

Blm
G



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION



BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

March 22, 1994

BHP Petroleum (Americas), Inc.
P.O. Box 977
Farmington, NM 87499

Attention: Fred Lowry

Administrative Order NSL-3371

Dear Mr. Lowry:

Reference is made to your application dated February 22, 1994, for a non-standard gas well location for you Gallegos Canyon Unit Well No. 529 to be drilled 2119 feet from the South line and 1398 feet from the East line (Unit J) of Section 36, Township 29 North, Range 12 West, NMPM, Undesignated West Kutz-Pictured Cliffs Pool, San Juan County, New Mexico. The SE/4 of said Section 36 shall be dedicated to the well forming a standard 160-acre gas spacing and proration unit.

By the authority granted me under the provisions of General Rule 104.F(1) the above-described unorthodox gas well location is hereby approved.

Sincerely,


William J. LeMay
Director

WJL/MES/amg

cc: Oil Conservation Division - Aztec
New Mexico State Land Office - Santa Fe

RECEIVED
MAR 23 1994

OIL CON. DIV.
DIST. 3

From: Ernie Busch
To: Mike Stogner
Subject: BHP PETROLEUM (AMERICAS) INC. (NSL)
Date: Thursday, April 07, 1994 1:23PM
Priority: High

WELL NAME: GCU #529
LOCATION: J-36-29N-12W
FOOTAGE: 2119' FSL; 1398' FEL
RECOMMEND: APPROVAL

CMD :
OG6C101
ONGARD
C101-APPLICATION FOR PERMIT TO DRILL
03/24/94 15:20:28
OGOSH -EMAC

OGRID Idn : 5073 API Well No: 30 45 27478 APD Status(A/C/P): A
Opr Name, Addr : CONOCO INC
10 DESTA DR W
Aprvl/Cncl Date : 02-01-1992

Prop Idn: 3164 FC STATE COM.

Well No: 004

| U/L Sec | Range | Lot Idn | North/South | East/West |
|------------------|-------|---------|-------------|-------------|
| 36 | 31N | 09W | FTG 999 F S | FTG 999 F E |
| Surface Locn : H | | | | |
| OCD U/L : H | | | | |
| API County : 45 | | | | |

Work typ(N/E/D/P/A) : N Well typ(O/G/M/I/S/W/C) : G Cable/Rotary (C/R) : R
Lease typ(F/S/P/N/J/U/I) : S Ground Level Elevation : 99999

State Lease No: Multiple Comp (Y/N) : N
Prpsd Frmtn :

E0009:Enter data to modify record

PF01 HELP PF02 PF03 EXIT PF04 GOTO PF05 PF06 CONFIRM
PF07 PF08 PF09 COMMENT PF10 C102 PF11 HISTORY PF12

Attn: E. Busch

OIL CONSERVATION DIVISION
RECEIVED

RECEIVED MAR 8 89

P.O. Box 977
Farmington, New Mexico 87499
(505) 327-1639

February 22, 1994



BHP
Petroleum
(Americas) Inc

State of New Mexico
Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Re: Unorthodox Location, Administrative Approval Request
Gallegos Canyon Unit #529
West Kutz Pictured Cliffs
2119' FSL & 1398' FEL, Sec. 36, T29N, R12W, NMPN
San Juan County, New Mexico

RECEIVED

MAR 1 1994

Dear Sir:

OIL CON. DIV.

BHP Petroleum (Americas), Inc. respectfully requests that **DIST. 3**
non-standard location be administratively approved for the
Gallegos Canyon Unit #529.

The standard drilling windows for this location all fall within
the subdivided and residential developed area of the San Juan
Vista Subdivision. All areas within the orthodox drilling
windows are occupied by incompatible residential housing.

Amoco has an existing Dakota location, the GCU #162, located
in the NW $\frac{1}{4}$ of the proration unit. The pad size prohibits the
use as a shared location. There is existing housing to the
west and south and an EPNG pipeline to the east of this location.
As can be seen on Exhibit 3 of this application, BHP proposes
to locate our location just east and as close to the EPNG ROW
as practical. There is existing housing to the south,
eliminating any movement to the south. The landowner, Mrs.
David Burnham, has existing plans to subdivide and develop
the rest of this quarter section in the near future.

For both economic and mechanical reasons BHP does not consider
a directionally drilled well into the standard drilling windows
as a feasible alternative. Economically a directionally drilled
hole adds significant costs which cannot be justified by the
expected production. Mechanically, our experience has shown
that a rod pump may be required to assist in lifting water from
the PC and a directionally drilled well would greatly hinder
or prohibit this requirement.

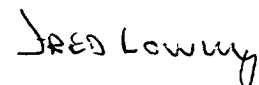
As shown on the Land Plat, Exhibit 1, BHP as the operator of
of the Gallegos Canyon Unit is the operator of production to
the north, west and south. Conoco Inc. operates to the NE and

BHP Petroleum (Americas), Inc.
Gallegos Canyon Unit #529
Unorthodox Location Request

SE. Clayton Investments operates to the northeast and Meridian operates to the east. Notice of this application has been sent to each of these parties.

Should you have any questions concerning this request, please feel free to contact me at (505) 327-1639.

Sincerely,

A handwritten signature in dark ink, appearing to read "Fred Lowery". The signature is written in a cursive, slightly slanted style.

Fred Lowery

PROPERTY MANAGEMENT & CONSULTING, INC.

P. O. BOX 2596

FARMINGTON, NEW MEXICO 87499-2596

(505) 325-5220

Mr. Fred Lowery
BHP Petroleum (Americas), Inc.
P.O. Box 977
Farmington, New Mexico 87401

February 22, 1994

Re: Narrative Report - Staking of Gallegos Canyon Unit #529

Dear Mr. Lowery:

Property Management and Consulting, Inc. conducted an onsite inspection of the potential locations for your Gallegos Canyon Unit #529 West Kutz Pictured Cliffs well. As a result of this inspection, the well has been staked non-standard at 2119' FSL & 1398' FEL, Sec. 36, T29N, R12W, San Juan County, New Mexico.

The standard drilling windows for this location are such that they all fall within the subdivided and developed area known as the San Juan Vista Subdivision. As shown on the enclosed San Juan County Land Plat of the SE $\frac{1}{4}$, Sec36, T29N, R12W (Exhibit No. 3), all areas within the orthodox drilling windows are occupied by incompatible residential housing.

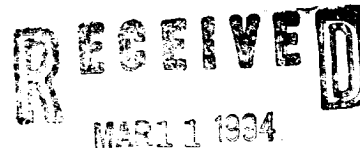
There is an existing Amoco Dakota location the GCU #162 in the NW $\frac{1}{4}$ of the proration unit. This pad could not be used for your GCU #529 well due to the limited size and the proximity of existing housing to the west and south and an EPNG pipeline to the east (See Enlarged Plat, Exhibit No. 3).

As a result, the well has been staked as close to the east side of the EPNG ROW and north side of the subdivided housing development as possible. The east edge of the pad is approximately 5' west of the future ROW for SJ County RD 5245. The well is 269' north and 52' east of the NE corner of the NW orthodox drilling window. Mr. Bob Stannard of Miller Engineers Inc. , representing landowner Mrs. David Burnham, has concurred with the selection of this site as being the most compatible with future subdivision plans.

Sincerely,



Charles Neeley
Petroleum Engineer

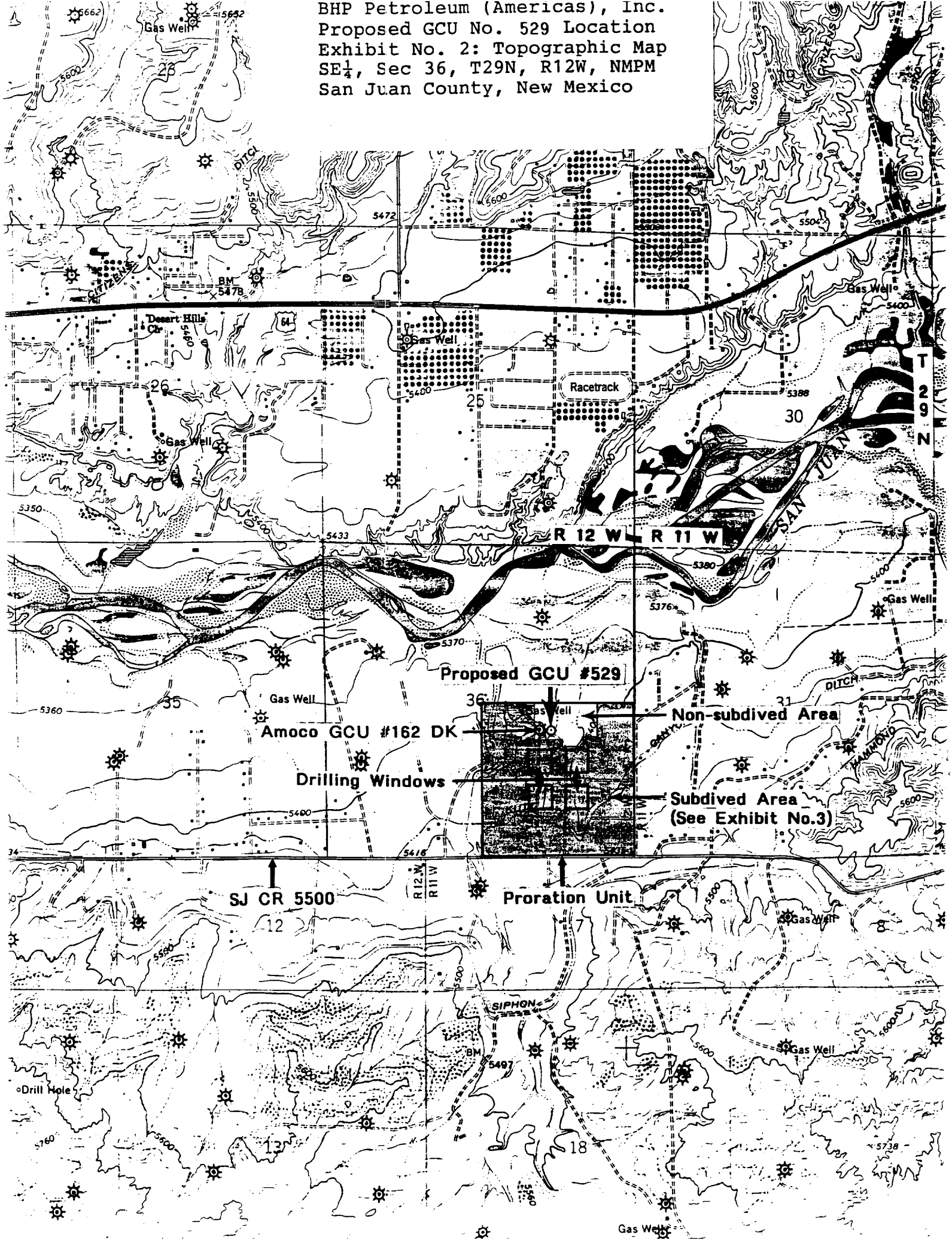


Gallegos Canyon Unit
Exhibit No. 1: Land Plat

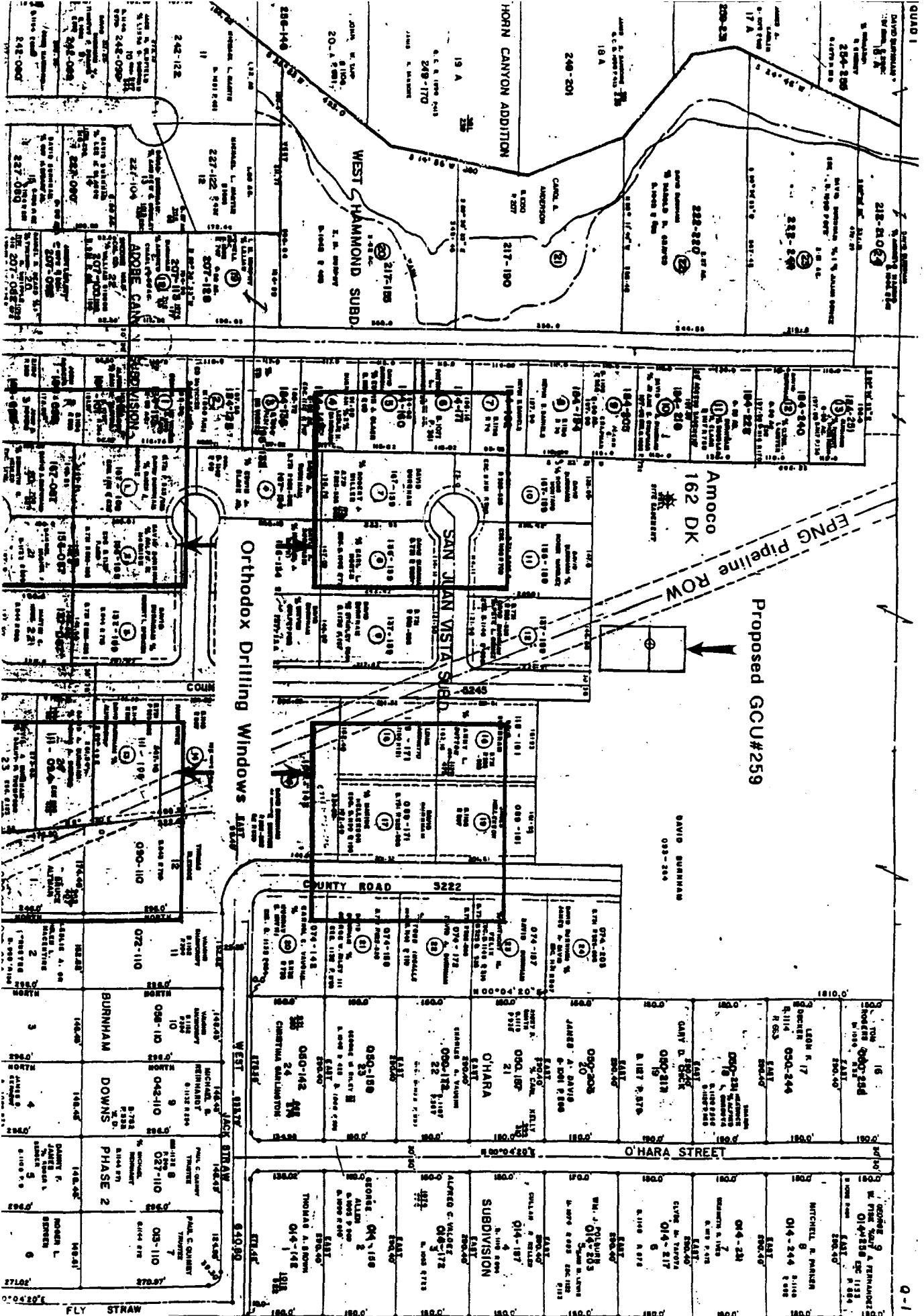


To the best of mu knowledge, this information is current and correct.
Signed: Joe Lowmy, BHP Petroleum (Americas), Inc.

BHP Petroleum (Americas), Inc.
Proposed GCU No. 529 Location
Exhibit No. 2: Topographic Map
SE $\frac{1}{4}$, Sec 36, T29N, R12W, NMPM
San Juan County, New Mexico



BHP Petroleum (Americas), Inc.
Exhibit No. 3: Enlarged Plat
SE $\frac{1}{4}$, Sec 36, T29N, R12W, NMPM
San Juan County, New Mexico



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 1-4-89

OIL CONSERVATION DIVISION

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

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

FEB - 9 1994

API NO. (assigned by OCD on New Wells)

30-045-29078

5. Indicate Type of Lease

STATE ☒

FEE ☐

6. State Oil & Gas Lease No.

K1277

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 ☐

SINGLE
ZONE ☒

MULTIPLE
ZONE ☐

7. Lease Name or Unit Agreement Name

Gallegos Canyon Unit

2. Name of Operator

BHP Petroleum (America's) Inc. 1217

8. Well No.

529

3. Address of Operator

P.O. Box 977 Farmington, NM 87499

9. Pool name or Wildcat

79680

West Kutz Pictured Cliffs

4. Well Location

Unit Letter J : 2119 Feet From The South Line and 1398 Feet From The East

Section 36

Township 29N

Range 12W

NMMPM

San Juan

County

10. Proposed Depth

1560'

11. Formation

Pictured Cliffs

12. Rotary or C.T.

Rotary

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

5390' GR

14. Kind & Status Plug. Bond

Blanket

15. Drilling Contractor

Aztec

16. Approx. Date Work will start

As soon as approve

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#K-55 | 330' | 85 | surface |
| 6-1/4" | 4 1/2" | 10.5#K-55 | 1560' | 198 | surface |

It is proposed to drill the subject well to 1545' with the primary production anticipated in the Pictured Cliff Formation.

Estimated Formation Tops:

This Approval

Expires 2-10-95

And Will Not Be

Extended

Ojo Alamo

120'

Kirtland

290'

Fruitland

1100'

Basal Fruitland Coal

1372'

Pictured Cliffs

1394'

TD

1560'

B.O.P.E. will consist of a 2000# Reagan bladder type preventor, pipe rams and blind ram B.O.P.E.

This is an unorthodox location. BHP will apply to the NMOC for administrative approval.

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 Fred Lowery TITLE Operations Superintendent DATE 02/07/94

TYPE OR PRINT NAME Fred Lowery TELEPHONE NO. 327-1639

(This space for State Use)

APPROVED BY Eric Busch DEPUTY OIL & GAS INSPECTOR, DIST. #3 DATE FEB 10 1994

CONDITIONS OF APPROVAL, IF ANY:

Hold C-104 for NSC

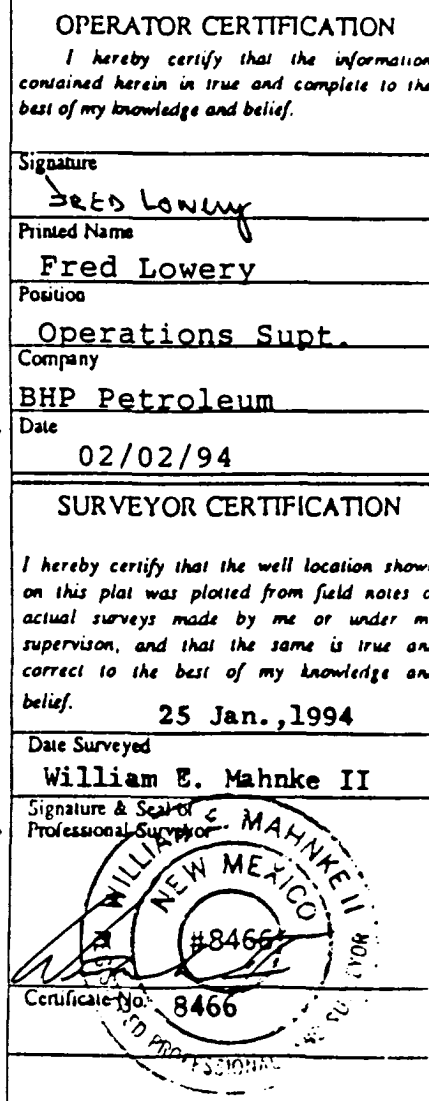
OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

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

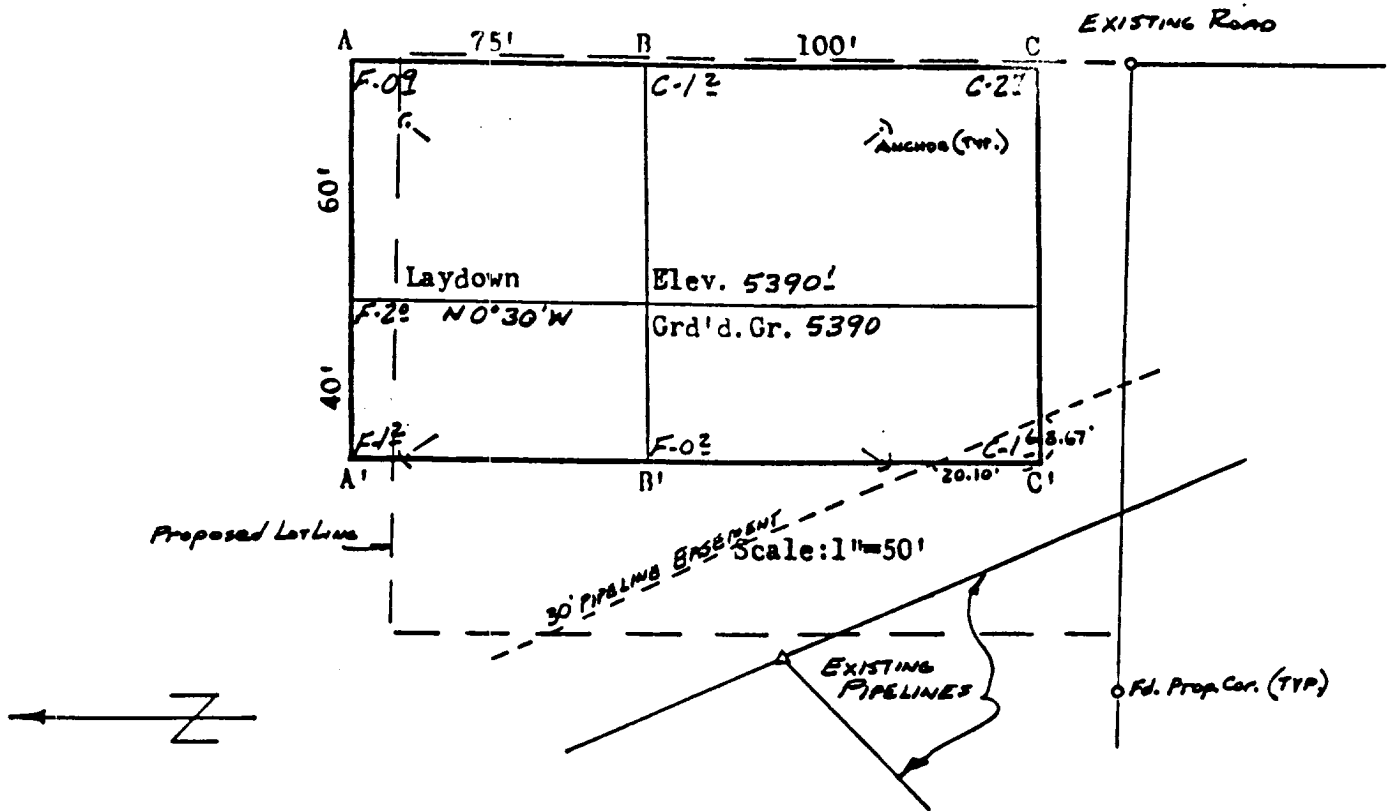
WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

330 660 990 1320 1650 1980 2310 2640 2000 1500 1000 500



BHP PETROLEUM (AMERICAS) INC.
 G.C.U. #529
 2119' FSL & 1398' FEL
 Sec. 36, T29N, R12W
 San Juan Co., N.M.



A-A' Vert.: 1" = 30' Horiz.: 1" = 100' C/L

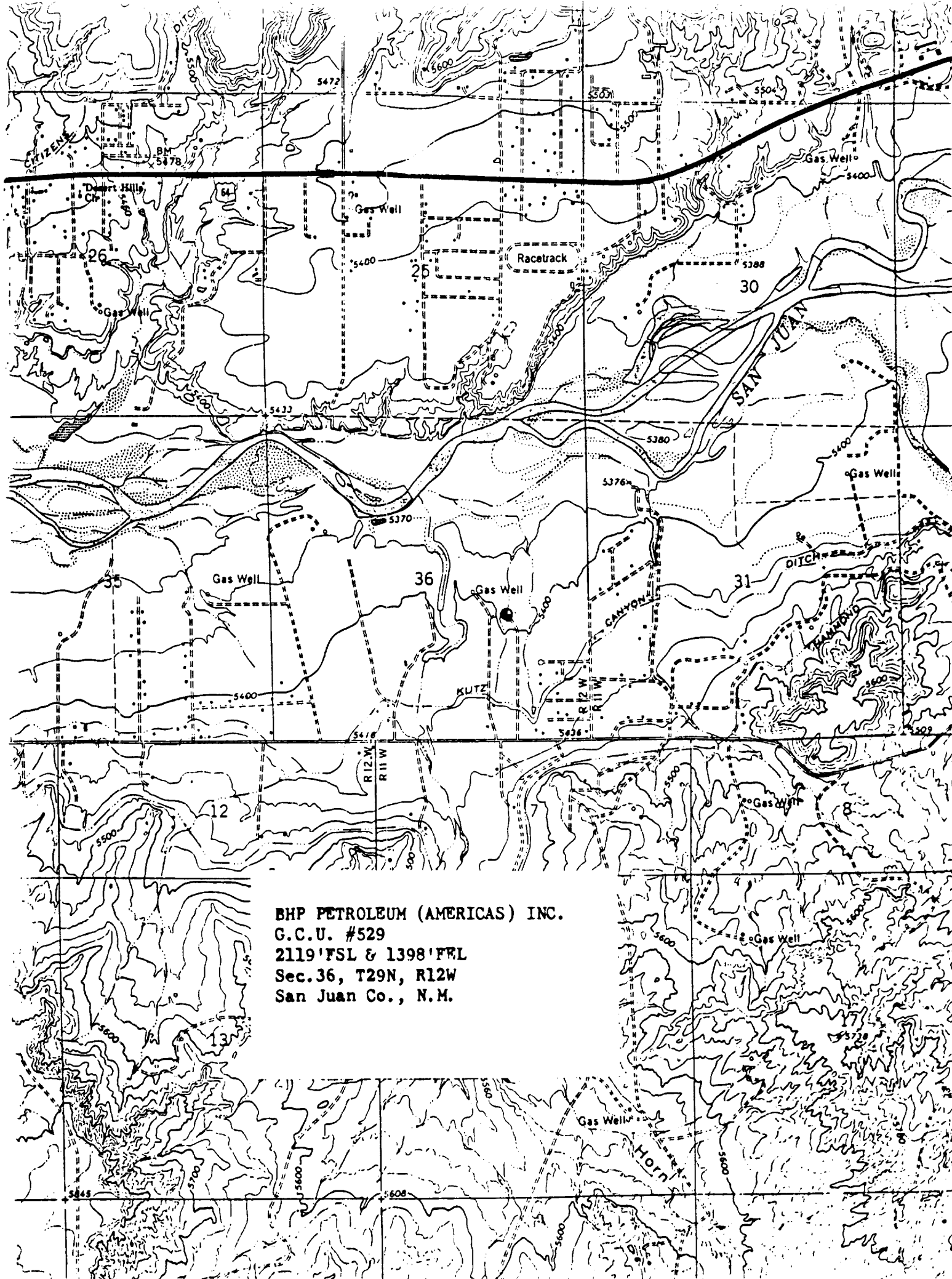
| | | | | | | |
|------|-----------|-----------|-----------|-----------|-----------|-----------|
| 5390 | - - - - - | - - - - - | - - - - - | - - - - - | - - - - - | - - - - - |
| 5380 | - - - - - | - - - - - | - - - - - | - - - - - | - - - - - | - - - - - |
| | - - - - - | - - - - - | - - - - - | - - - - - | - - - - - | - - - - - |

B-B'

| | | | | | | |
|------|-----------|-----------|-----------|-----------|-----------|-----------|
| 5390 | - - - - - | - - - - - | - - - - - | - - - - - | - - - - - | - - - - - |
| 5380 | - - - - - | - - - - - | - - - - - | - - - - - | - - - - - | - - - - - |
| | - - - - - | - - - - - | - - - - - | - - - - - | - - - - - | - - - - - |

C-C'

| | | | | | | |
|------|-----------|-----------|-----------|-----------|-----------|-----------|
| 5390 | - - - - - | - - - - - | - - - - - | - - - - - | - - - - - | - - - - - |
| 5380 | - - - - - | - - - - - | - - - - - | - - - - - | - - - - - | - - - - - |
| | - - - - - | - - - - - | - - - - - | - - - - - | - - - - - | - - - - - |



BHP PETROLEUM (AMERICAS) INC.
G.C.U. #529
2119'FSL & 1398'FRL
Sec.36, T29N, R12W
San Juan Co., N.M.

BHP PETROLEUM (AMERICAS) INC.
GALLEGOS CANYON UNIT #529
2119'FSL & 1398'FEL
Section 36 T29N R12W
SAN JUAN COUNTY, NEW MEXICO

TEN POINT PROGRAM

1. Surface Formation: NACIMIENTO

2. &

3. Estimated Formation Tops:

| <u>Formation</u> | <u>Top</u> | <u>Expected Production</u> |
|----------------------|------------|----------------------------|
| Ojo Alamo | 120' | |
| Kirtland | 290' | |
| Fruitland | 1100' | |
| Basal Fruitland Coal | 1372' | GAS |
| Pictured Cliffs | 1394' | GAS |
| TOTAL DEPTH | 1560' | |

4. Casing and Cementing Program: A string of 7" 20# K-55 ST&C casing will be set at \pm 330' in an 8 3/4" hole and cemented to the surface in a single stage with 85 sx of Class "B" cement (yield=1.18 cf/sk) containing 3% 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 8-3/4" by 7" annulus. Centralizers will be run on the bottom four joints across the Ojo Alamo. If boulders are encountered while drilling the surface hole, no centralizers will be run. Minimum clearance between couplings and hole is 1.094". Prior to drilling out the shoe, casing and BOPE will be tested to a minimum of 2000 psig. 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 4-1/2", 10.5# K-55 ST&C casing will be run from the surface to total depth in a 6-1/4" hole. This string will be cemented to the surface with a minimum of 148 sx of 50-50 pozmix containing 2% gel, 10% salt and 1/4 lb/sk celloflake (yield=1.26 cf/sk) followed by 50 sx of Class "B" cement containing fluid loss additive (yield=1.18 cf/sk). Slurry volume assumes a 50% excess over calculate hole volume. Cement volume is subject to change after review and recalculation of hole volume from the open hole calipers. If the primary cement job does not circulate to surface, the cement will be topped of using 1" pipe down the 6-1/4" by 4 1/2" annulus. Centralizers will be spaced such that a minimum of two are located above and two are located below the Basal Fruitland Coal. Minimum clearance between couplings and hole is 1.25"

Prior to perforating the casing for any attempted completion, the casing will be tested to a minimum of 2500 psig. 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 volummes and densities for each job will be submitted.

5. **Pressure Control Equipment:** (See attached schematic diagram.) A minimum of a 2M 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 2M psi. The annular preventor will be tested to 50% or 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 propertied 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 to be used for another well. The remaining accumulation of solids in the pit will be allowed to dry and then covered.

Mud program is as follows:

| <u>Interval (ft)</u> | <u>Mud Weight (ppg)</u> | <u>Viscosity (sec/qt)</u> |
|----------------------|-------------------------|---------------------------|
| 0 - 330 | 9.0+ | 40 - 50 |
| 330 - 1000 | 8.4+ | 30 - 38 |
| 1000 - TD | 9.3 or less | 40 - 55 |

7. **Auxiliary Equipment:** An upper kelly cock with handle available will be utilized. At a minimum, a flow sensor will be installed in the system and the mud volume will be visually monitored constantly.

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

Coring Program: No cores are planned

GALLEGOS CANYON UNIT #529
TEN POINT PROGRAM, continued

Testing Program: No tests are planned.

Stimulation Program: Perforate the Pictured Cliffs with 4 JSPF and fracture stimulate with approximately 3000 lbs of frac sand per foot of perforated interval in either a 70 quality nitrogen foam system or a cross-linked gelled water system.

9. **Abnormal Pressure:** A possible water flow is expected in the Ojo Alamo. Although not expected, abnormal pressures are possible in the Farmington sand of the Kirtland formation.

Estimated Bottom Hole Pressure: 600 psig.

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

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

