District I
PO Box 1980, Hobbs, NM 88241-1980
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

Form C-101
Revised October 18, 1994
Instructions on back
Submit to Appropriate District Office
State Lease - 6 Copies
Fee Lease - 5 Copies

☐ AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

RECEIVED
DEC - 7 1995
OIL CON. DIV.
DIST. 3

[1] Operator Name and Address.	[2] OGRID Number
BHP Petroleum (Americas) Inc. P. O. Box 977 Farmington, New Mexico 87499	2217
	[3] API Number 30 - 045 - 29325

[4] Property Code	[5] Property Name	[6] Well No.
2038	Gallegos Canyon Unit	543

[7] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	36	29N	12W		1190	North	1750	East	San Juan

[8] Proposed 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

[9] Proposed Pool 1	[10] Proposed Pool 2
79680 West Kutz Pictured Cliffs EXT 160	

[11] Work Type Code	[12] Well Type Code	[13] Cable/Rotary	[14] Lease Type Code	[15] Ground Level Elevation
N	G	R	S	5364 '
[16] Multiple	**[17] Proposed Depth**	**[18] Formation**	**[19] Contractor**	**[20] Spud Date**
N	1600 '	Pictured Cliffs	NA	As soon as approved

[21] Proposed Casing and Cement Program

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
12.250 "	9.625 "	36	30 '	25 - 29.5 cf	surface
8.750 "	7.000 "	20	375 '	100 - 118 cf	surface
6.250 "	4.500 "	10.5	1600 '	220 - 273.2 cf	surface

[22] Describe the proposed program. If this application is to DEEPEN or PLUG BACK give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary.

BHP Petroleum (Americas) Inc. proposes to spud in the Nacimiento Formation. Drill a 12 1/4" hole to 30 '. Run and cement conductor pipe with cement returns to surface. WOC 12 hrs. Drill an 8 3/4 " hole to 375 '. Run and cement surface casing with cement returns to surface. WOC 12 hrs. Test casing and BOPE to 600 psi for 15 mins. Drill a 6 1/4 " hole to a TD of 1600 ' using fresh water mud. No abnormal pressure or poisonous gas is anticipated. Adequate weight material will be on location to control any unforeseen flows from the Farmington sands. Run logs at TD. Run and cement production casing with cement returns to surface. WOC 12 hrs. Run cased hole correlation logs, test casing to 2500 psig, perforate and stimulate Pictured Cliffs using a fresh water base gel or foam system.

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

Signature:
Printed name: J. C. Harris
Title: Operations Superintendent
Date: 12/5/95
Phone: (505) 327-1639

OIL CONSERVATION DIVISION

Approved by: 12-11-95
Title: SUPERVISOR DISTRICT # 3
Approval Date: DEC 11 1995 Expiration Date: DEC 11 1996
Conditions of Approval :
Attached ☐

District I
PO Box 1980, Hobbs, NM 88241-1980
District II
PO Drawer DD, Artesia, NM 88211-0719
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

Form C-102
Revised February 21, 1994
Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-045-29325	79680	West Kutz Pictured Cliffs EXT

[4] Property Code	[5] Property Name	[6] Well Number
2038	GALLEGOS CANYON UNIT	543

[7] OGRID No.	[8] Operator Name	[9] Elevation
2217	BHP PETROLEUM (AMERICAS) INC.	5364

[10] Surface Location

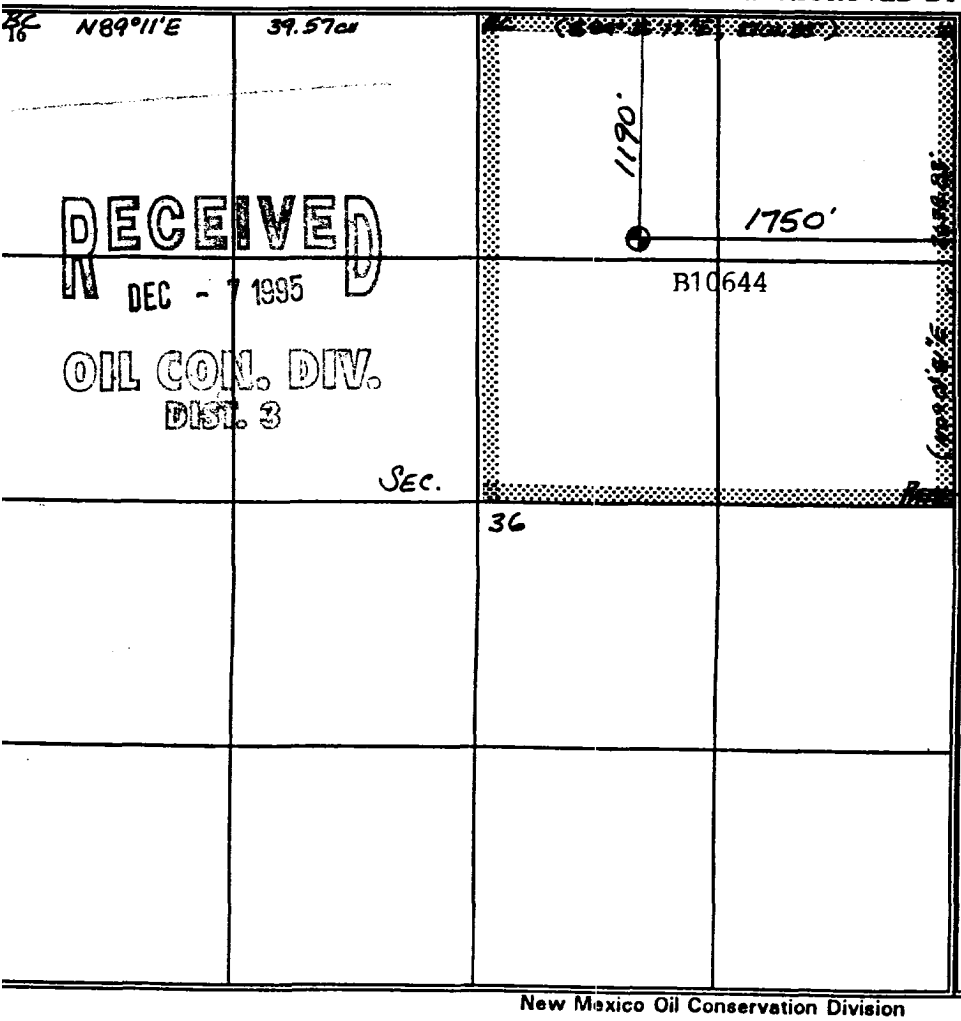
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	36	29 N	12 W		1190	North	1750	East	San Juan

[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	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
160		U	

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



RECEIVED
DEC - 7 1995
OIL CON. DIV.
DIST. 3

[17] OPERATOR CERTIFICATION

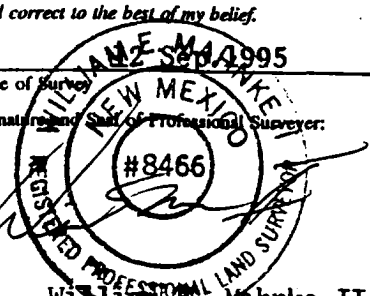
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief

Signature
J. C. Harris
Printed Name
Operations Superintendent
Title
12/5/95
Date

[18] SURVEYOR CERTIFICATION

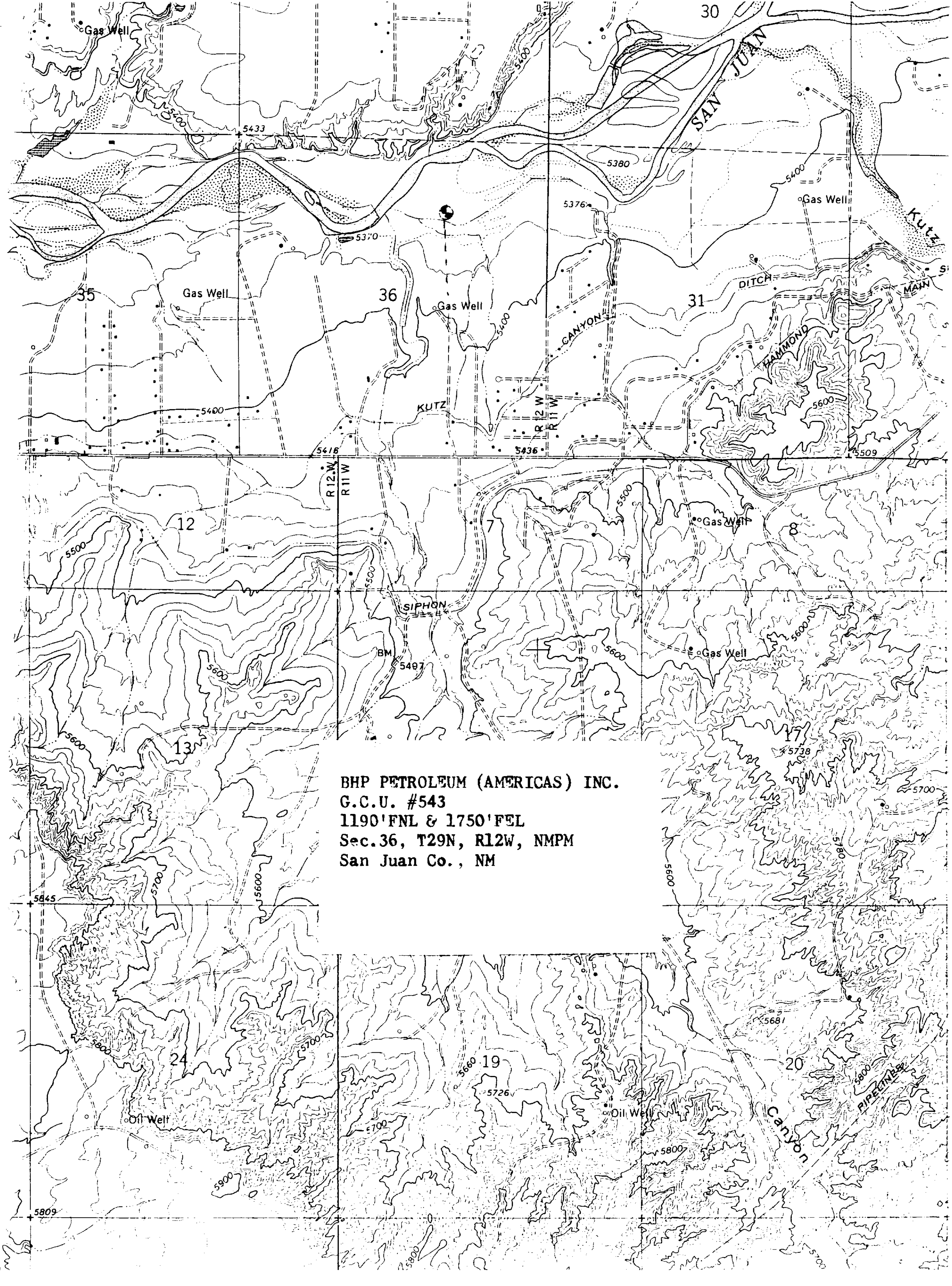
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date of Survey: AUGUST 24, 1995
Signature and Seal of Professional Surveyor:



William E. Mahnke II
Certificate Number 8466

New Mexico Oil Conservation Division


BHP PETROLEUM (AMERICAS) INC.
G.C.U. #543
1190'FNL & 1750'FEL
Sec.36, T29N, R12W, NMPM
San Juan Co., NM
SAN JUAN
Kutz
KUTZ
CANYON
HAMMOND
DITCH
MAIN
SIPHON
Canyon
PIPELINES
Gas Well
Oil Well
R 12 W
R 11 W
BM
5497
30
35
36
31
12
7
8
13
17
24
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5433
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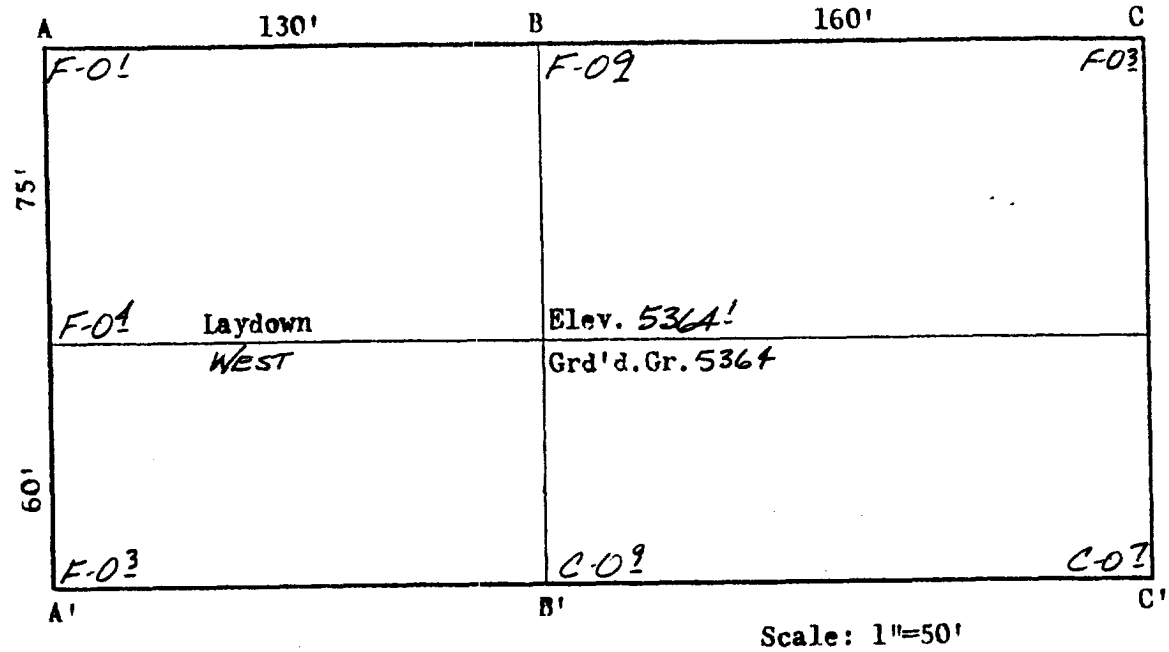
5681
5726
5660
5800
5900
5809

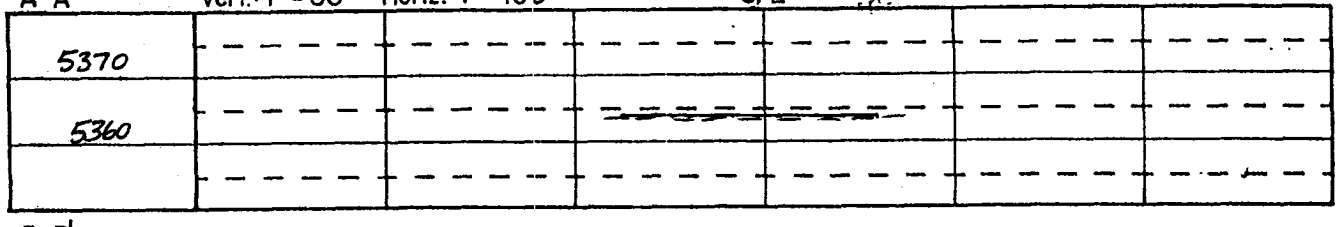
BHP PETROLEUM (AMERICAS) INC.
G.C.U. #543
1190'FNL & 1750'FEL
Sec.36, T29N, R12W, NMPM
San Juan Co., NM



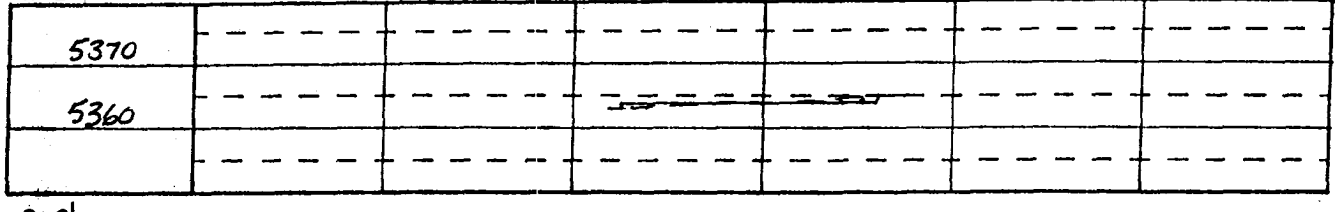
Scale: 1"=50'

162E

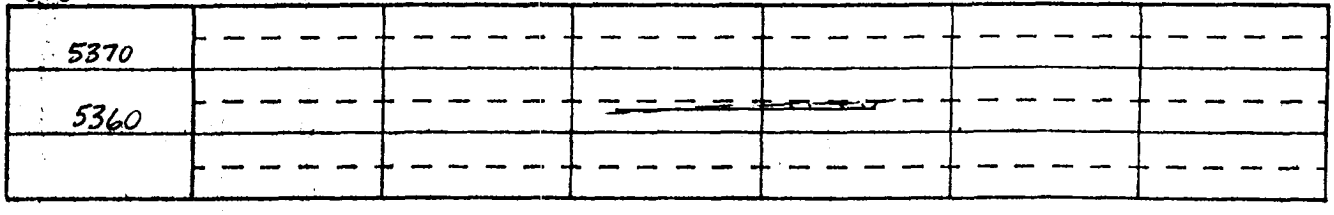
A-A' Vert.: 1" = 30' Horiz.: 1" = 100' C/L



B-B'



C-C'



BHP PETROLEUM (AMERICAS) INC.
GALLEGOS CANYON UNIT NO. 543
1190 ' FNL - 1750 ' FEL, Section 36, T29N, R12W
San Juan County, New Mexico

TEN POINT PROGRAM

1.) Surface Formation: NACIMIENTO

2.) Estimated Formation Tops:

Formation	Top	Expected Production
Ojo Alamo	175'	
Kirtland	325'	
Fruitland	1075'	
Basal Fruitland Coal	1380'	Gas
Pictured Cliffs	1400'	Gas
TD	1600'	

3.) Casing and Cementing Program: A string of 9 " or 9 5/8 " casing will be set at 30 ' in a 12 1/4 " hole and cemented with adequate cement to bring cement in the annulus to surface.

A string of 7 ", 20 ppf, K - 55, ST & C casing will be set at 375 '± in an 8 3/4 " hole and cemented to the surface in a single stage with 100 sacks of Class B cement (yield = 1.18 cf/sk) containing 3 % $CaCl_2$ and ¼ lb/sk celloflake. Slurry volume assumes 100 % excess over calculated hole volume. If the cement does not circulate to surface, cement will be topped off through 1 " pipe run in the 8 3/4 X 7 " annulus. Centralizers will be run on the bottom two joints if boulders are not encountered while drilling the surface hole. If boulders are encountered, no centralizers will be run. Minimum clearance between the couplings and the hole is 1.094 ". Safety factors used in the casing design were: Burst = 1.1; Collapse = 1.125; and Tension = 1.80 or 100,000 lb overpull, whichever is greater.

A production string of 4 ½ ", 10.5 ppf, K - 55, ST & C casing will be run from surface to total depth in a 6 ¼ " hole. This string will be cemented to the surface with a minimum of 170 sacks of 50 - 50 Pozmix containing 2 % gel, 10 % salt, and ¼ lb/sk celloflake (yield = 1.26 cf/sk) followed by 50 sacks Class B containing fluid loss additive (yield = 1.18 cf/sk). Slurry volume assumes 50 % excess over calculated hole volume. The cement volume is subject to change after review and recalculation of the hole volume from the open hole caliper logs. If the cement does not circulate to the surface a cement bond log will be run to determine the top of the cement. A decision to squeeze cement to surface will be made at that time. Centralizers will be spaced such that a minimum of two are located above and two are located below the Basal Fruitland Coal and a minimum of one centralizer will be run below the base and another into the base of the Ojo Alamo. Minimum clearance between the couplings and the hole is 1.25 ". Safety factors used in the casing design were: Burst = 1.1; Collapse = 1.125; and Tension = 1.8 or 100,000 lb overpull, whichever is greater.

A sundry notice with details of the casing run and the cement volumes and densities will be submitted following each job.

The production casing will be pressure tested to a minimum of 2500 psig prior to perforating.

4.) Pressure Control Equipment: (See attached schematic diagram) A minimum of 2000 psi working pressure BOP well control system will be utilized. BOP's, rotating head, and choke manifold will be installed and pressure tested to 600 psig for 15 minutes before drilling out the surface casing shoe. The pipe rams will be operated daily and the blind rams on each trip to insure proper mechanical function.

A diverter head capable of holding a stripping rubber will be installed on the conducter casing in case a water flow is encountered in the Ojo Alamo. The diverter line will conduct any water encountered to the steel pits. No gas is anticipated.

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

5.) 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 control any unforeseen lost circulation problems or abnormal pressure in the Farmington sands within the Kirtland Formation. All drilling fluids will be contained in a lined earthen pit or steel tanks if the wellsite location dictates a closed system is necessary. At completion of the drilling operation, the drilling fluid will be hauled off to be used in another well, The remaining solids accumulation will be allowed to dry and then covered.

Interval - ft.	Mud Weight - ppg	Viscosity - sec/qt.
0 -1000 '	8.4 - 8.6 or less	30 - 38
1000' - TD	9.3 or less	40 - 55

6.) 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.

7.) Logging Program: SP - DIL and GR - FDC - CNL logs will be run from TD to the surface casing shoe depth.

8.) Coring Program: No cores are planned.

Testing Program: No tests are planned.

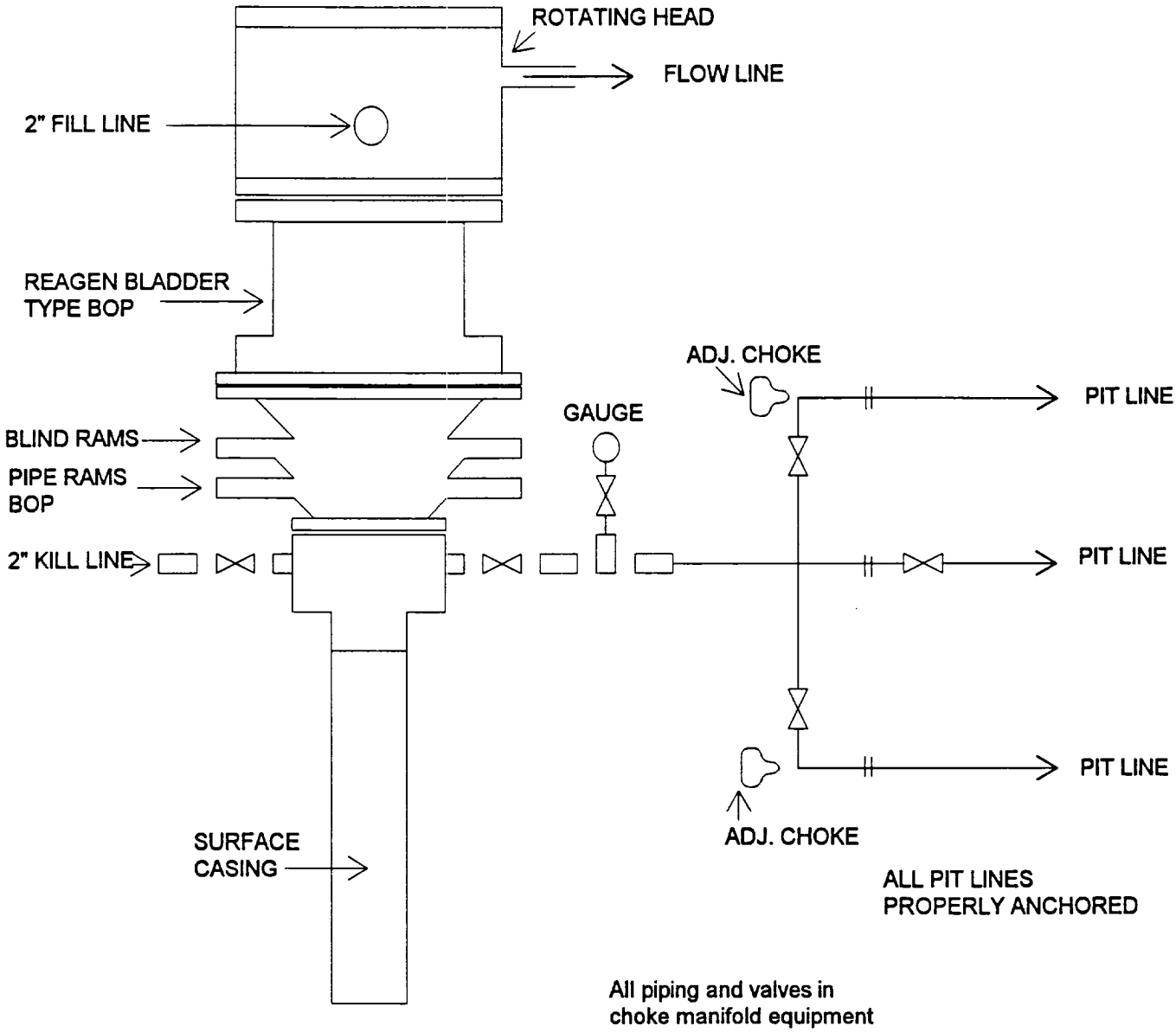
Stimulation Program: Perforate Pictured Cliffs with 4 JSPF and fracture stimulate with approximately 3000 lbs. of frac sand per foot of perforated interval in either a 70 quality nitrogen foam or a cross - linked gel water system.

9.) Abnormal Pressures: Although not expected, abnormal pressures are possible in the Farmington sands of the Kirtland Formation.
Estimated Bottom Hole Pressure: 400 psig.
Water Flow: A water flow is possible in the Ojo Alamo.

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

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

2M SYSTEM



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