5847 San Felipe Suite 3600
Houston, Texas 77057
Telephone: (713) 780-5000
Fax (713) 780-5273
Telex 9108813603

Copy sent to E. Busch
9/11/90

September 5, 1990

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 #511
NW 1/4 NW 1/4 Sec. 26 T29N R12W
San Juan County, New Mexico

Gentlemen:

BHP Petroleum respectfully requests that a non standard location be administratively approved to allow the GCU #511 well to be drilled 745' FNL and 1080' FWL to be completed in the Pictured Cliffs formation.

The non standard location is requested due to topographical reasons. A standard location is not possible due to residential dwellings, a state highway and power lines going to Amoco's existing well.

The subject location is immediately adjacent to the existing Amoco well location #145-E producing from the Dakota formation.

The operator of the offsetting proration unit outside of the unit boundary is Texaco, Inc.. Texaco, Inc. has been notified of this request via certified mail, return receipt requested.

Please do not hesitate to contact me if you have any questions.

Sincerely,

Chuck Williams

Chuck Williams
Field Services Administrator

Chuck

Form 3160-3
(November 1983)
(formerly 9-331C)

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0136
Expires August 31, 1985

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

5. LEASE DESIGNATION AND SERIAL NO.: SF 079907

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1a. TYPE OF WORK
DRILL [XX] DEEPEN [ ] PLUG BACK [ ]

7. UNIT AGREEMENT NAME: Gallegos Canyon Unit

b. TYPE OF WELL
OIL WELL [ ] GAS WELL [X] OTHER SINGLE ZONE [X] MULTIPLE ZONE [ ]

8. FARM OR LEASE NAME: Gallegos Canyon Unit

2. NAME OF OPERATOR: BHP Petroleum (Americas) Inc.

9. WELL NO.: 511

3. ADDRESS OF OPERATOR: 5847 San Felipe Suite #3600 Houston, Texas 77057-9972

10. FIELD AND POOL, OR WILDCAT: W. Kutz Pictured Cliffs

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: NW NW
At proposed prod. zone:

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 26 T29N R12W

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: Approximately 5 miles southeast of Farmington, New Mexico

12. COUNTY OR PARISH: San Juan

13. STATE: NM

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any): 745' from unit boundary

16. NO. OF ACRES IN LEASE: 2,561.19

17. NO. OF ACRES ASSIGNED TO THIS WELL: 160

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.: <150'

19. PROPOSED DEPTH: 1595'

20. ROTARY OR CABLE TOOLS: Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 5455' GR

22. APPROX. DATE WORK WILL START*: Fall 1990

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
8 3/4"	7"	20#	±130	50 sx (57.5 cu. ft)
6 1/4"	4 1/2"	10.5#	±1595	201 sx (248 cu. ft)

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. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED Chuck Williams Chuck Williams TITLE Field Services Administrator DATE 8/17/90

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

***See Instructions On Reverse Side**

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

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

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

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

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

Form C-102
Revised 1-1-89

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator	Lease	Well No.
BHP Petroleum (Americas) Incorporated	Gallegos Canyon Unit	511

Unit Letter	Section	Township	Range	County
D	26	29N	12W NMPM	San Juan

Actual Footage Location of Well:
745 feet from the North line and 1080' feet from the West line

Ground level Elev.	Producing Formation	Pool	Dedicated Acreage:
5455'	Pictured Cliffs	W. Kutz Pictured Cliffs	160 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

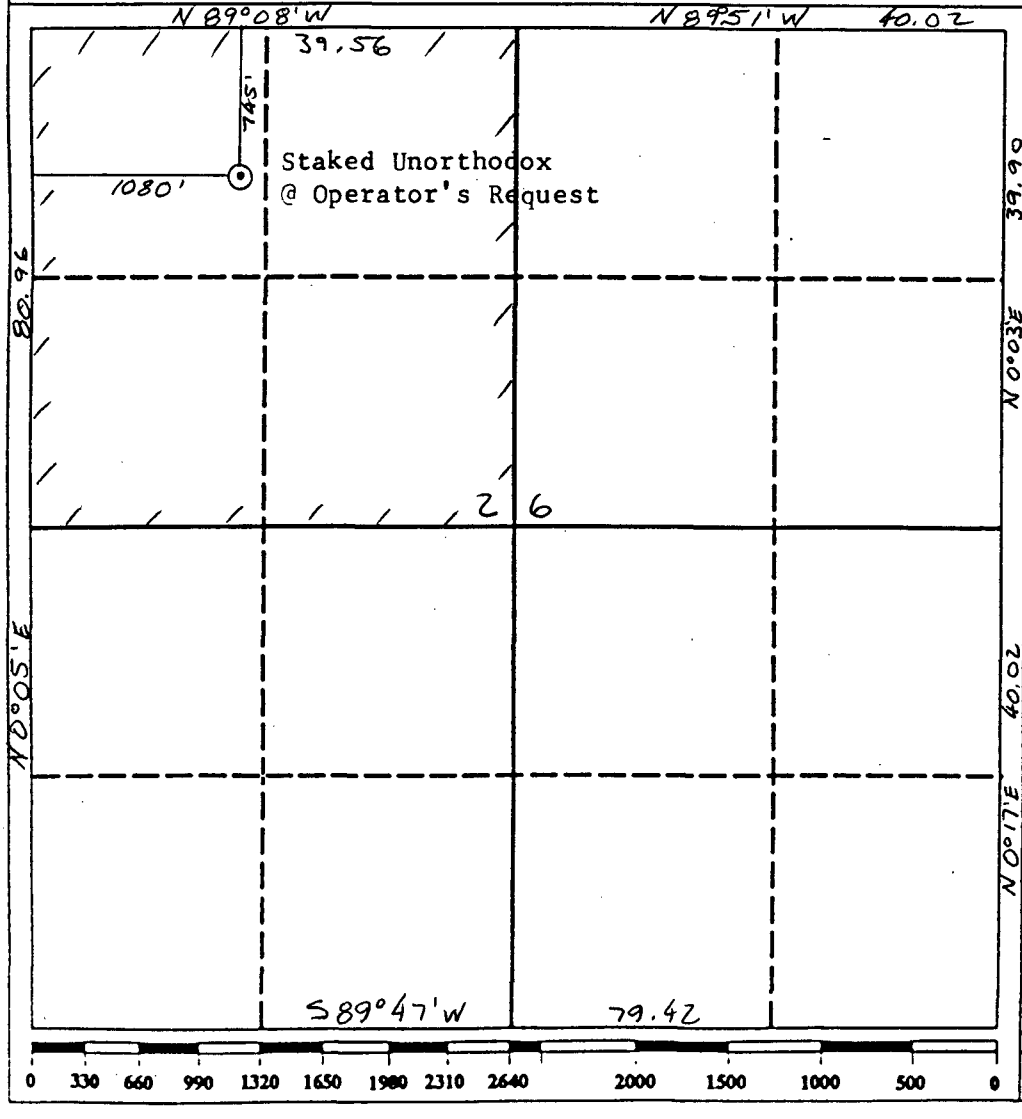
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

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.?

☐ 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.



OPERATOR CERTIFICATION

I hereby certify that the information contained herein in 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: 8/17/90

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 supervison, and that the same is true and correct to the best of my knowledge and belief. 8-06-90

Date Surveyed: Roy A. Rush

Signature & Seal of Professional Surveyor: ROY A. RUSH, NEW MEXICO, 8894, REGISTERED PROFESSIONAL LAND SURVEYOR

Certificate No. 8894

BHP PETROLEUM (AMERICAS) INC.
GALLEGOS CANYON UNIT NO. 511
745' FNL & 1080' FWL SECTION 26 T29N-R12W
SAN JUAN COUNTY, NEW MEXICO
TEN POINT PROGRAM

1. **Surface Formation:** Nacimiento or valley fill

2 &
3. **Estimated Formation Tops:**

Formation	Top	Expected Production
Ojo Alamo	259	
Kirtland	324	
Fruitland	1105	
Basal Fruitland Coal	1430	Gas
Pictured Cliffs	1445	Gas
Total Depth	1595	

4. **Casing and Cementing Program:** A string of 7" 20# K-55 casing with ST&C couplings is to be set at ±130' in an 8 3/4" hole and cemented to the surface in a single stage with 50 sx Class 'H' cement (yield = 1.15 ft^3/sx) containing 3 % $CaCl_2$ and ¼ #/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 4½" 10.5# K-55 casing with ST&C couplings will be run from the surface to total depth in a 6¼" hole. This string will be cemented to the surface with a minimum of 151 sx of 50-50 pozmix containing 2 % gel, 0.5 % fluid loss additive and ¼ #/sx celloflake (yield = 1.26 ft^3/sx) followed by 50 sx of Class 'G' cement containing low fluid loss additives (yield = 1.15 ft^3/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 Aloma 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:

Interval (feet)	Mud Weight (#/gal)	Viscosity (sec/qt)
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.

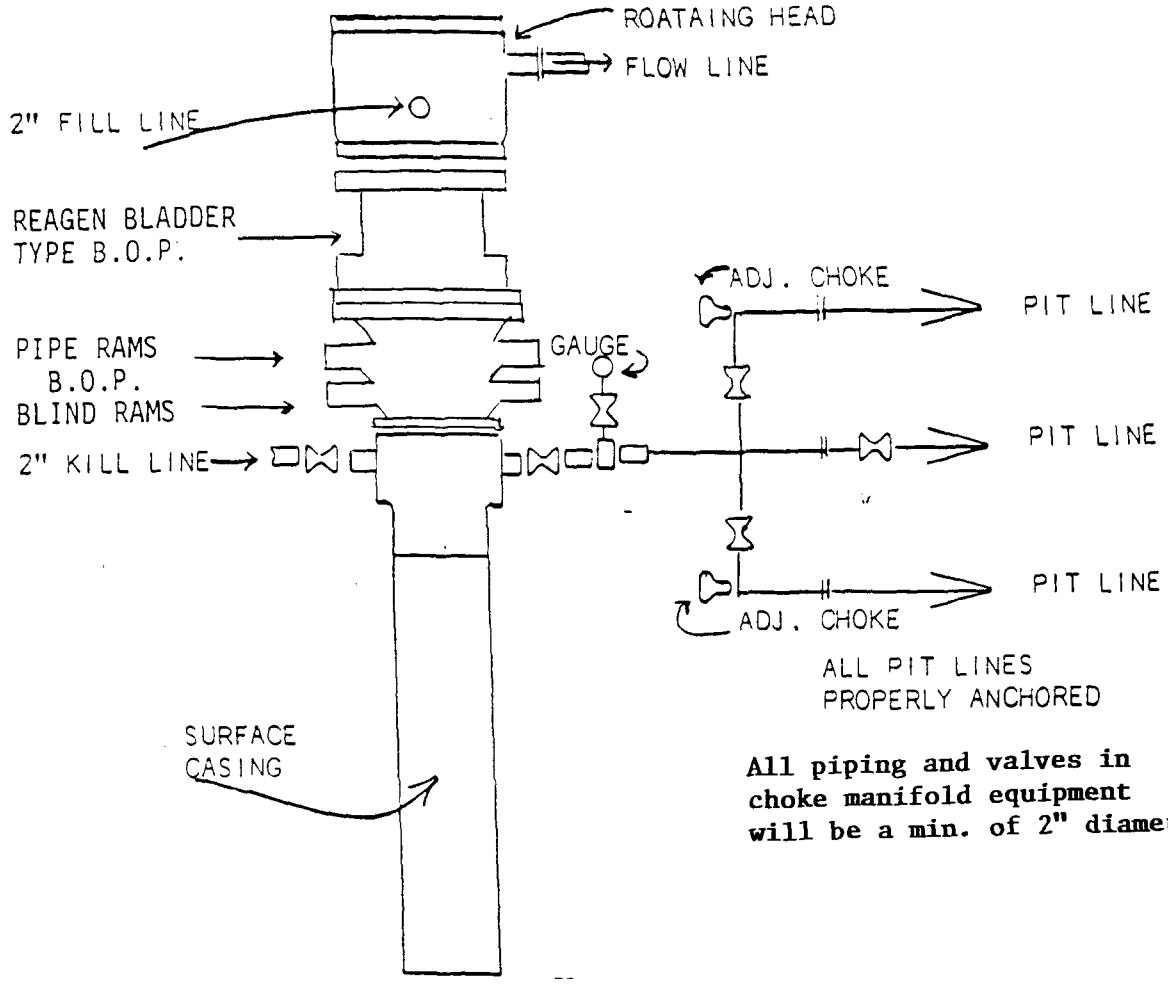
9. **Abnormal Pressure:** Although not expected, abnormal pressures are possible in the Farmington Sands of the Kirtland Formation.

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.

2M SYSTEM



All piping and valves in choke manifold equipment will be a min. of 2" diameter.