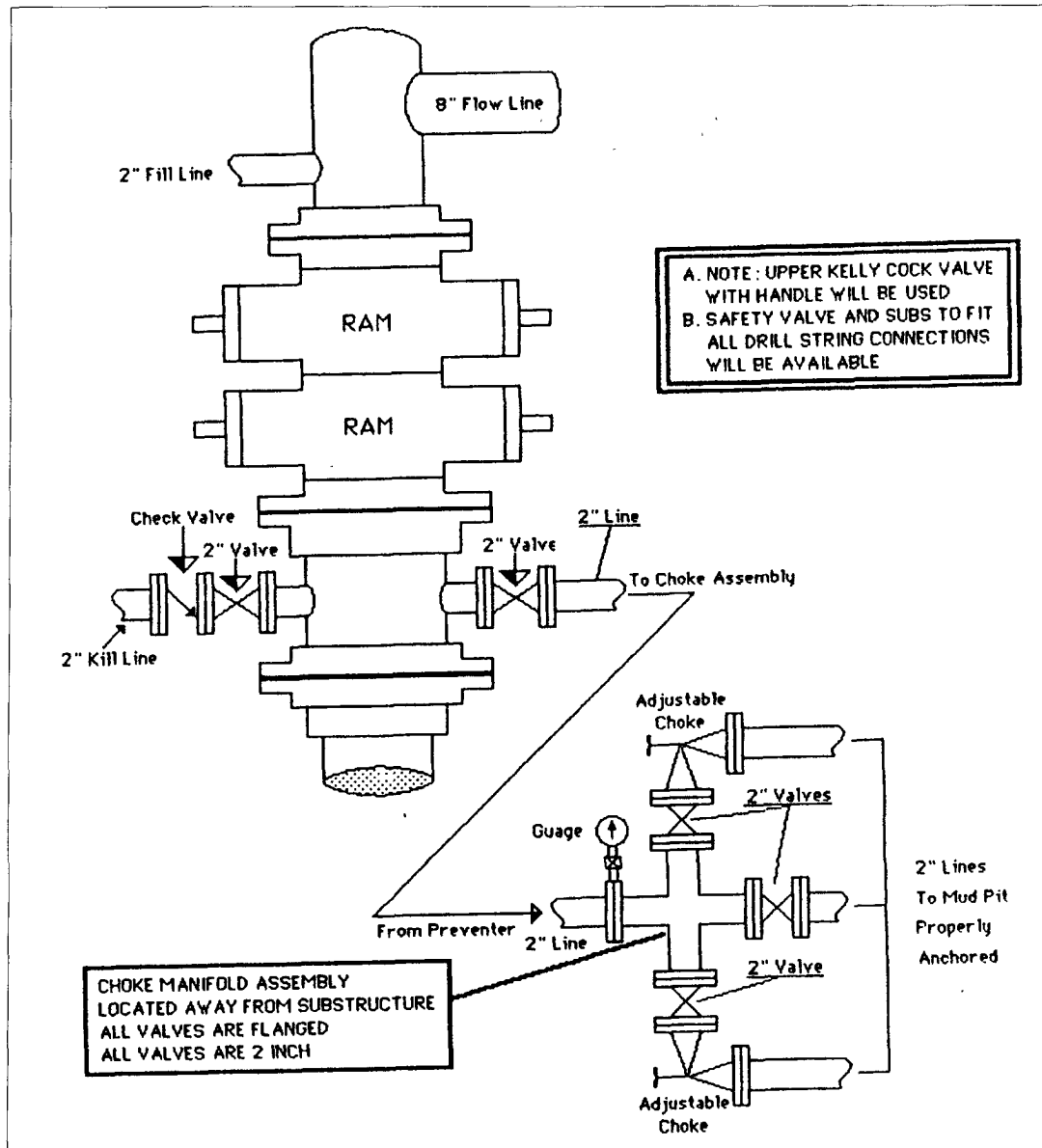
32.7829 DOUBLED BBLS OF CEMENT

184.076 FT3 OF CEMENT (W EXCESS)

132.4288 SACKS WITH EXCESS

Synergy 21-7-9 # 190

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#.

Synergy Operating LLC

Operations Plan

Well Name: Synergy 21-7-9 # 190

Location: Unit D – 775' FNL, 755' FWL, Sec. 09, T-21-N, R-7-W, Sandoval Co. NM
Latitude 36.07143° N, Longitude 107.58816° W (NAD 83)

Field: Basin Fruitland Coal (West Half Spacing Unit)

Elevation: 6695' GL

GEOLOGIC PROGRAM

Formations:	Tops/Depth	Fluids
Base Ojo/Top Kirtland	Surface	None
Fruitland	396'	Natural gas & produced water
Lower Fruitland Coal	704'	Natural gas & produced water
Pictured Cliffs	719'	Natural gas & produced water
TOTAL Depth	900'	

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 300-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. We anticipate using thirty (30) – fifty (50#) sacks of bentonite clay, and three (3) – five (5) gallon pails of poly-plus.

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, though not anticipated

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

BLM

All BOP systems will be in accordance with ~~MMS~~ BLM 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" or a 7-1/16" 1000#, 2000#, 3000#, or 5000# double gate BOP Stack & choke manifold will be utilized. Prior to drilling out the surface casing, the rams and casing will be tested to a minimum of 500#. All tests will be charted.

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/ K-55	0' – 120'	1.3125"
7"	5.500"	15.5#/ft	J-55/ K-55	0' – TD(900'+/-)	0.475"
2-3/8"	2.375"	4.7#/ft	J-55/ K-55	Unknown	

Per BLM Onshore Order # 2 - Casing collars shall have a minimum clearance of 0.422 inches on all sides in the hole/casing annulus, with recognition that variances can be granted for justified exceptions.

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. This shoe and casing will be pressure tested prior to drill-out.

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. Centralizers will be run on every other joint of casing. Estimated total of twenty (22) 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. A short joint of 5-1/2" may be run as a marker joint just above the Fruitland Coal.

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. A 5-1/2" screw-on 1500# wellhead with a 4" line pipe outlets and 2" line pipe outlet will be run. 2-3/8" production tubing is forecast to be run.

Cementing Program:

8-5/8" Surface Casing: Pump 70-sxs (99-ft³) Type III Cement w/ 3% CaCl₂ + 1/4-#/sx Celloflake. Yield = 1.42 ft³/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 600# for 15-Minutes.

5-1/2" Production Casing: Pump 132-sxs (184-ft³) Type III Cement w/ 1% CaCl₂ + 1/4-#/sx Celloflake + 0.2% FL-52 + 2-#/sx Pheno-Seal. Yield = 1.39 ft³/sx, Slurry Weight = 14.6 PPG. Total slurry volume is 32.7 bbls.

The projected annular hole volume from 900' to surface is: 92 ft³. 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. No separator or production tank is anticipated, only a rod pumping unit or small electric submersible pump will be installed. 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" or 2" 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 NMOCD general pit guideline information. A form C-144 will be prepared and submitted for the reserve pit in conjunction with this APD submittal.