

Submit to Appropriate
District Office
State Lease - 6 copies
Fee Lease - 5 copies

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-101
Revised 1-1-89

OIL CONSERVATION DIVISION

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

API NO. (assigned by OCD on New Wells)

30-045-28601 ✓

5. Indicate Type of Lease

STATE ☐

FEE ☒

6. State Oil & Gas Lease No.

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work:

DRILL ☒

RE-ENTER ☐

DEEPEN ☐

PLUG BACK ☐

b. Type of Well:

OIL
WELL ☐

GAS
WELL ☐

OTHER SWD ☐

SINGLE
ZONE ☒

MULTIPLE
ZONE ☐

7. Lease Name or Unit Agreement Name

Gallegos Canyon Unit

13895 13 SWD ✓

2. Name of Operator

BHP Petroleum (Americas), Inc. ✓

8. Well No.

12-1 SWD

3. Address of Operator

5805 English Drive, Farmington, NM 87401

9. Pool name or Wildcat

Mesa Verde 96160

4. Well Location

Unit Letter J : 1467 Feet From The South Line and 2350 Feet From The East Line

Section 13 Township 29N Range 13W NMPM San Juan County

10. Proposed Depth

3800 feet

11. Formation

Mesa Verde

12. Rotary or C.T.

Rotary

13. Elevations (Show whether DF, RT, GR, etc.)

5416' UG

14. Kind & Status Plug. Bond

Statewide

15. Drilling Contractor

Not Selected

16. Approx. Date Work will start

October 15, 1991

17. PROPOSED CASING AND CEMENT PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
12 1/4"	8 5/8"	24#	300'	215 sx	Surface
7 7/8"	5 1/2"	15.5#	4000'	535 sx	Surface

This well is proposed to further develop the water disposal system for the Gallegos Canyon Unit. See the attached drilling plan for details of the drilling and completion.

APPROVAL EXPIRES 4-2-92
UNLESS DRILLING IS COMMENCED.
SPUD NOTICE MUST BE SUBMITTED
WITHIN 10 DAYS.

RECEIVED
OCT 01 1991
OIL CON. DIV.
DIST. 3

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: IF PROPOSAL IS TO DEEPEN OR PLUG BACK, GIVE DATA ON PRESENT PRODUCTIVE ZONE AND PROPOSED NEW PRODUCTIVE ZONE. GIVE BLOWOUT PREVENTER PROGRAM, IF ANY.

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

SIGNATURE

R. E. Fielder

TITLE

Agent

DATE

10/1/91

TYPE OR PRINT NAME

R. E. Fielder

TELEPHONE NO. 505-325-5220

(This space for State Use)

APPROVED BY

Eric R. Burch

TITLE

DEPUTY OIL & GAS INSPECTOR, DIST. #3

DATE

OCT 02 1991

CONDITIONS OF APPROVAL, IF ANY:

Mod 6-100

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

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised 1-1-89

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

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TECHNOLOGY

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

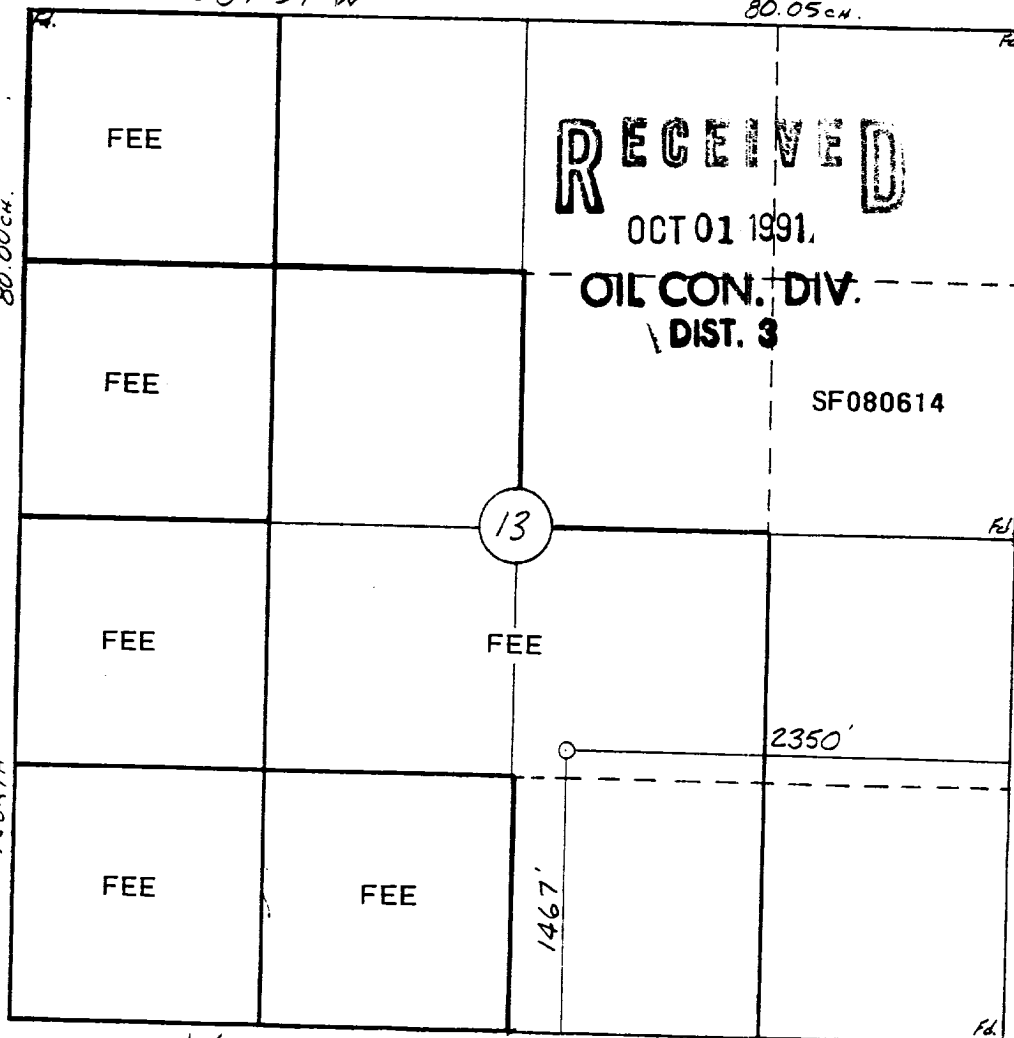
DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

WELL LOCATION AND ACREAGE DEDICATION PLAT
All Distances must be from the outer boundaries of the section

Operator BHP PETROLEUM (AMERICAS) INC.		Lease GALLEGOS CANYON UNIT 13 SW		Well No. 13-1 SW
Unit Letter J	Section 13	Township 29 N	Range 13 W	County San Juan
Actual Footage Location of Well: 1467 feet from the South line and 2350 feet from the East line				
Ground level Elev. 5416	Producing Formation MNV	Pool 1100	Dedicated Acreage: NA Acres	
<p>1. Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.</p> <p>2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).</p> <p>3. If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.? <input type="checkbox"/> Yes <input type="checkbox"/> No If answer is "yes" type of consolidation _____</p> <p>If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____</p> <p>No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.</p>				

0 330 660 990 1320 1650 1980 2310 2640 2970 3300 3630 3960 4290 4620 4950 5280 5610 5940 6270 6600



OPERATOR CERTIFICATION

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

Signature
R.E. Fielder
Printed Name
R.E. Fielder
Position
Agent
Company
BHP Petroleum (Americas), Inc.
Date
10/1/91

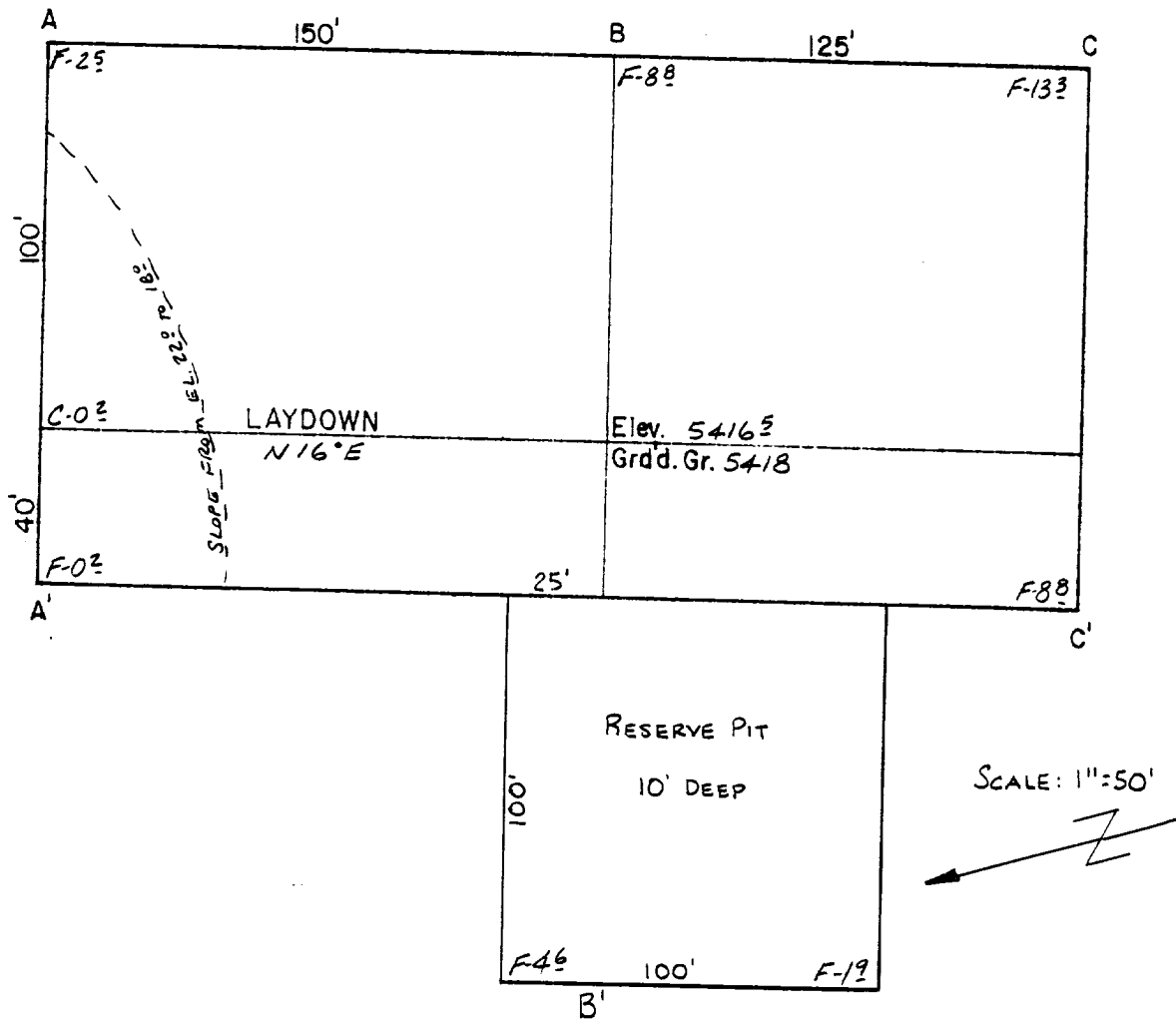
SURVEYOR CERTIFICATION

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 knowledge and belief.

8-13-91

Date Surveyed
William E. Mahoke II
Signature & Seal of Professional Surveyor
#8466
NEW MEXICO
REGISTERED PROFESSIONAL LAND SURVEYOR

BHP PETROLEUM (AMERICAS) INC.
 GALLEGOS CANYON UNIT #13-1 SWD
 1467' FSL & 2350' FEL
 Sec. 13, T29N, R13W
 San Juan Co., N.M.

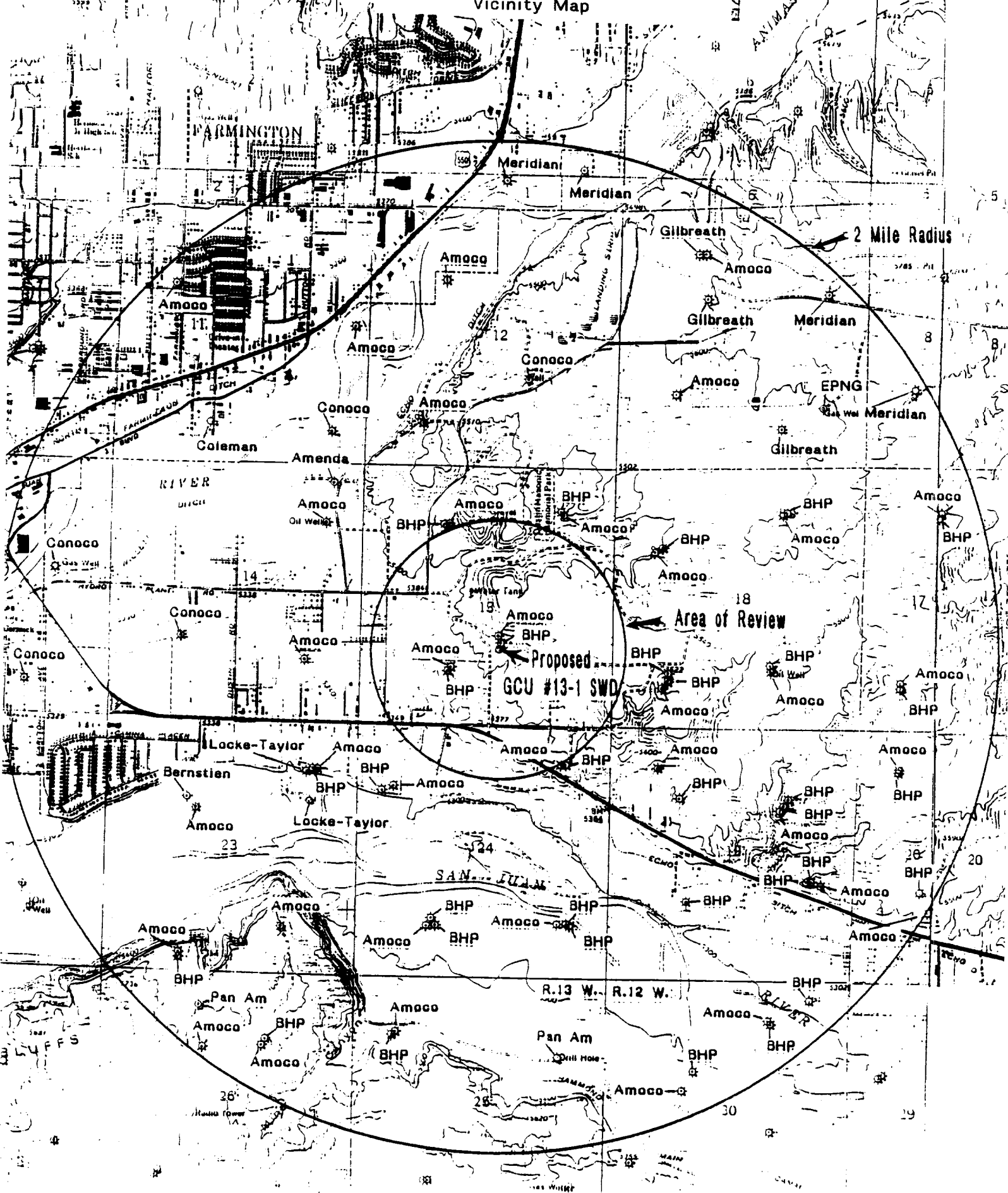


A-A'		Vert.: 1" = 30'	Horiz.: 1" = 100'	C/L
5420				
5410				
B-B'				
5415				
5405				
C-C'				
5415				
5405				

GALLEGOS CANYON UNIT #13-1 SWD
1467' FSL & 2350' FEL
Sec. 13, T29N, R13W
San Juan Co., N.M.

Vicinity Map

T.29 N.



BHP PETROLEUM (AMERICAS) INC.
GALLEGOS CANYON UNIT SALT WATER DISPOSAL WELL NO. 1
NE/SE SECTION 13, T29N, R13W
SAN JUAN COUNTY, NEW MEXICO

TEN POINT PROGRAM

1. Surface Formation: Ojo Alamo.

2. &

3. Estimated Formation Tops:

<u>FORMATION</u>	<u>DEPTH FROM SURFACE</u>	<u>EXPECTED PRODUCTION</u>
Ojo Alamo	@ surface	
Kirtland	5'	
Fruitland Formation	1025'	
Pictured Cliffs	1035'	
Lewis Shale	1535'	Gas
Cliff House Sand	2855'	
Menefee	3000'	
Point Lookout	3750'	

4. Casing and Cementing Program: A string of 8 5/8", 24#, J-55 ST&C casing will be set at approximately 300' in a 12 1/4" hole and cemented to the surface with 215 sacks Class "B" cement (yield 1.17 ft³ per sack) containing 2% CaCl₂ and 1/4 lb/sk celloflake. Slurry volume assumes 100% excess over calculated hole volume. If the cement job does not circulate to surface, cement will be topped off using 1" pipe down the 12 1/4" x 8 5/8" annulus. Centralizers will be run on the bottom six joints as long as boulders are not encountered while drilling the surface hole. If boulders are encountered while drilling the surface hole, no centralizers will be run. Minimum clearance between couplings and hole is 2.625". Prior to drilling out the shoe, casing and BOP will be tested to a minimum of 2000 psi. Safety factors utilized in the design of this casing string were: burst = 1.1; collapse = 1.125; and tension = 1.8 or 100,000 lb. overpull, whichever is greater.

A production string of 5 1/2" 15.5#, K-55 LT&C casing will be run from the surface to total depth in a 7 7/8" hole. This string will be cemented to surface by cementing in two stages. Stage one will be cemented to 2300' with a minimum of 280 sacks of 50-50 Pozmix cement containing 2% gel, 2% salt, 0.6% friction reducer, and 1/4#/sk celloflake (yield 1.29 cf/sk). A cement stage tool will be set at 2000 feet. Stage two will be cemented with 215 sacks of 65:35 Poz with 6% gel, 6 ppg of gilsonite and 2% CaCl₂ (yield 1.83 ft³ per sack). This will be followed by 40 sacks of Class "B" with 2% CaCl₂ (yield 1.17 ft³ per sack). Centralizers will be run on the bottom joint and every other joint for a total of 6 centralizers. One centralizer will be run below the cement stage tool and five will be run above the tool on every other joint. Minimum

clearance between the couplings and hole is 1.825". Prior to perforating the casing, the casing will be tested to a minimum of 2500 psi. Safety factors utilized in the design of this casing string were:

burst = 1.1; collapse = 1.125; and tension = 1.8 or 100,000 lb. overpull, whichever is greater.

Following the completion of the cementing operations, a sundry notice detailing the cement volumes and densities for each job will be submitted.

5. Pressure Control Equipment: (See attached schematic diagrams.) A minimum of a 2000 psi BOP well control system will be utilized. BOP's and choke manifold will be installed and pressure tested before drilling out under surface casing and then will be checked daily as to mechanical operation condition. Ram type preventors will be tested to 2000 psi. The annular preventor will be tested to 50% of its working pressure.

A full opening internal blowout preventor or drill pipe safety valve will be on the drill floor at all times and will be capable of fitting all connections.

6. Mud Program: A fresh water low solids, non-dispersed mud system will be used to drill this well. Sufficient materials will be on location at all times to maintain mud properties and to control any unforeseen lost circulation problems or abnormal pressures in the Farmington sands within the Kirtland formation. All drilling fluids will be contained in an earthen pit. At the completion of drilling, the drilling fluid will be hauled off and disposed of properly. The remaining accumulation of solids in the pit will be allowed to dry out and the pit will be covered up.

Mud program summary is as follows:

<u>Interval</u>	<u>Mud Weight(ppg)</u>	<u>Viscosity(sec/qt)</u>
0 to 300'	8.4	30 to 38
300' to TD	8.4 to 9.3	35 to 55

7. Auxiliary Equipment: An upper kelly cock with handle available will be installed in the system and the mud volume will be visually monitored constantly.
8. Logging Program: GR-N from surface to TD; DIL and FDC-CNL from 1000' to TD.

Coring Program: No cores are planned

Testing Program: No tests are planned.

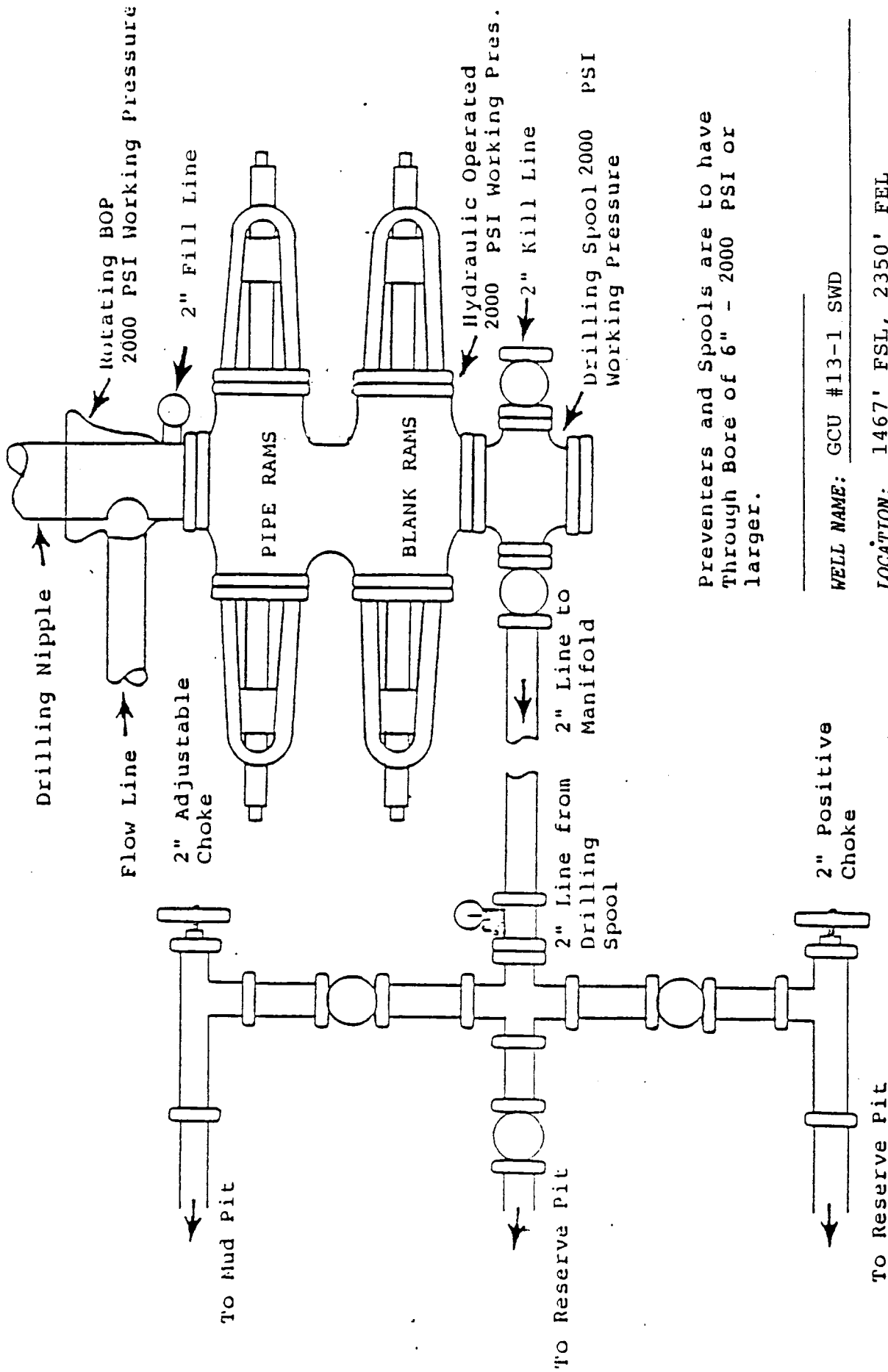
Stimulation Program: Perforate the Cliffhouse, Menefee and Point Lookout formations with 4 JSPF. Clean up the perforations with approximately 50 gallons of 7½% HCl per foot of perforations.

9. Abnormal Pressure: Although not expected, abnormal pressures are possible in the Farmington sands of the Kirtland formation.

Estimated Bottom Hole Pressure: 1650 psi.

10. Anticipated Starting Date: As soon as all required approvals are received.

Duration of Operation: It is estimated that a total of 8 days will be required for drilling operations and 5 days for completion operations.



Preventers and Spools are to have
Through Bore of 6" - 2000 PSI or
larger.

WELL NAME: GCU #13-1 SWD

LOCATION: 1467' FSL, 2350' FEL

Section 13, T29N, R13W, NMPM

COUNTY: San Juan

STATE: New Mexico

NOTE: Upper kelly cock valve with
handle will be used.
Safety valves for all drill
strings used will be on the
rig floor.