

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

AUG 1 1990

State of New Mexico
Minerals and Natural Resources Department

Form C-101
Revised 1-1-89

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240
DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

OIL CONSERVATION DIVISION

DIST. 3

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

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

API NO. (assigned by OCD on New Wells)
30-045-2818
5. Indicate Type of Lease STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/>
6. State Oil & Gas Lease No. E 5462-4
7. Lease Name or Unit Agreement Name Gallegos Canyon Unit
8. Well No. 397 W/320
9. Pool name or Wildcat Basin Fruitland Coal

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work: DRILL <input checked="" type="checkbox"/> RE-ENTER <input type="checkbox"/> DEEPEN <input type="checkbox"/> PLUG BACK <input type="checkbox"/>	7. Lease Name or Unit Agreement Name Gallegos Canyon Unit
b. Type of Well: OIL WELL <input type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> OTHER <input type="checkbox"/> SINGLE ZONE <input checked="" type="checkbox"/> MULTIPLE ZONE <input type="checkbox"/>	8. Well No. 397 W/320
2. Name of Operator BHP Petroleum (Americas) Inc.	9. Pool name or Wildcat Basin Fruitland Coal
3. Address of Operator 5847 San Felipe Suite #3600 Houston, Texas 77057	
4. Well Location Unit Letter K : 1555 Feet From The South Line and 1965 Feet From The West Line Section 36 Township 29N Range 13W NMPM San Juan County	

10. Proposed Depth 1436'	11. Formation Fruitland Coal	12. Rotary or C.T. Rotary			
13. Elevations (Show whether DF, RT, GR, etc.) 5473'	14. Kind & Status Plug. Bond Blanket	15. Drilling Contractor Unknown			
16. Approx. Date Work will start Fall 1990					
17. PROPOSED CASING AND CEMENT PROGRAM					
SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
8 3/4"	7"	20#	± 130'	50 sx (57.5 cu ft)	Surface
6 1/4"	4 1/2"	10.5#	± 1436'	182 sx (224 cu ft)	Surface

It's proposed to drill the subject well to 1436' with primary production anticipated in the Fruitland Coal.

Estimated Formation Tops:

Kirtland	56'
Fruitland	992'
Basal Fruitland Coal	1259'
Pictured Cliffs	1286'
T.D.	1436'

B.O.P.E. will consist of 2000# Reagan Bladder type B.O.P., pipe rams and blind rams
B.O.P.

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 Chuck Williams TITLE Field Services Administrator DATE August 6, 1990

TYPE OR PRINT NAME Chuck Williams TELEPHONE NO. 713 780-5448

(This space for State Use)

APPROVED BY Original Signed by FRANK T. CHAVEZ SUPERVISOR DISTRICT III DATE AUG 13 1990

CONDITIONS OF APPROVAL, IF ANY:

APPROVAL EXPIRES 2-13-91
UNLESS DRILLING IS COMMENCED.
SPUD NOTICE MUST BE SUBMITTED
WITHIN 10 DAYS.

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

AUG 10 1990

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-182
Revised 1-7-89

OIL CON. DIV. CONSERVATION DIVISION

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

DIST. 3

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Santa Fe, New Mexico 87504-2088

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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		Well No. 397
Unit Letter K	Section 36	Township 29 N	Range 13 W	County San Juan	
Actual Footage Location of Well: 1555 feet from the South line and 1965 feet from the West line					
Ground level Elev. 5473	Producing Formation Fruitland Coal		Pool Basin Fruitland Coal		Dedicated Acreage: 3.00 Acres

- Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.
- If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
- 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.?
☐ Yes ☐ No If answer is "yes" type of consolidation _____
If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.)
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.

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

N 89° 55' W

80.16 CH.

SEC. 50-03W
1.15 CH.
Fd.

OPERATOR CERTIFICATION

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

Signature

Chuck Williams

Printed Name

Chuck Williams

Position

Field Services Administrator

Company

BHP Petroleum (Americas) Inc.

Date

August 3, 1990

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.

7-13-90

Date Surveyed

William E. Mahnke II

Signature & Seal of Professional Surveyor

William E. Mahnke II

Certificate No.

8466

1965'

1555'

N 89° 57' W

80.10 CH.

BHP PETROLEUM (AMERICAS) INC.
GALLEGOS CANYON UNIT NO. 397
1555' FSL & 1965' FWL SECTION 36 T29N-R13W
SAN JUAN COUNTY, NEW MEXICO
TEN POINT PROGRAM

1. Surface Formation: Ojo Alamo

2 &

3. Estimated Formation Tops:

<u>Formation</u>	<u>Top</u>	<u>Expected Production</u>
Kirtland	56	
Fruitland	992	
Basal Fruitland Coal	1259	Gas
Pictured Cliffs	1286	Gas
Total Depth	1436	

4. Casing and Cementing Program: A string of 7" 20# K-55 casing with ST&C couplings is to be set at $\pm 130'$ in an 8 $\frac{3}{4}$ " hole and cemented to the surface in a single stage with 50 sx Class 'H' cement (yield = $1.15 \text{ ft}^3/\text{sx}$) containing 3 % CaCl_2 and $\frac{1}{4}$ #/sx celloflake. Slurry volume assumes a 100 percent excess over calculated hole volume. Centralizers will be run on the bottom two 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 as it has been BHP P(A)'s experience centralizers have a tendency to knock off boulders and hang up the casing while running in the hole. Minimum clearance between collars and hole is 1.094". Prior to drilling out shoe, casing and BOPE 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# overpull whichever was greater.

A production string of 4 $\frac{1}{2}$ " 10.5# K-55 casing with ST&C couplings will be run from the surface to total depth in a 6 $\frac{1}{4}$ " hole. This string will be cemented to the surface with a minimum of 132 sx of 50-50 pozmix containing 2 % gel, 0.5 % fluid loss additive and $\frac{1}{4}$ #/sx celloflake (yield = $1.26 \text{ ft}^3/\text{sx}$) followed by 50 sx of Class 'G' cement containing low fluid loss additives (yield = $1.15 \text{ ft}^3/\text{sx}$). Slurry volume assumes a 50 percent excess over calculated hole volume. Cement volume is subject to change after review and recalculation of hole volume from the open hole calipers. Centralizers will

be spaced such that a minimum of two are located above and two are located below the Basal Fruitland Coal; and, if any Ojo Alamo is present in the open hole section at the top of the hole, a minimum of one centralizer will be run just below the base and another into the base of Ojo Alamo. Minimum clearance between collars and hole is 1.25". Prior to perforating the casing for any attempted completion, 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# overpull whichever was greater.

A chronological log following the completion of the cementing operations detailing the pump rate, pump pressure, slurry density, and slurry volume for each job will be submitted in a Sundry Notice.

5. **Pressure Control Equipment:** (See attached schematic diagrams) A minimum of a 2M BOPE 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 70 percent of the internal yield pressure of the casing. The annular preventor will be tested to 50 percent of its working pressure.

A full opening internal blowout preventor or drill pipe safety valve will be on the drilling 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 of the Kirtland Formation. All drilling fluids will be contained in a steel pit. At the completion of drilling, the drilling fluid will be hauled off to be used for another well. The remaining accumulation of solids in the pit will be dumped into a small earthen pit beside the steel pit. As soon as this pit dries up, it will be covered up.

Mud program summary is as follows:

<u>Interval</u> <u>(feet)</u>	<u>Mud Weight</u> <u>(#/gal)</u>	<u>Viscosity</u> <u>(sec/qt)</u>
0 - 1000	8.4 or less	30 - 38
1000 - TD	9.3 or less	40 - 55

7. **Auxiliary Equipment:**

An upper Kelly Cock will be utilized. At a minimum, a flow sensor will be installed in the system and the mud volume constantly be visually monitored.

8. **Logging Program:** SP-DIL and GR-FDC-CNL logs will be run from TD to surface casing shoe.

Coring Program: No cores are planned.

Testing Program: No tests are planned.

Stimulation Program: Perf the Basal Fruitland Coal with 2 JSPF and frac with 50,000 gals of either a 70 quality nitrogen foam or a crosslinked-gelled water containing a minimum of 50,000 lbs of 20-40 mesh sand.

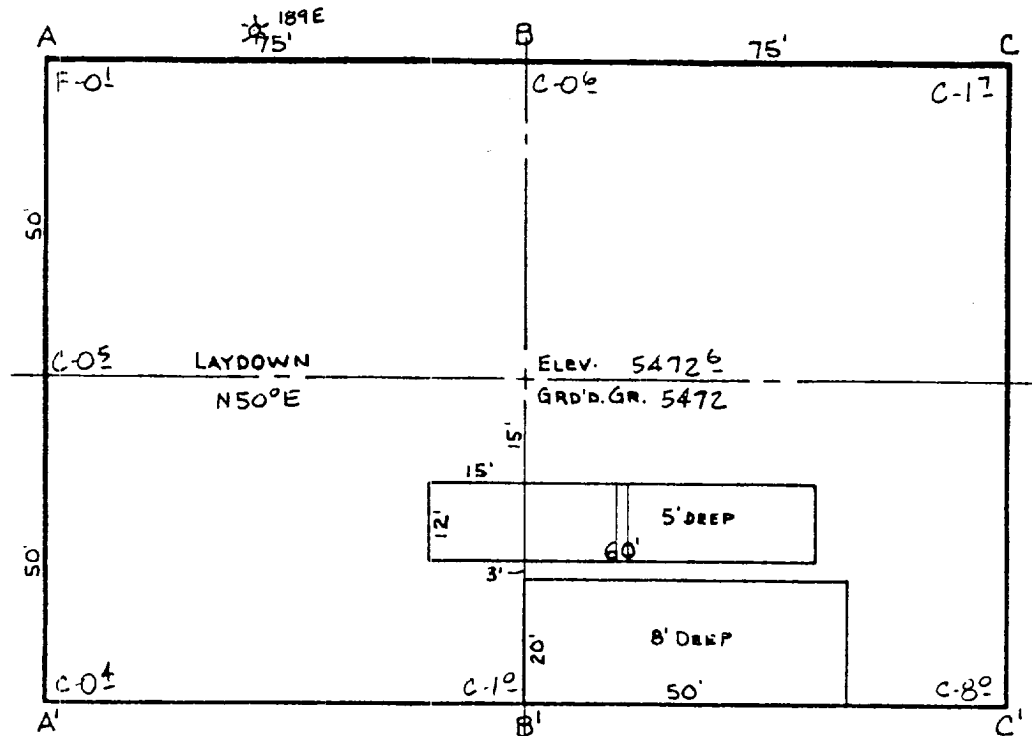
9. **Abnormal Pressure:** Although not expected, abnormal pressures are possible in the Farmington Sands of the Kirtland Formation.

Estimated Bottom Hole Pressure: 400 psi.

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

Duration of Operation: It is anticipated a total of 4 days will be required for drilling operations and 5 days for completion operations.

BHP PETROLEUM (AMERICAS) INC.
GALLEGOS CANYON UNIT #397
1555'FSL & 1965'FWL
Sec.36, T29N, R13W
San Juan Co., N.M.



SCALE: 1" = 30'



A-A' Vert.: 1" = 30' Horiz.: 1" = 50' C/L

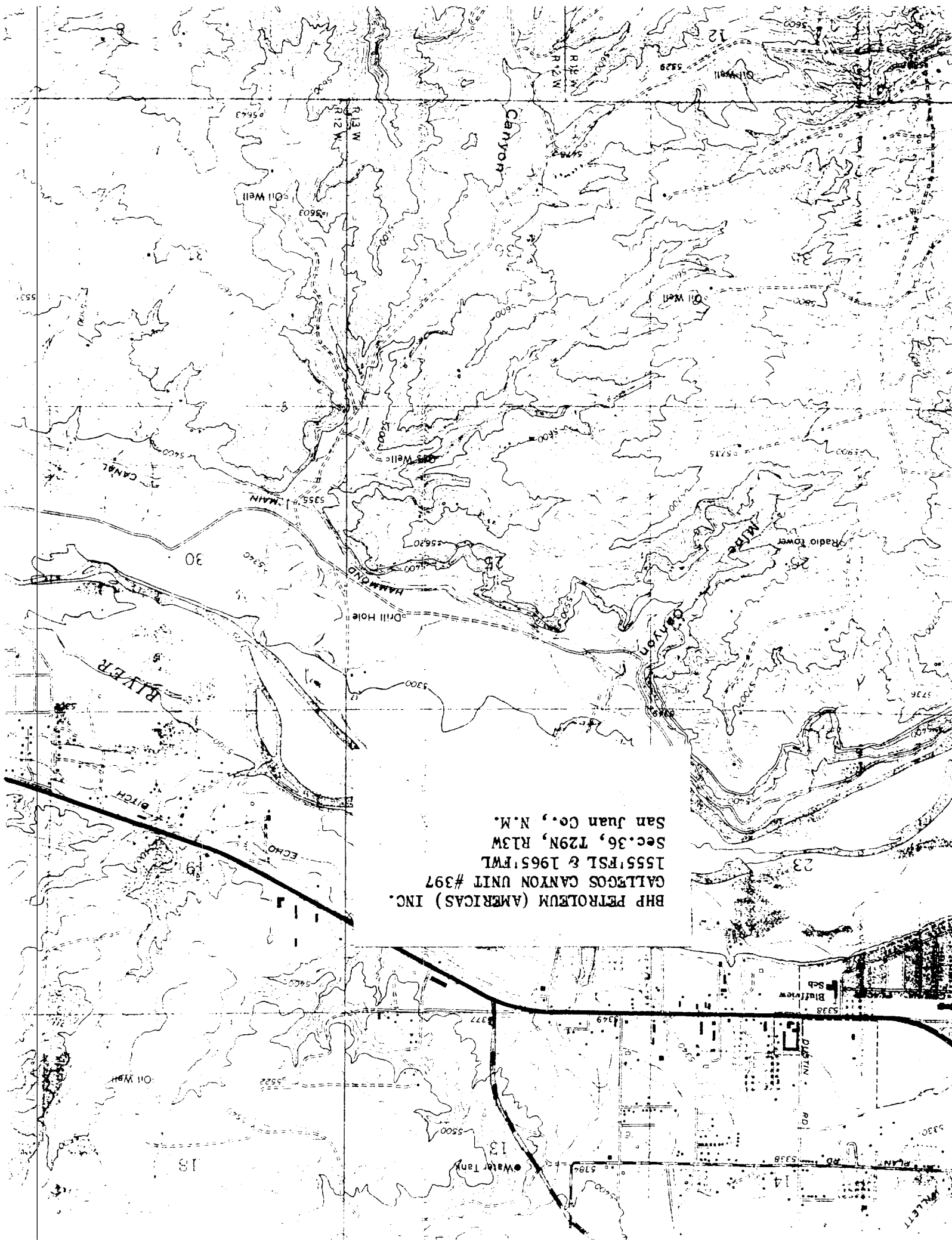
5480						
5470						

B-B'

5480						
5470						

C-C'

5480						
5470						



BHP PETROLEUM (AMERICAS) INC.
GALTICOS CANYON UNIT #397
1555 FSL & 1965 FWL
Sec. 36, T29N, R13W
San Juan Co., N.M.