Mike,

Per our telephone conversation January 9, 1992, attached is a copy of our administrative filing for "Tight" Sand certification with Texas Railroad Commission approval, forwarded to FERC, and they have approved.
This is an example of the type Texas Railroad Commission requires for Administrative filings in Texas.

Hope it helps.

Jim Allen

J. C. (Jim) Allen
Proration and Unitization Manager

Amoco Production Company
Southeast Business Unit
501 WestLake Park Boulevard
Post Office Box 3092
Houston, Texas 77253-3092
Regulatory Affairs Department
713-556-3931

Amoco Production Company
Southeast Business Unit
501 WestLake Park Boulevard
Post Office Box 3092
Houston, Texas 77253-3092

James F. Trickett
Manager, Environmental Safety & Regulatory Affairs

September 2, 1991

Ms. Dianne Simmons
Director, NGPA Section
Oil and Gas Division
Railroad Commission of Texas
P. O. Drawer 12967, Capitol Station
Austin, Texas 78711-2967

File: JCA-986.51

Dear Ms. Simmons:

Application for Tight Formation Gas Designation
Prospero Area, Duval County, Texas

Amoco Production Company respectfully requests the Railroad Commission of Texas consider its application for tight formation gas designation for wells in the Prospero Area of Duval County, Texas. Amoco makes this application for the Fandango Formation sands as a working interest owner in the Bishop Cattle Company Well No. 1 and on behalf of BHP Petroleum (Americas), Inc. (BHP), the operator of the well. The attached letter of August 22, 1991, from Mr. Scott H. Cornwell of BHP assigns Amoco responsibility for filing this application. Attached are three copies of the documentation and exhibits which prove the Fandango Formation sands in the Prospero Area exhibit tight formation characteristics.

Any inquiries regarding this application may be directed to Bruce Rowley of our Regulatory Affairs staff at the letterhead address or by phone at (713) 556-2190.

Yours very truly,

James F. Trickett

Attachments

Mr. Ron D. Campbell
BHP Petroleum (Americas), Inc.
5847 San Felipe, Suite 3600
Houston, Texas 77057

D. R. Currens - 5.170
K. M. Jacobson - 24.190
S. L. Bishop - 3.304

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

August 22, 1991

BHP Petroleum
Americas) Inc

Texas Railroad Commission
Diane Simmons NGPA
P.O. Drawer 12967, Capitol Station
Austin, Texas 78711-2967

RE: Application for Tight Sand Gas Designation
Prospero Second Hinnant Field Area
Duval County, Texas

Dear Ms. Simmons:

This letter is written to notify the Texas Railroad Commission that BHP Petroleum (Americas) Inc., as Operator of the Bishop Cattle Company Well #1 hereby designates Amoco Production Company as the party responsible for filing an application for Tight Sand Gas Designation for the Prospero Field Area, Duval County, Texas. Therefore, Amoco Production Company, as a joint interest owner with BHP Petroleum (Americas) Inc. in said well and area, shall be responsible for filing the application on behalf of both parties.

Very truly yours,

BHP PETROLEUM (AMERICAS) INC.

Scott H. Cornwell
Land/Regulatory Manager
Gulf Basin Business Unit

SHC/JRT/mw
91-608

Prospero Tight Gas Application
List of Exhibits.

Exhibit 1.	South Texas Base Map showing location of Prospero Area.
Exhibit 2.	1" = 2000' Base Map showing area requested for tight gas formation designation.
Exhibit 3.	Tabulation of Survey Names within area.
Exhibit 4.	1" = 2000' Structure Map and location of Cross Section A-A'.
Exhibit 5.	Stratigraphic Cross Section A-A'.
Exhibit 6.	Well Test Data Sheet (10,892 to 11,060 ft.)
Exhibit 7a.	Gas Well Back Pressure Graph
Exhibit 7b.	AOF Calculation
Exhibit 8.	Semilog Plot
Exhibit 9.	Semilog Type Curve Match
Exhibit 10.	Well Test Data Sheet (10,520 to 10,612 ft.)
Exhibit 11a.	Gas Well Back Pressure Graph
Exhibit 11b.	AOF Calculation
Exhibit 12.	Reservoir Data Sheet (10,892 to 11,060 ft.)
Exhibit 13.	Reservoir Data Sheet (10,512 to 10,620 ft.)
Exhibit 14.	Log Calculation Sheet
Exhibit 15a.	TWC Surface Casing Letter (Form TWC-0051)
Exhibit 15b.	Proposed Casing and Cementing Record for Bishop Cattle Co. Well No. 1.
Exhibit 15c.	RRC Approval of Casing and Cementing Record

GEOLOGIC DISCUSSION

The Prospero Area is located within the South Texas Fandango trend in western Duval County. Exhibit 1 is a location map of the Prospero area. Prospero is located due west of Northwest Rosita Field and north of Destino Field, both of which produce hydrocarbons from various sands within the Fandango Formation. The Fandango is part of the Upper Wilcox (Eocene in age) which was deposited in a shallow water, wave-dominated deltaic complex consisting of stacked distributary mouth bars. Due to the rapid deposition of the Fandango deltaic complex, contemporaneous faulting occurred resulting in an overall thickening of the Fandango downthrown to these faults. Prospero itself is located upthrown to one of these growth faults, while Northwest Rosita and Destino fields are located downthrown.

Exhibit 2 is a 1" = 2000' scale map showing the Prospero Area. The requested tight gas area is enclosed in the red box and encompasses approximately 8,400 acres. The map shows all wells deeper than 7500'. The majority of these wells penetrate the Wilcox section. Exhibit 2 also shows the location of Northwest Rosita and Destino fields.

Exhibit 3 is a tabulation of surveys and abstract numbers within the red box shown on Exhibit 2.

Exhibit 4 is a 1" = 2000' scale structure map of the Prospero Area. Contour interval on the map is 100'. The requested tight gas area is also shown in the red box. Wells posted on the map are deeper than 7500'. The Prospero fault block is a southwest to northeast trending feature located upthrown to Fault A and downthrown to Fault B. Wells penetrating the Fandango in this block are shown on cross section A-A' (Exhibit 5). No wells are currently producing from the Fandango in this fault block.

Exhibit 5 is a SW to NE stratigraphic cross section (A-A') hung from the top of the Fandango. Vertical scale on the cross section is 1" = 100' and horizontal scale is 1" = 1000'. The location map for the cross section is shown in the lower right portion of the display. The scale of the location map is 1" = 2000'. From SW to NE the wells that penetrate the Fandango are the Columbia #1 Lincoln National Bank, the BHP/Amoco #1 Bishop Cattle Co., and the Ultramar #1 William Hubberd. For each well, the subsea top of the Fandango is posted to the left of each well. The section requested for tight gas designation is that portion stratigraphically equivalent to 10,370' - 12,000' in the BHP/Amoco #1 Bishop Cattle Co. well in the Prospero Area. The depth at 12,000' was chosen because it is possible that the sandy zone at 11,830-60' in the BHP/Amoco well may be thicker in subsequent wells, and therefore a potential completion candidate.

Individual sand correlations have been made from the BHP/Amoco Bishop Cattle Co. well to the Ultramar well in the unexpanded portion of the Fandango. These correlations were projected across to the expanded portion of the Fandango in the Columbia Gas well. Fault A was not shown on this cross section since it cuts above the Fandango in the BHP/Amoco well and below the Fandango in the Columbia well. Fault B1 was not shown on this cross section because it is a minor fault and cuts out only the top of the Fandango in the Ultramar well. (Equivalent zone 10,370'-10,450' in the BHP/Amoco well).

Each well on the cross section tested some part of the Fandango, but no well is currently producing hydrocarbons from the Fandango. In the Columbia Gas well, the top of the Fandango was perforated at 10,708'-10,757' on 1-22-91. No flow was reported, and SITP was only 2200 PSI. There were no other reported tests in the Fandango in this well. This zone was abandoned, and other shallower zones were tested in the well. Ultimately, the well was plugged and abandoned on 3-4-91. The tested zone in the Columbia Gas well correlates with the top of the Fandango in the BHP/Amoco well at 10,370'-10,400'. This zone was not tested in the BHP/Amoco well.

The BHP/Amoco Bishop Cattle Co #1 reached a total depth of 13,500' on 5-15-91. Several zones in the Fandango were tested. On 6-1-91, two of the lowermost sands were tested through perforations from 10,892-955' and 11,040-60'. These zones were tested together with a maximum flow rate of 169 MCFGD, O BBLS water, O BBLS oil on 6/64" choke with FTP 1030 psi. These 2 zones were tested a total of 56 hours before they were abandoned. Two more zones were tested in the Fandango at 10,520-538'; 10,592-612' on 6-26-91. These 2 zones tested together with a maximum flow rate of 72 MCFGD, 0 BBLS water, 0 BBLS oil, on an open choke with FTP 685 psi.

In the Ultramar #1 Hubberd, several zones were tested in the Fandango: (10,496'-10,526'; 10,566'-10,574'; 10,958'-10,972'). The perfs at 10,496'-10,526' flowed a trace of gas and condensate. Our scout reports indicated that Ultramar had possibly considered a frac for this zone; however, the bottom hole pressure was too low. The well was plugged and abandoned on 5-19-86. Based on the test data for all 3 wells across this block, it appears that the Fandango is a tight reservoir in this area.

The other well of interest in this area is located approximately 1 mile to the east of the BHP/Amoco #1 Bishop Cattle Co. The Tana #1 Lloyd was completed as a dry hole on 5-7-90. In this well, the Fandango is faulted out by Fault A. This well is not shown on the cross section because the entire Fandango section is faulted out.

Both the BHP/Amoco Bishop Cattle Co. and the Ultramar Hubberd wells indicate the reservoir is tight upthrown to the expansion fault. The Columbia Gas well indicates the reservoir is even tight immediately downthrown to the expansion fault. However, there are porous sands in the Fandango in both Destino and Northwest Rosita Fields. It is possible that early hydrocarbon migration into the

Rosita and Destino structures preserved porosity in these sands. These structures are located in a more basinward position and would have been filled first by hydrocarbons migrating out of the basin. The Prospero area would have been filled after Rosita and Destino and would have suffered more cementation and diagenesis during burial, thus contributing to the tight nature of the formation.

RESERVOIR ANALYSIS

The Fandango sands in the BHP/Amoco Bishop Cattle Company No. 1 were proved to have low permeability by flow tests. Two intervals of the Fandango section were tested in the Bishop Cattle Company No. 1.

The intervals from 10892 to 10955 and 11040 to 11060 feet were initially tested on June 1, 1991. This zone produced 362 mcf during a 56 hour flow test. The average producing rate at the end of the test was 169 mcfd, 0 bcpd, and 0 bwpd and a flowing tubing pressure of 1030 psi. on a 6/64" choke. The detailed documentation for this well test is included as Exhibit No. 6. The absolute open flow for this zone is calculated to be 191 mcfd by using a single point analysis (Exhibits No. 7a & 7b).

A pressure buildup test was performed following the flow test. The conventional analysis of the pressure buildup using a semilog plot analysis is included as Exhibit No. 8. The permeability calculated from this analysis is .048 md. The best model generated match for the semilog plot is with a permeability of .07 md. (Exhibit No. 9). The model uses superposition techniques to generate a prediction of pressure performance when given reservoir properties such as permeability and skin. A match of this computer generated versus actual pressure performance is used to determine permeability and skin. All techniques used estimated permeabilities less than 0.1 md.

The intervals from 10520 to 10538 and 10592 to 10612 feet were initially tested on June 26, 1991. Initial attempts to flow this zone were unsuccessful. Gas production was established only after unloading the well with coiled tubing. This zone tested at the low rate of 72 MCFD 0 bcpd and 0 bwpd and a FTP of 685 psi. (Exhibit No. 10). This producing rate is close to the calculated AOF OF 73 MCFD (Exhibits No. 11a & 11b). Because of the extremely low rate, a buildup test was not attempted on this interval. The existence of clear perforations was confirmed by pumping into the formation with KCl water. Based on poor performance, we conclude the permeability is lower than the first interval tested. The reservoir data sheets for both zones are included as Exhibits No. 12 and 13.

Based on these results, production tests were not performed on additional Fandango Sands. Our log analysis indicates that the rock properties for the remaining sands will be of equal or lower quality than the two zones tested. Exhibit 14 presents computer generated log calculations over the Fandango section in the BHP/Amoco Bishop Cattle Company well No. 1. The water saturations and porosities calculated for the intervals tested were equal or superior to the porosities and water saturations observed in the remaining sands in this section. Therefore, the entire Fandango section in the Bishop Cattle Company has average permeabilities less than 0.1 md., and it is reasonable to predict that all of the Fandango sands in the Prospero Area shown on Exhibit 2 and 3 would have an average in-situ permeability less than 0.1 md. based on tests cited earlier in this discussion relative to the other wells in the area and presented on the cross section (Exhibit 5).

FRESH WATER PROTECTION

The determination of the Fandango sand series in the Prospero Area will not adversely affect the fresh water aquifers in the area as evidenced by the surface casing letter (Exhibit No. 15a). The Texas Water Commissioner's letter requires surface casing to a depth of 800 feet to protect fresh water. Exhibit 15b outlines the casing and cement program recommended by BHP Petroleum (Americas), Inc. to the Railroad Commission of Texas for the Bishop Cattle Co. Well No. 1, and Exhibit No. 15c documents the Commission approval of the casing and cement program for the well.

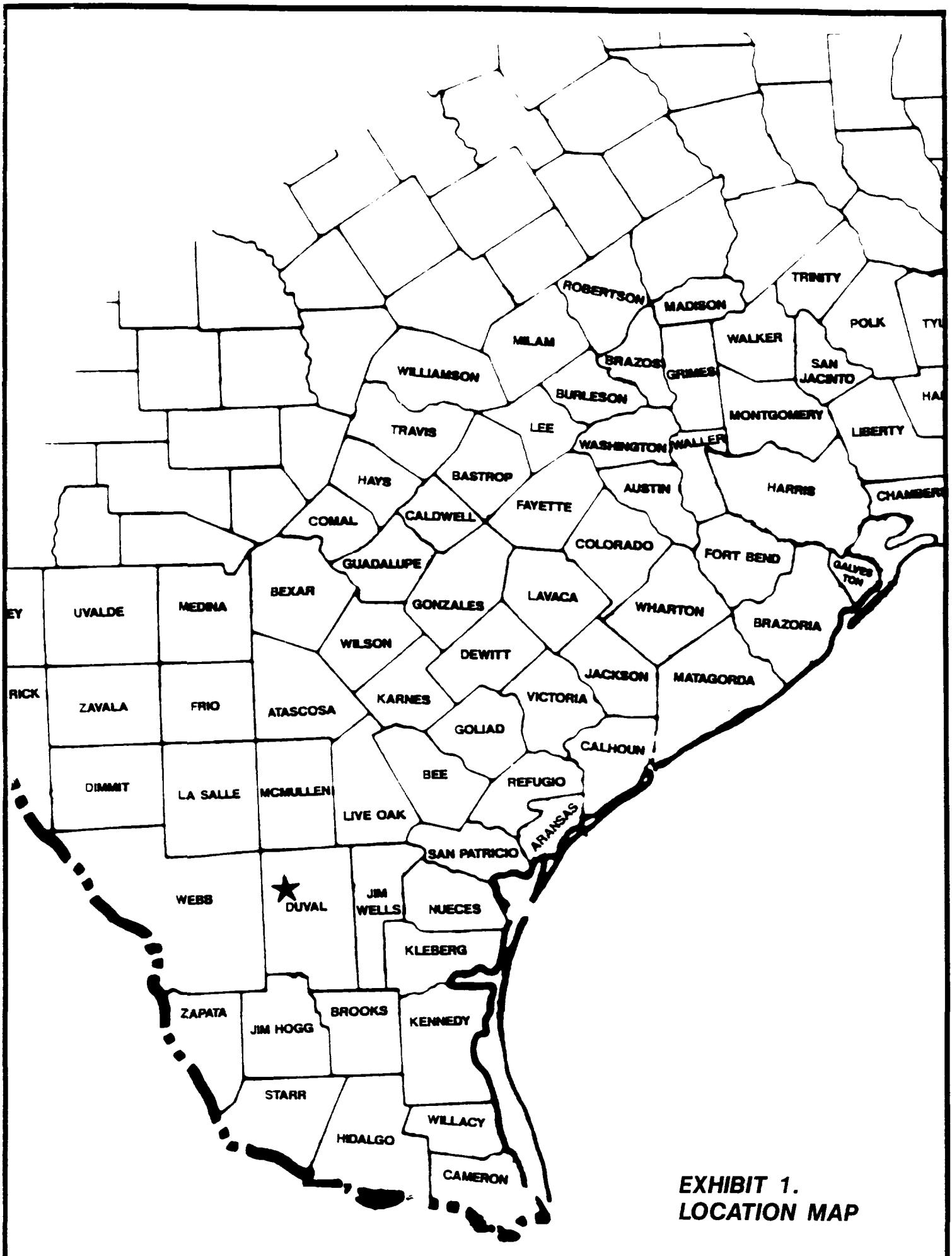
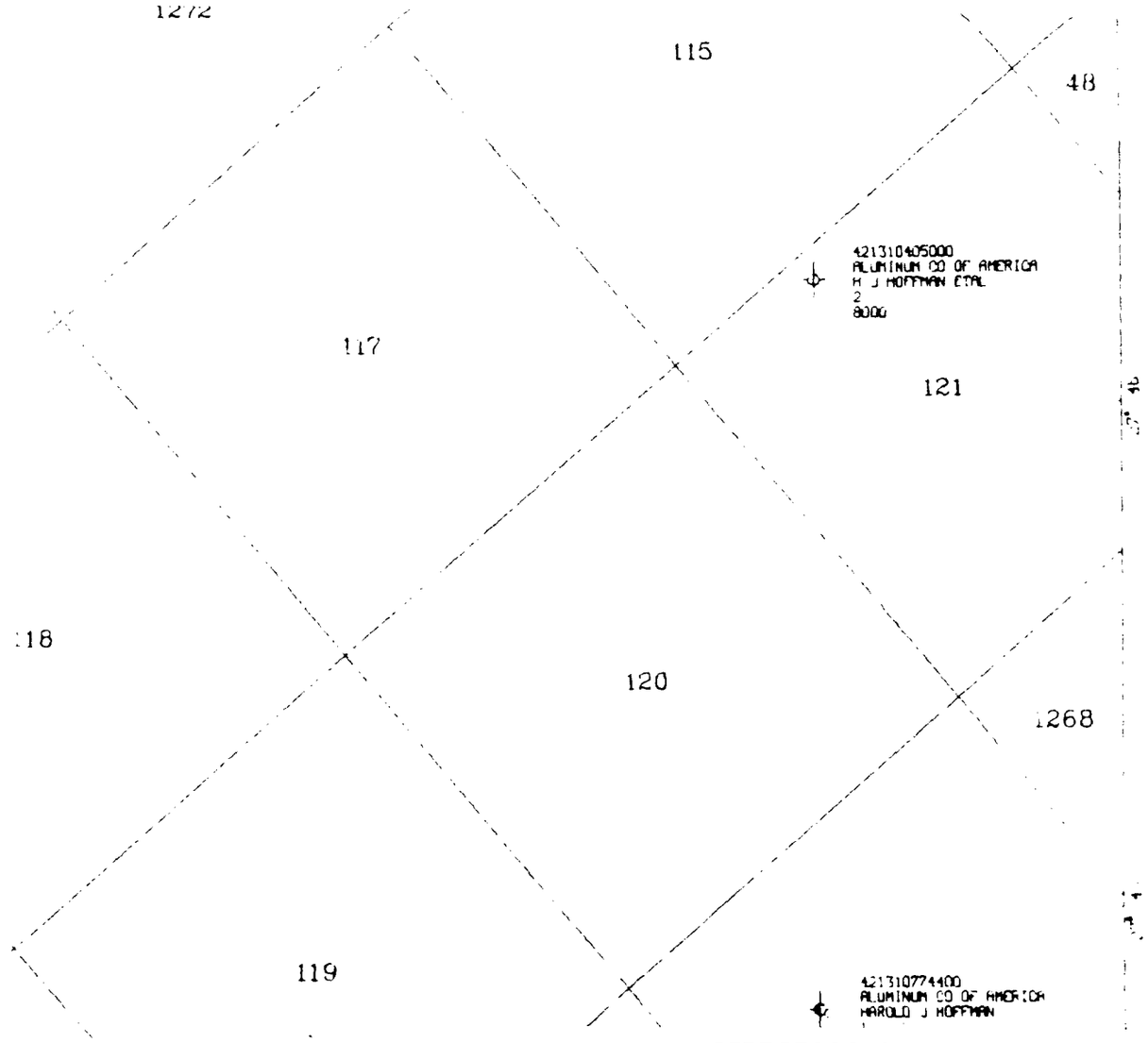


EXHIBIT 1.
LOCATION MAP



Amoco Production Company
WORLDWIDE EXPLORATION BUSINESS GROUP
HOUSTON
TEXAS ONSHORE

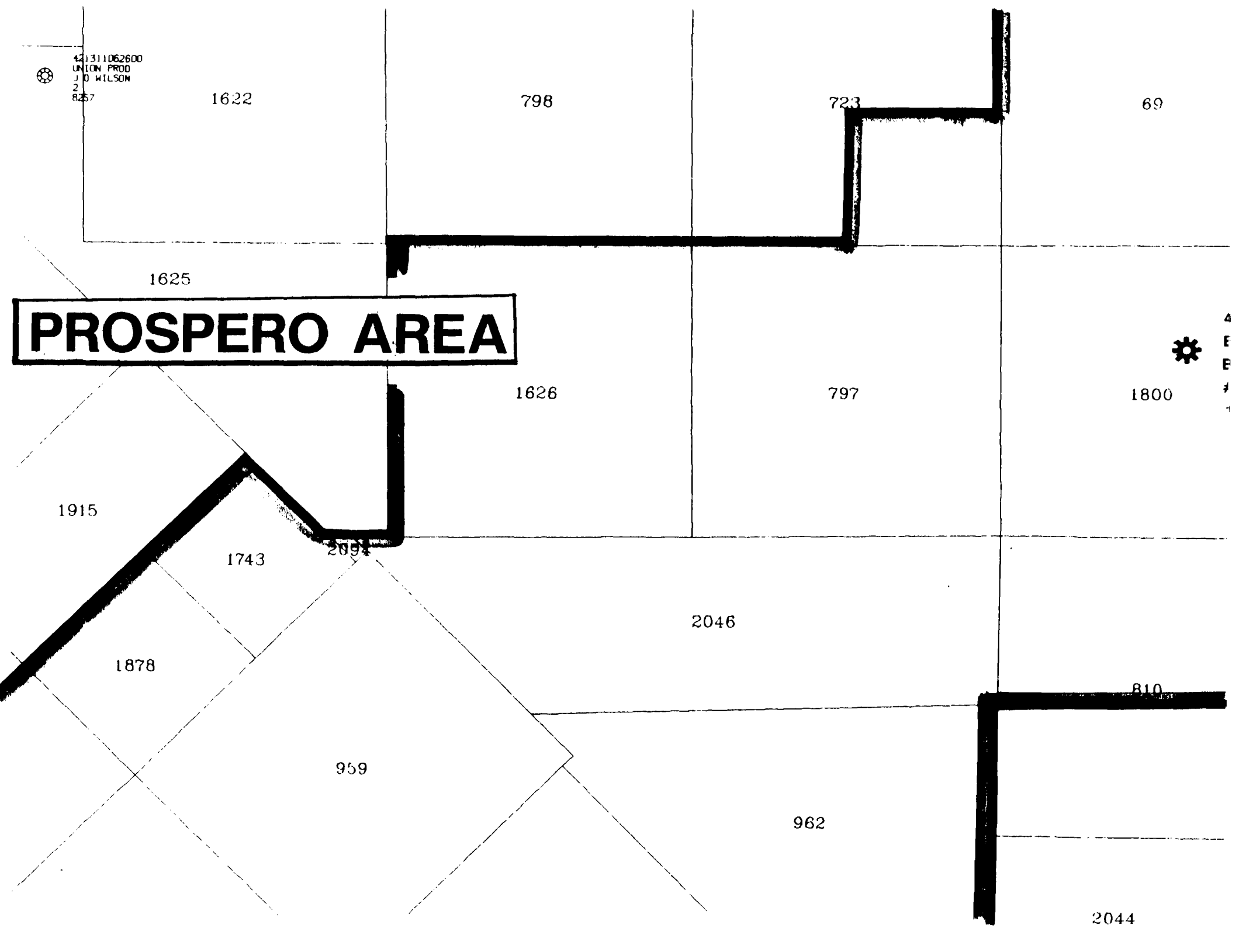
PROSPERO AREA

ENCL NO _____
REPORT NO _____

DATE AUGUST 1991
GEOL S. THOMPSON
GEOPH. J. GROSS

Drafted by .

EXHIBIT 2

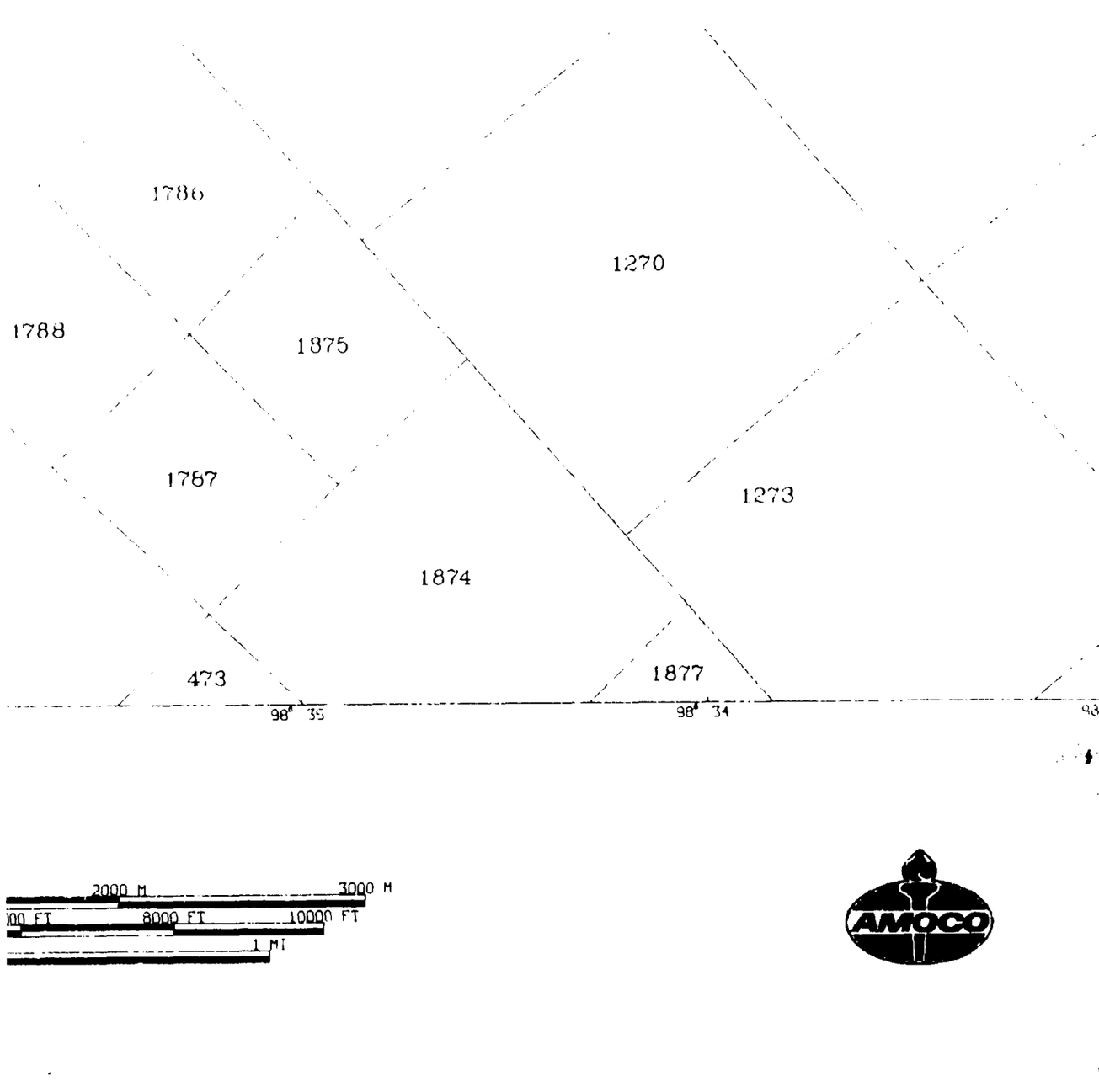

42131106260O
UNION PROD
J O WILSON
2
8257
1622
798
723
69
1625
PROSPERO AREA
1626
797
1800
1915
1743
2094
2046
1878
810
959
962
2044

September 4, 1991

EXHIBIT 3
TABULATION OF SURVEY NAMES

Abstract	Survey Name
A-69	B.S. & F.
A-92, West Half	B.S. & F.
A-723, Southeast Quarter	G.B. & C.N.G.R.R.
A-797	G.B. & C.N.G.R.R.
A-810, North Half	H.E. & W.T.R.R.
A-959	C. & M.R.R.
A-962	G.B. & C.N.R.R.
A-1626	J. J. White
A-1743	Pedro Hernandez
A-1799, West Half	J. J. White
A-1800	J. J. White
A-1822, Southeast Half	J. A. Cano
A-1823, Southeast Half	J. A. Cano
A-1836	Bernebe Elizondo
A-1878	Anastacio Nunez
A-1922	Gregorio Ruiz
A-2046	Irene G. Sutherland
A-2094	E. R. Thomas

WP:824/GWF.sp



Amoco Production Company

WORLDWIDE EXPLORATION BUSINESS GROUP
HOUSTON
TEXAS ONSHORE

PROSPERO AREA
STRUCTURE MAP

HORIZON: TOP FANDANGO

SCALE: 1" = 2000'

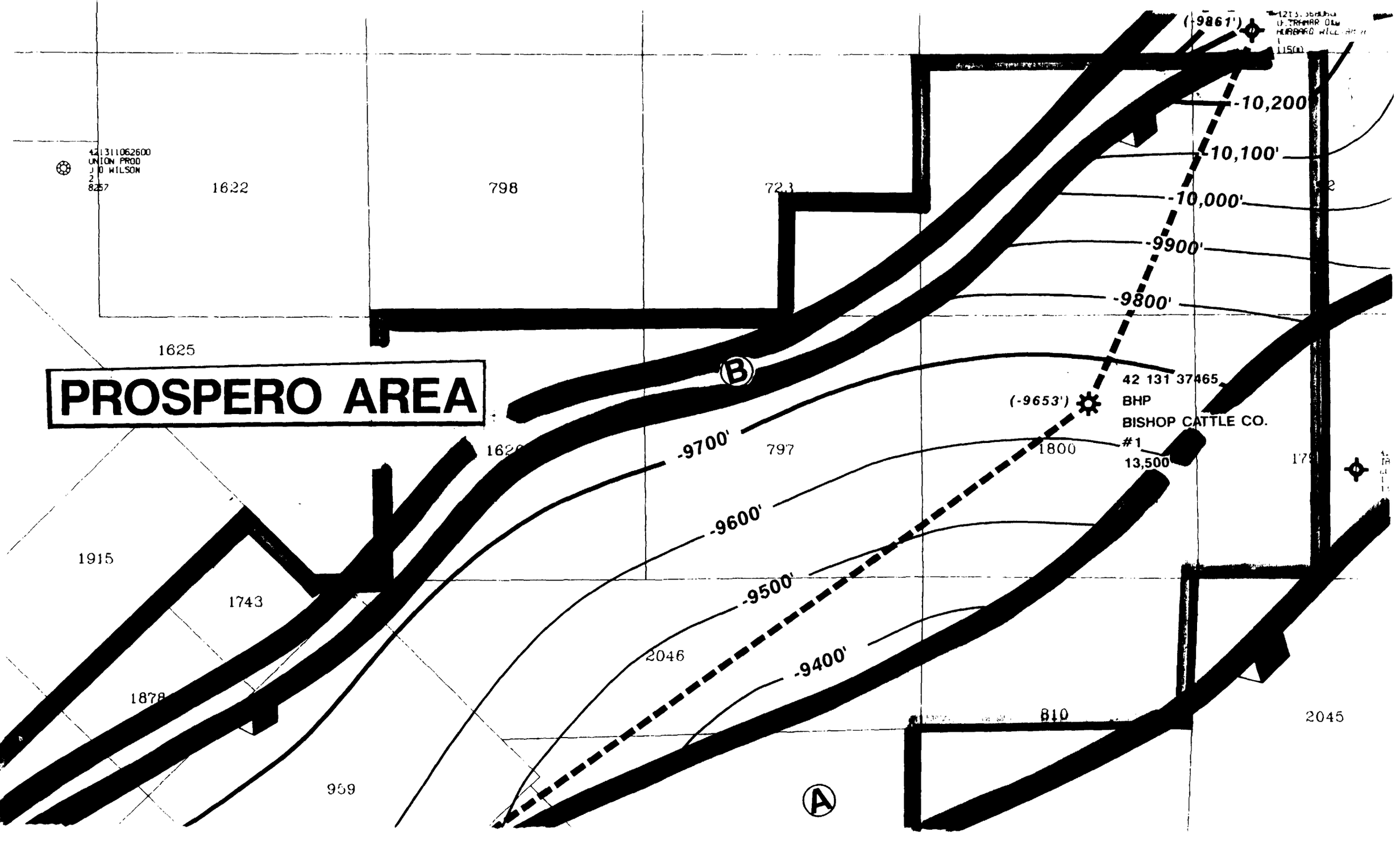
CI = 100'

ENCL. NO. _____ DATE AUGUST 1991

REPORT NO. _____ GEOL. *S. THOMPSON*

Drafted by . GEOPH. *J. GROSS*

EXHIBIT 4


PROSPERO AREA
42 131 37465
BHP
BISHOP CATTLE CO.
#1
13,500
(-9653')
(-9861')
-10,200'
-10,100'
-10,000'
-9900'
-9800'
-9700'
-9600'
-9500'
-9400'
42 131 10626 00
UNION PROD
J O WILSON
2
8257
1622
798
723
1625
797
1800
1915
1743
2046
1878
959
810
2045
A
B

Amoco Production Company

WORLDWIDE EXPLORATION BUSINESS GROUP
HOUSTON
TEXAS ONSHORE

STRATIGRAPHIC CROSS SECTION
TOP FANDANGO
PROSPERO AREA
DUVAL COUNTY, TEXAS

- LEGEND -

Vertical Scale : 1" = 100'
Horizontal Scale : 1" =1000'
Contour Interval : _____

EXHIBIT 5

ENCL. NO. _____
REPORT NO. _____
Drafted by: jcm

DATE AUGUST, 1991
GEOL. S. THOMPSON
GEOPH. J. GROSS

HAYCO WELL TESTERS, INC.

P. O. BOX 51914 -:- LAFAYETTE, LA. 70505
318/269-1002

EXHIBIT 6

Customer: BHP Petroleum Customer Order No. _____ Date 5-30-91 & 5-31-91

Lease Bishop Cattle Co. #1 (Wilcox Sand) Field Wild Cat

Test Manifold 3.826" FLT WHT MCFD CSG

Time	Choke XXX	DWT XXX	Heater Inlet	Bath Temp.	Tank Meter Oil	Tank Meter Water	BOPH	BOPD	BWPH	BWPD	Orifice Size High	Orifice Size Low	Diff. High	Diff. Low	Static High	Static XXX	Gas Temp. High	Gas Temp. XXX	Chloride	Gas Volume High	Gas Volume Low	G. O. R.	Gravity	BS&W
					Tested test manifold & 2 heater to 8,000# - OK																			
1:00PM	16/64	3376#			Open well by-pass sep & heaters to Frac. Tank CC Water Return																0#			
					Open on 16/64 adj. @ test manifold																			
1:01	"	50			Open adj. @ test manifold																			
1:05	Open	7			Small CC Water Flow																			
1:30	"	16																						
2:00	"	15			Put well thru super sep. H2S = 0PPM																			
2:30	"	14																						
3:00	"	18			Flowing water to super sep.																			
3:25	"	55			Changed choke to 16/64 @ test manifold. Small amount of gas to surf.																			
3:30	16/64	98			Recovered 8 Bbls. water 3:00PM to 3:30PM H2S = 0PPM CO2 = 6%																250			
4:00	"	315																			300			
4:30	"	308		136°	Recovered 10 Bbls. Water 30 Min.						1.000		24"		60#	106°	100°	106°		258	300	Ttl. Wtr	Rec.	50 Bbls.
4:45	"	290			Changed choke to 12/64 @ test manifold.																			
5:00	12/64	252		137							1.000		21		60	96	126	102		237	300	Ttl. Wtr.	Rec	51.7 Bbl
5:30	"	170		137	No water @ this time						1.000		15		60	96	120	100		200	250	Ttl. Wtr.	Rec	51.7 Bbl
5:35	"	168			Changed choke to 16/64																			
6:00	16/64	156		137		56.1			8.8	211			38		60	102	110	104	110,000	322	250	Ttl. Wtr.	Rec	56.1 Bbl
6:30	"	122		137		56.1							16		60	94	110	98		209	250	Ttl. Wtr.	Rec	56.1 Bbl
7:00	"	121		137		56.1							14		60	92	110	95		195	225	Ttl. Wtr.	Rec	56.1 Bbl
7:01	"	121			Changed choke to 24/64																			
7:30	24/64	104		137		56.1							16		60	93	100	94		211	225	Ttl. Wtr.	Rec	56.1 Bbl

PB T.D. 11,400' Perf. 10,892 - 11,060 Packer Set 10,765 Type Packer Baker Model "HE" Well Open 1:00PM 5-31-91 Shut In _____

REMARKS: _____ Signature Webb Wilson

HAYCO WELL TESTERS, INC.

P. O. BOX 51914 -:- LAFAYETTE, LA. 70505
318/269-1002

Customer: B.H.P. Petroleum Customer Order No. _____ Date 5-31-91

Lease Bishop Cattle Co. #1 Field Wild Cat

Time	Choke / Test Manifold	DWT PSIG	Heater Inlet	Bath Temp.	Tank Meter Oil	Tank Meter Water	BOPH	BOPD	BWPH	BWPD	Orifice Size High	Orifice Size Low	Diff. High	Diff. Low	FLT Static High	FLT Static Low	WHT Gas Temp. High	WHT Gas Temp. Low	PPM Chloride	MCFD Gas Volume High	Casing Gas Volume Low	G. O. R.	Gravity	%BS&W
8:00PM	24/64	107#	3/4	137°		56.1					1.000"		15"		60#	92°	100°	94°	11,000	204	200#			
8:15	"	102	"		Changed	choke ot	14/64	adj.														Ttl. Wtr.	Rec	61BBLS
8:30	14/64	212	"	137							1.000		8		60	86	100	90		149	200	Ttl. Wtr.	Rec	61BBLS
8:45	"	170	"		Changed	choke to	14/64	pos.																
9:00	"	185	"	137							1.000		10		60	86	100	90		166	175	Ttl. Wtr.	Rec	61BBLS
9:30	"	190	"	137							1.000		12		60	80	100	89		182	175	Ttl. Wtr.	Rec	61BBLS
10:00	"	189	"	137							1.000		11		60	80	90	89		169	175	Ttl. Wtr.	Rec	61BBLS
10:09	"	190			Changed	choke to	8/64	pos. @	manifold															
10:30	8/64	344	"	134							.500		58		60	78	90	86		96	175	Ttl. Wtr.	Rec	61BBLS
11:00	"	416	"	134							.625		36		60	78	90	86		118	175	Ttl. Wtr.	Rec	61BBLS
11:30	"	457	"	134							.625		44		60	76	90	85		131	175	Ttl. Wtr.	Rec	61BBLS
11:35	"	458			H2S = 0PPM	CO2 = 9%																		
12:00AM	"	502	"	134							.625		54		60	72	90	85		145	175	Ttl. Wtr.	Rec	61BBLS
12:30	"	520	"	132							.625		59		60	70	90	85		152	175	Ttl. Wtr.	Rec	61BBLS
1:00	"	532	"	132							.625		63		60	70	90	85		157	150	Ttl. Wtr.	Rec	61BBLS
1:30	"	553	"	132							.625		66		60	70	90	85		160	150	Ttl. Wtr.	Rec	61BBLS
2:00	"	558	"	132							.625		72		60	69	90	85		167	150	Ttl. Wtr.	Rec	61BBLS
2:30	"	546	"	132							.625		67		60	69	90	85		161	125	Ttl. Wtr.	Rec	61BBLS
3:00	"	540	"	132							.625		67		60	60	90	85		161	125	Ttl. Wtr.	Rec	61BBLS
3:30	"	541	"	132							.625		67		60	69	90	85		161	125	Ttl. Wtr.	Rec	61BBLS
4:00	"	530	"	132							.625		67		60	69	90	85		161	125	Ttl. Wtr.	Rec	61BBLS
4:30	"	527	"	132							.625		66		60	69	90	85		160	100	Ttl. Wtr.	Rec	61BBLS

PB T.D. 11,400 Perf. 10,892 - 11,060 Packer Set 10,765 Type Packer Baker Model "HE" Well Open 1:00PM 5-31-91 Shut In _____

REMARKS: Specific Gas Gravity .665

Signature Webb Wilson

HAYCO WELL TESTERS, INC.

P. O. BOX 51914 -:- LAFAYETTE, LA. 70505
318/269-1002

Customer: B.H.P. Petroleum Customer Order No. _____ Date 6-1-91

Lease Bishop Cattle Co. #1 Field Wild Cat

Time	Test Manifold Choke	DWT PSIG	Heater Inlet	Bath Temp.	Tank Meter Oil	Tank Meter Water	BOPH	BOPD	BWPH	BWPD	Orifice Size High	Orifice Size Low	Diff. High	Diff. Low	FLT Static High	FLT Static Low	WHT Gas Temp. High	WHT Gas Temp. Low	PPM Chloride	MCFD Gas Volume High	MCFD Gas Volume Low	G. O. R.	Gravity	Casing %BS&W
5:00AM	8/64	529#	3/4	132°							.625"		65"		60#	69°	90°	85°		159	100#	Ttl. Wtr.	Rec	61BBLS
5:17	"	529			Changed choke to 6/64 pos.																			
5:30	6/64	606	"	132							.625		25		60	69	90	85		99	100			
6:00	"	688	"	132							.625		30		60	68	90	84		108	100			

PBTD 11,400' Perf. 10,892 - 11,060 Packer Set 10,765 Type Packer Baker Model "HE" Well Open 1:00PM 5-31-91 Shut In _____

REMARKS: _____ Signature Webb Wilson

HAYCO WELL TESTERS, INC.

P. O. BOX 51914 -:- LAFAYETTE, LA. 70505
318/269-1002

Customer: B.H.P. Petroleum Customer Order No. _____ Date 6-1-91

Lease Bishop Cattle Co. #1 Field Wild Cat

3.826 FLT WHT PPM MCFD Casing

Time	Test Manifold Choke XXX	DWT PSIG	Heater Inlet	Bath Temp.	Tank Meter Oil	Tank Meter Water	BOPH	BOPD	BWPH	BWPD	Orifice Size High	Orifice Size Low	Diff. High	Diff. Low	Static High	Static Low	Gas Temp. High	Gas Temp. Low	Chloride	Gas Volume High	Gas Volume Low	G. O. R.	Gravity	S
6:30AM	6/64	770#	3/4	132°							.625		40"		60#	66°	90°	84°		25		Ttl. Water Rec.		
7:00	"	815	"	132							.625		49		60	64	85	84		39	50#			
7:30	"	839	"	132							.625		50		60	64	80	84		41	50			
8:00	"	870	"	132							.625		55		60	63	80	84		46	50			
8:30	"	890	"	132							.625		59		60	63	80	84		50	50			
					H2S = 0 PPM CO2 = 9%																			
9:00	"	910	"	132							.625		59		60	64	90	87		50	50			
9:30	"	922	"	135							.625		60		60	64	90	87		52	50			
10:00	"	930	"	135							.625		65		60	64	90	88		58	50			
10:30	"	936	"	135							.625		65		60	64	90	89		58	50			
11:00	"	955	"	135							.625		73		60	66	90	91		57	50			
11:30	"	950	"	135							.625		68		60	67	90	91		51	50			
12:00PM	"	949	"	135							.625		68		60	66	90	91		51	50			
12:30	"	948	"	135							.625		69		60	68	100	93		51	50			
1:00	"	950	"	135							.625		69		60	69	100	94		51	50	Ttl. Rec. = 61BF		
1:30	"	948	"	135							.625		72		60	74	110	97		53	50			
2:00	"	950	"	140							.625		68		60	74	110	97		59	50			
2:10	"				Lower Back pressure on super sep. to 20# - changed to 1.000" plate																			
2:30	"	960	"	145							1.000		22		20	74	110	97		58	50			
3:00	"	985	"	145							1.000		20		20	78	110	99		51	50			
3:30	"	1000	"	145							1.000		21		20	80	110	102		54	75			
4:00	"	994	"	145							1.000		24		20	76	110	101		55	75			

PB TD 11,400 Perf. 10,892 - 11,060 Packer Set 10,765 Type Packer Baker Model "HE" Well Open 1:00PM 5-31-91 Shut In _____

REMARKS: @ 8:30AM 6-1-91 CO2 = 9% H2S = 0PPM Signature Webb Wilson, Lee. B., Nick, Tim A.

HAYCO WELL TESTERS, INC.

P. O. BOX 51914 -:- LAFAYETTE, LA. 70505
318/269-1002

Customer: BHP Petroleum Customer Order No. _____ Date 6-1-91

Lease Bishop Cattle Co. Field Wild Cat

Manifold 3.826" FLT WHT PPM MCFD CASING

Time	Choke Tree	DWT PSIG	Heater Inlet	Bath Temp.	Tank Meter Oil	Tank Meter Water	BOPH	BOPD	BWPH	BWPD	Orifice Size High	Orifice Size Low	Diff. High	Diff. Low	Static High	Static Low	Gas Temp. High	Gas Temp. Low	Chloride	Gas Volume High	Gas Volume Low	G. O. R.	Gravity	BS&W
4:30PM	6/64	997#	3/4"	145°							1.000"		23"		20#	75°	110°	100°		163	75#	Ttl. Rec.	61BBLS	
5:00	"	990	"	145							1.000		24		20	74	110	99		165	75			
5:30	"	979	"	145							1.000		24		20	74	110	99		165	75			
:00	"	970	"	145							1.000		23		20	73	110	98		163	75			
6:30	"	978	"	145							1.000		24		20	71	100	96		166	75			
7:00	"	923	"	145							1.000		23		20	71	100	95		163	75			
7:30	"	920	"	145							1.000		20		20	68	100	91		152	75			
8:00	"	928	"	145							1.000		18		20	67	100	89		144	50			
8:30	"	950	"	145							1.000		17		20	66	90	86		141	50			
8:45	"	1060	"																					
9:00	"	1002	"	145							1.000		15		20	67	90	88		133	50			

FB T.D. 11,400 Perf. 10,892 - 11,060 Packer Set 10,765 Type Packer Baker Model "HE" Well Open 1:00PM 5-31-91 Shut In _____

REMARKS: _____ Signature Webb Wilson, Lee Bourque, Nick Barrett, Tim Ardoin

HAYCO WELL TESTERS, INC.

P. O. BOX 51914 -:- LAFAYETTE, LA. 70505
318/269-1002

Customer: BHP Petroleum — Customer Order No. _____ — Date 6-1-91 & 6-2-91

Lease Bishop Cattle Co. — Field Wild Cat

Super Sep. — FLT — WHT — PPM — MCFD — Casing

Time	Manifold Choke / Tree	DWT XXX	Heater Inlet	Bath Temp.	Tank Meter Oil	Tank Meter Water	BOPH	BOPD	BWPH	BWPD	Orifice Size High	Orifice Size Low	Diff. High	Diff. Low	Static High	Static Low	Gas Temp. High	Gas Temp. Low	Chloride	Gas Volume High	Gas Volume Low	G. O. R.	Gravity	%S&W
9:30PM	6/64	1080#	3/4"	145°	Producing water 11,000PPM						1.000"		16"		20#	67°	90°	87°		137	50#			
9:45	"	1075	"		Changed choke to 10/64 adj. to check 6/64 pos. choke																			
10:00	10/64	1010	"	145	Recovered 1.5 Bbls. in 30 Min.						1.000		50		20	67	90	88		242	75			
10:30	"	840	"		Unable to obtain gas rate at this time, due to changing chokes.																			
10:45	"	855	"		Changed choke to 10/64 pos. Producing small amount of water 11,000PPM Increased back pressure to 40#																			
11:00	"	840	"								1.000		25		40	83	90	90		210	125			
11:10	"	790	"		Changed choke to 6/64 pos. Producing small amount of water 11,000PPM lowered back pressure to 20#																			
11:30	6/64	765	"	145	Producing no water at this time						1.000		13		20	68	90	86		124	140			
12:00AM	"	980	"	145	Producing water.	11,000PPM					1.000		7		20	76	90	87		91	Unable to determine			
12:30	"	1111	"	145	Producing water.	11,000PPM					1.000		18		20	76	90	87		145	"	" "		
1:00	"	1148	"	145							1.000		24		20	75	90	85		168	75			
1:30	"	1190	"	145							1.000		34		20	54	80	85		202	75	Ttl. Fluid Rec.		63BBL
2:00	"	1103	"	145							1.000		36		20	52	80	86		208	80			
2:30	"	1124	"	145							1.000		35		20	56	80	86		205	80			
3:00	"	1080	"	145							1.000		32		20	56	80	85		196	80			
3:30	"	1054	"	145							1.000		31		20	55	80	85		193	80			
4:00	"	1046	"	145							1.000		30		20	58	80	86		190	80			
4:30	"	1022	"	145							1.000		29		20	58	80	86		186	80			
5:00	"	1008	"	145							1.000		27		20	57	80	85		180	80			
5:30	"	1002	"	145							1.000		26		20	57	80	85		176	80			
6:00	"	1002	"	145							1.000		26		20	57	80	85		176	80	Ttl. Fluid Rec.		63BBL
					CO2 = 10% H2S = 0PPM																			

PB T.D. 11,400 Perf. 10,892 - 11,060 Packer Set 10,765 Type Packer Baker Model "HE" Well Open 1:00PM 5-31-91 Shut In _____

REMARKS: _____ Signature Lee B., Webb W., Tim A., Nick B.

HAYCO WELL TESTERS, INC.

P. O. BOX 51914 -:- LAFAYETTE, LA. 70505
318/269-1002

Customer: BHP Petroleum Customer Order No. _____ Date 6-2-91

Lease Bishop Cattle Co. #1 (Wilcox Sand) Field Wild Cat

Time	Manifold Choke	DWT PSIG	Adj. Heater Inlet	Bath Temp.	Tank Meter Oil	Tank Meter Water	BOPH	BOPD	BWPH	BWPD	Super Sep. Orifice Size High	Orifice Size Low	Diff. High	Diff. Low	Static High	Static Low	FLT Gas Temp High	FLT Gas Temp Low	WHT Gas Temp High	WHT Gas Temp Low	Chloride	MCFD Gas Volume High	MCFD Gas Volume Low	Casing	G. O. R.	Gravity	%S&W
6:00AM	6/64	1002#	3/4"	143°							1.000"		26"		20#	57°	80°		83°			176	80#				
6:30	"	1000	"	150							1.000		25		20	56	80		85			173	90				CLean
7:00	"	990	"	155							1.000		25		20	56	80		85			173	90				
					Obtained Gas Gravity = .635 @ 7:30AM 6-2-91 - Hooked up new gauge I - Sperry Sun shorting out																							
					Gas Rates will be figured w/.635 Spec. Gas Gravity																						
7:30	"	994	"	160							1.000		25		20	56	80		85			177	90				
8:00	"	992	"	160							1.000		25		20	56	80		85			177	90				Clean
8:30	"	986	"	160							1.000		25		20	58	80		86			177	90				"
9:00	"	987	"	160							1.000		25		20	59	80		87			177	80				"
9:30	"	984	"	160							1.000		25		20	62	80		88			177	75				"
10:00	"	982	"	160							1.000		25		20	64	90		90			175	75				"
10:30	"	980	"	160	I						1.000		25		20	66	100		92			174	75				"
					Jay Jay wireline rigging up to go down hole w/pressure bomb																						
11:00	"	970	"	155							1.000		22		20	70	100		92			163	90				
11:10	"				Jay Jay pressured up lubricator - tested w/Gycol																						
11:15	"	995	"	155	Open crown valve to lubricator - going down hole w/bomb (Gycol in flow line) Gas Rate dropped																						Gycol
11:25	"				Gycol going thru 6/64 choke causing tubing pressure to increase & gas to drop																						
11:30	"	1028	"	155							1.000		18		20	77	100		93			148	75				Gycol
11:41					Wireline @ 4,000' for first gradient stop for 10 Min.																						
11:57					Wireline @ 6,000'																						
12:00PM	"	1044	"	155							1.000		24		20	67	100		94			170	75				Clean
12:30	"	1030	"	155							1.000		28		20	68	100		95			184	75				"

PB T.D. 11,400' Perf. 10,892 - 11,060 Packer Set 10,765 Type Packer Baker Model "HE" Well Open 1:00PM 5-31-91 Shut In _____

REMARKS: @ 6:00AM 6-2-91 H2S = 0PPM CO2 = 10% @ 7:30AM Gas Gravity = .635 Signature Lee B., Webb W., Tim A., Nick B.

HAYCO WELL TESTERS, INC.

P. O. BOX 51914 -:- LAFAYETTE, LA. 70505
318/269-1002

Customer: BHP Petroleum Customer Order No. _____ Date 6-2-91

Lease Bishop Cattle Co. #1 (Wilcox Sand) Field Wild Cat

Super Sep. FLT WHT MCFD Casing

Time	Choke	DWT	Manifold / Adj. Heater Inlet	Bath Temp.	Tank Meter Oil	Tank Meter Water	BOPH	BOPD	BWPH	BWPD	Orifice Size High	Orifice Size Low	Diff. High	Diff. Low	Static High	Static Low	Gas Temp. High	Gas Temp. Low	Chloride	Gas Volume High	Gas Volume Low	G. O. R.	Gravity	BS&W
12:42PM					Wireline @ 10,000'																			
1:00	6/64	1025#	3/4"	155°							1.000"		27"		20#	72°	100°	97°		181	75#			Clean
1:18					Wireline @ 11,050'																			
1:30	"	1014	"	155							1.000		27		20	73	110	98		179	75			"
					Wireline @ 10,882' W.L. on bottom																			
2:00	"	1007	"	155							1.000		27		20	72	110	97		179	75			"
2:30	"	997	"	155							1.000		27		20	76	110	99		179	75			"
3:00	"	1005	"	155							1.000		27		20	77	110	99		179	75			"
3:30	"	1037	"	155							1.000		24		20	74	110	99		169	60			"
4:00	"	1017	"	155							1.000		28		20	72	110	99		182	60			"
4:30	"	999	"	155							1.000		27		20	75	110	101		179	60			"
5:00	"	1002	"	155							1.000		24		20	76	110	99		169	75			"
5:30	"	1026	"	155							1.000		21		20	76	110	100		158	75			"
6:00	"	1027	"	155							1.000		24		20	72	110	96		169	75			"
6:30	"	1027	"	155							1.000		23		20	68	110	95		165	75			"
7:00	"	1066	"	155							1.000		22		20	72	110	95		162	75			"
7:30	"	1036	"	155							1.000		24		20	69	110	95		169	75			"
8:00	"	1030	"	155							1.000		24		20	66	110	90		169	75			"
					Shut well in for pressure build up																			
8:01		1049	SIP		8:04	1083	SIP				8:07	1118	SIP						8:10	1151	SIP	8:13	1184	SIP
8:02		1060	"		8:05	1094	"				8:08	1129	"						8:11	1161	"	8:14	1195	SIP
8:03		1072	"		8:06	1107	"				8:09	1141	"						8:12	1172	"	8:15	1205	SIP

PB T.D. 11,400 Perf. 10,892 - 11,060 Packer Set 10,765 Type Packer Baker Model "HE" Well Open 1:00PM 5-31-91 Shut In 8:00PM 6-2-91

REMARKS: _____ Signature Lee B., Webb W., Tim A., Nick A.

HAYCO WELL TESTERS, INC.

P. O. BOX 51914 -:- LAFAYETTE, LA. 70505
318/269-1002

Customer: BHP Petroleum Customer Order No. _____ Date 6-2-91 & 6-3-91 & 6-4-91 & 6-5-91

Lease Bishop Cattle Co. Field Wild Cat

Time	Choke Tree	DWT PSIG	Heater Inlet	Bath Temp.	Tank Meter Oil	Tank Meter Water	BOPH	BOPD	BWPH	BWPD	Orifice Size High	Orifice Size Low	Diff. High	Diff. Low	Static High	Static Low	Gas Temp. High	Gas Temp. Low	Chloride	Gas Volume High	Gas Volume Low	G. O. R.	Gravity	%BS&W
8:20PM		1275	SIP		1:00AM	3228	SIP				4:00PM	5209	SIP						2:00PM	5571	SIP	12:00PM	5695	SIP
8:25		1307	"		1:30	3387	"				5:00	5241	"						3:00	5576	"	Rigged down		
8:30		1358	"		2:00	3532	"				6:00	5273	"						4:00	5584	"	Gauge I		
8:35		1402	"		2:30	3670	"				7:00	5299	"						5:00	5592	"			
8:40		1450	"		3:00	3802	"				8:00	5325	"						6:00	5598	"			
8:45		1496	"		3:30	3923	"				9:00	5344	"						7:00	5605	"			
8:50		1541	"		4:00	4037	"				10:00	5365	"						8:00	5612	"			
8:55		1584	"		4:30	4144	"				11:00	5383	"						9:00	5619	"			
9:00		1630	"		5:00	4250	"				*12:00AM	5401	"						10:00	5625	"			
9:15		1756	"		5:30	4333	"				1:00	5419	"						11:00	5632	"			
9:30		1874	"		6:00	4415	"				2:00	5435	"						*12:00AM	5639	"			
9:45		1988	"		6:30	4495	"				3:00	5450	"						1:00	5644	"			
10:00		2100	"		7:00	4564	"				4:00	5464	"						2:00	5650	"			
10:15		2217	"		7:30	4650	"				5:00	5478	"						3:00	5656	"			
10:30		2315	"		8:00	4713	"				6:00	5490	"						4:00	5662	"			
10:45		2418	"		9:00	4820	"				7:00	5502	"						5:00	5667	"			
11:00		2518	"		10:00	4908	"				8:00	5520	"						6:00	5672	"			
11:15		2616	"		11:00	4980	"				9:00	5527	"						7:00	5676	"			
11:30		2705	"		12:00PM	5041	"				10:00	5533	"						8:00	5681	"			
11:45		2801	"		1:00	5089	"				11:00	5542	"						9:00	5685	"			
*12:00AM		2892	"		2:00	5132	"				12:00PM	5550	"						10:00	5688	"			
12:30		3065	"		3:00	5172	"				1:00	5560	"						11:00	5692	"			

PB T.D. 11,400' Perf. 10,892 - 11,060 Packer Set 10,765' Type Packer Baker Model "HE" Well Open _____ Shut In 8:00PM 6-2-91

REMARKS: @ 10:00AM 6-4-91 obtained 1 KCL Water Sample & 1 Mud & Sand Sample from super sep. Signature Lee Baudoin

HAYCO WELL TESTERS, INC.

P. O. BOX 51914 -:- LAFAYETTE, LA. 70505
318/269-1002

(Wilcox Sand)
Lower Zone

Customer B H P Petroleum Customer Order No. ____ Date 6-21-91

Lease Bishop Cattle #1 Field Wildcat

Time	Choke Tree	DWT KHG	Heater Inlet	Bath Temp.	Tank Meter Oil	Tank Meter Water	BOPH	BOPD	BWPH	BWPD	Orifice Size High	Orifice Size Low	Diff. High	Diff. Low	Static High	Static Low	Gas Temp. High	Gas Temp. Low	Chloride	Gas Volume High	Csg. KGX	G. O. R.	Gravity	BS&W
12:45PM		6094#SIP																			0#			
1:00PM		6094#SIP																						
1:30PM	6/64	6094#SIP	Open well thru Sep. on 6/64 adj @ test manifold-holding 600# back pressure on sep.-gas return																					
1:35PM	6/64	5271#	Open																					
1:50PM	6/64	3820#	Open		Changed to 9/64 adj @ test manifold-gas return																0#			
2:00PM	9/64	2892#	Open																					
2:30PM	9/64	1762#	Open		Dry gas																			
3:00PM	9/64	1338#	Open		Lowered back pressure on sep. from 600# to 30#																0#			
3:30PM	9/64	765#	Open																					
4:00PM	9/64	609#	Open																					
4:30PM	9/64	488#	Open																					
5:00PM	9/64	429#	Open		Shut well in Dowell pumping into well to kill well																			

P.B.T.D. 11,400' Perf. 10,892'-11,060' Packer Set 10,765' Type Packer Baker "HE" Well Open 1:30PM 6-21-91 Shut In 5:00PM 6-21-91

REMARKS

Signature Lee F. Baudoin

Wilcox Sand
Lower Zone

HAYCO WELL TESTERS, INC.

P. O. BOX 51914 -:- LAFAYETTE, LA. 70505
318/269-1002

Customer BHP Petroleum Customer Order No. Date 6-22-91

Lease Bishop Cattle #1 Field Wildcat

Time	Choke	Test Manifold Csg	Heater Inlet	Bath Temp.	Tank Meter Oil	Tank Meter Water	BOPH	BOPD	BWPH	BWPD	Orifice Size High	Orifice Size Low	Diff. High	Diff. Low	Static High	Static Low	Gas Temp High	Gas Temp Low	Chloride	Gas Volume High	Gas Volume Low	G. O. R.	Gravity	BS&W
					Hayco tied into Csg. with Test Manifold to Frac Tanks																			
					Dowell tied into tubing with pump																			
12:45PM		3260#	SIP		On Csg. Open Csg. on 14/64 adj. (Gas Return) slowly increasing adj. choke																			
12:55		525	DWT		Open choke to 64/64																			
1:00	Open	472	"		8.34# Water Return																			
1:10	"				Dowell started to pump down Tbs. to establish 2 - 2 1/2 BPM Rate																			
1:12	"	607	"		Stopped pumping to fix up pill																			
1:17	"	117	"																					
1:30	"	70	"		Dowell started pumping pill down Tbs. adj. @ test manifold = 48/64																			
1:40	48/64	244			Pumping Zinc Bromide down tubing @ 2 - 2 1/2 BPM Rate Adj. @ Test Manifold = Open																			
2:00	Open	329			Pumping down TBS to kill well - Returns from Csg. to Frac Tanks																			
2:30	"	280																						
3:00	"	265																						
3:15	"	206			Pumped 286 Bbls. into well																			
3:24	"	190			Slowed down pumping from 2 1/2 BPM to 1 1/2 BPM pill to surface from Csg. 300 Bbls. pumped into well																			
3:45	"	85			Changed Frac Tanks Zinc Bromide to Surface from Csg. 333 Bbls. pumped in																			
					Stopped pumping into well - Dowell Fixing Pill																			
4:00	"	15			Started pumping Pill into well																			
4:25	"	290			Total pumped into well & around Csg = 368.5 Bbls.																			
4:38	"	275			Total pumped into well & around Csg = 397 Bbls. Stopped pumping																			
					Rig Rigging down Tree & Rigging up BOP's to pull pipe																			

PB TD 11,400' Perf. 10,892 - 11,060' Packer Set 10,765' Type Packer Baker "HE" Well Open Shut In

REMARKS:

Signature Lee F. Baudoin

Wilcox Sand
Lower Zone

HAYCO WELL TESTERS, INC.

P. O. BOX 51914 -:- LAFAYETTE, LA. 70505
318/269-1002

Customer: BHP Petroleum Customer Order No. _____ Date 6-23-91

Lease Bishop Cattle #1 Field Wildcat

Time	Test Man. Choke Tree	DWT PSIG	Heater Inlet	Bath Temp.	Tank Meter Oil	Tank Meter Water	BOPH	BOPD	BWPH	BWPD	Orifice Size High	Orifice Size Low	Diff. High	Diff. Low	Static High	Static Low	Gas Temp. High	Gas Temp. Low	Chloride	Gas Volume High	Gas Volume Low	G. O. R.	Gravity	BS&W
4:25PM		150	SIP		Gas bubble to surface	Shut well in with BOP's																		
4:30		150	"																					
4:33		130	"																					
4:35		120	"																					
4:38		130	"																					
4:50		140	"																					
5:00		140	"																					
5:10		140	"		Bled well down gas return.																			
5:15		0			No fluid or gas Rig rigging up to circulate well - 12 Bbls. to fill hole.																			
5:40					Stop pumping to watch well - No flow - No blow																			

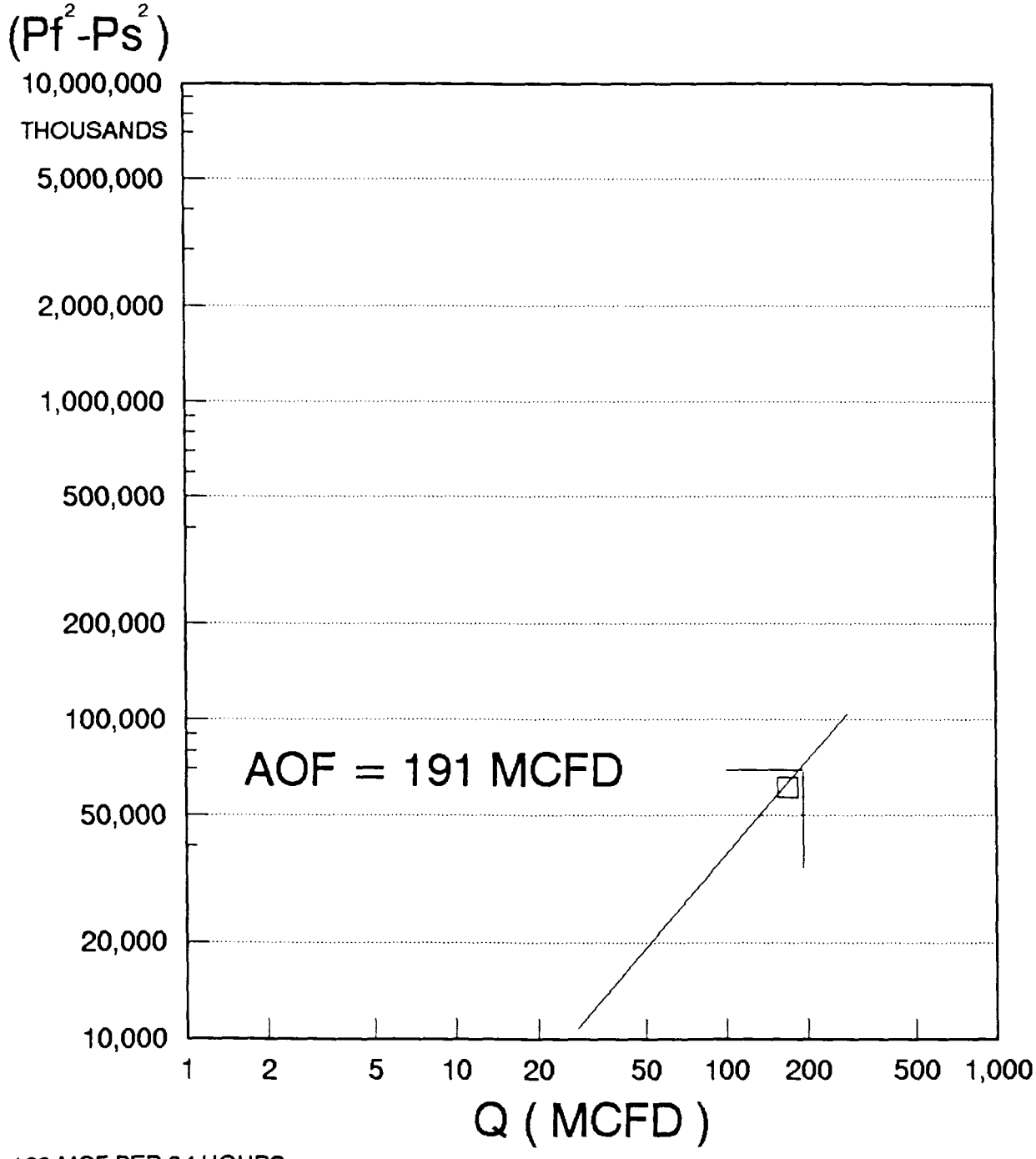
PB T.D. 11,400' Perf. 10,892' - 11,060' Packer Set 10,765' Type Packer Baker "HE" Well Open _____ Shut In _____

REMARKS: _____ Signature Lee B. Baudoin

BISHOP CATTLE COMPANY NO. 1

PROSPERO AREA

GAS WELL BACK PRESSURE CURVE



169 MCF PER 24 HOURS
6/2/91 INTERVAL 10892 TO 11040 FEET E.L.M.
$\Theta = 45.0^{\circ}$ N = 1

EXHIBIT 7A

BISHOP CATTLE COMPANY NO. 1

AOF CALCULATION

INTERVAL 10892 TO 11060 FT. ELM. MIDPOINT = 10976 FT.

165 MCFD O BCPD O BWPD WITH TUBING PRESSURE OF 979 # ON A 6/64 CHOKE 6/1/91

169 MCFD O BCPD O BWPD WITH TUBING PRESSURE OF 1030 # ON A 6/64 CHOKE 6/2/91

FROM INITIAL STATIC GRADIENT SURVEY; Pf IS 8322 # AT 10976'

WITH LAST PRODUCING RATE OF 169 MCFD & MEASURED FLOWING BHP OF 2845 PSI (10976')

SOLVE FOR AOF:

$Q = C(Pf^2-Ps^2)$, ASSUMING N=1,

SOLVING FOR C, WHERE Pf = 8322 PSI, Ps = 2845 PSI,

$C = 169 \text{ MCFD}/[(8322)^2-(2845)^2] = 2.76 \times 10^{-6} \text{ MCFD/PSI}^2$

$AOF = (2.76 \times 10^{-6})[(8322)^2-(14.7)^2] = 191 \text{ MCFD}$

EXHIBIT 7b

ZJMW04 2.223 08/29/91 10:19:03

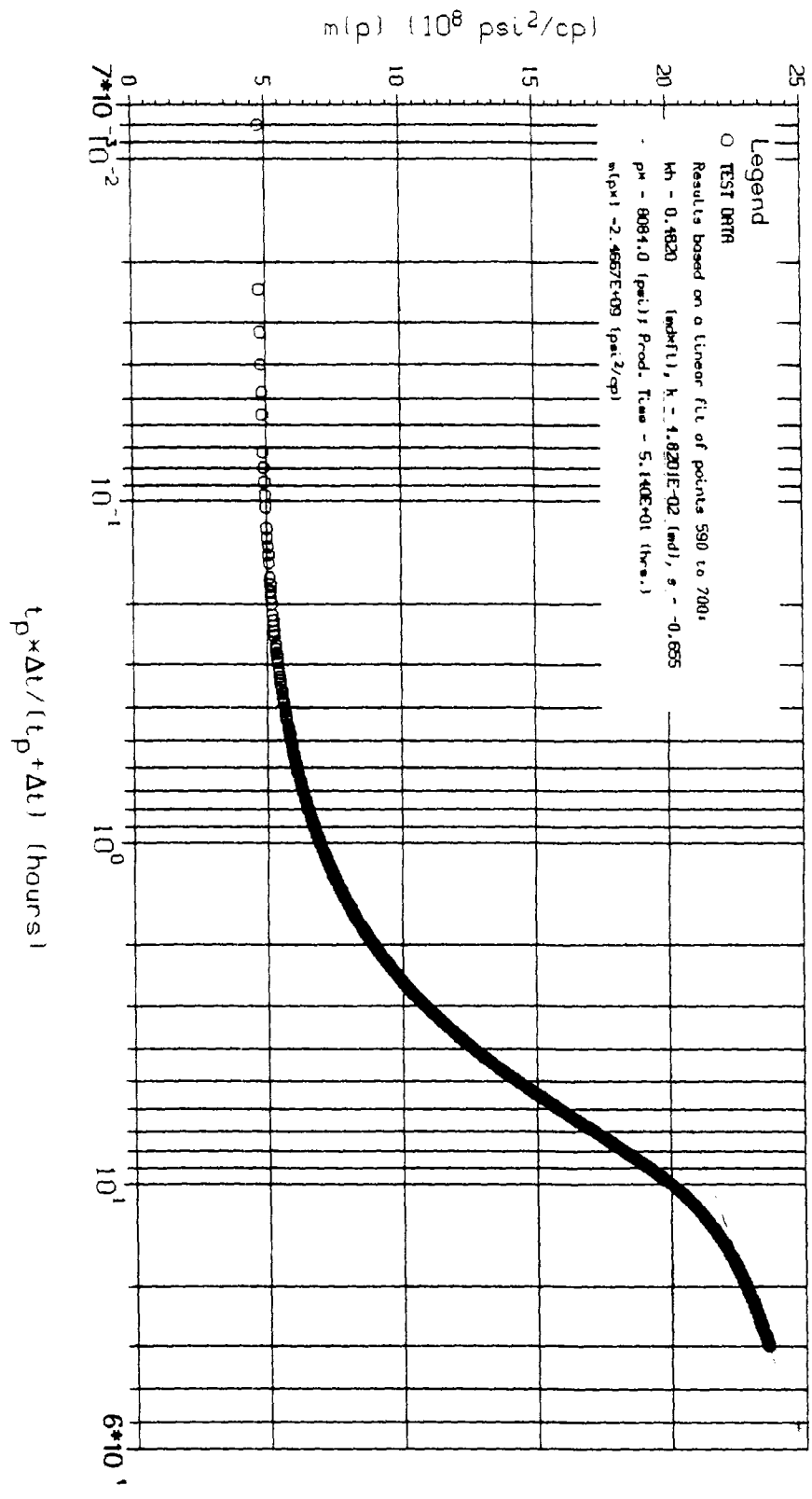


EXHIBIT NO. 8

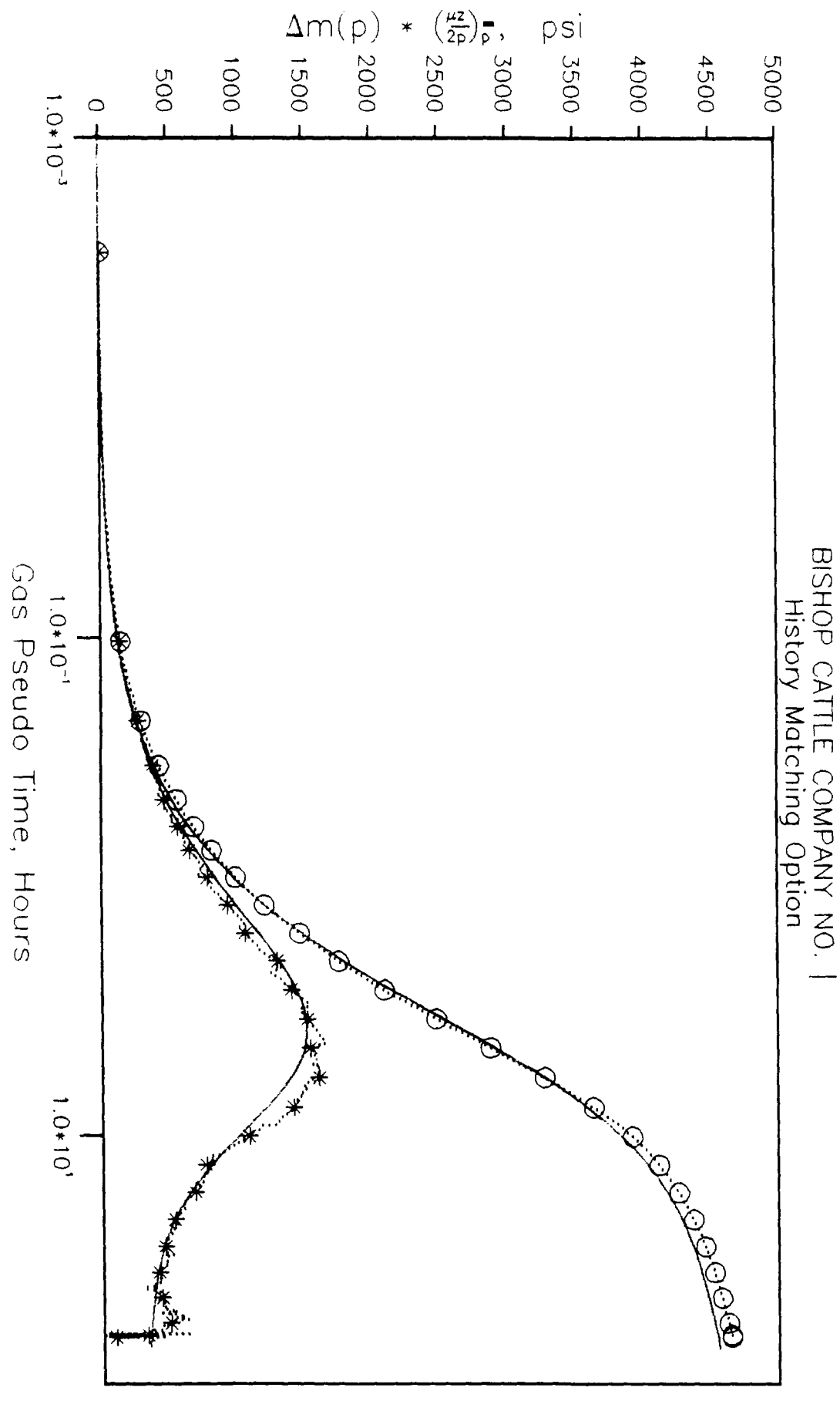

$\Delta m(p) * \left(\frac{\mu z}{2p}\right)_i$, psi
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
$1.0*10^{-3}$
$1.0*10^{-1}$
$1.0*10^{1}$
Gas Pseudo Time, Hours
BISHOP CATTLE COMPANY NO. 1
History Matching Option

EXHIBIT NO. 9

Wilcox Sand
House #3 & #4

HAYCO WELL TESTERS, INC.

P. O. BOX 51914 -:- LAFAYETTE, LA. 70505
318/269-1002

EXHIBIT 10

Customer B H P

Customer Order No.

Date 6-26-91

Lease Bishop Cattle C

Field Freer Tex.

Time	Choke Tree	DWT PSIG	Heater Inlet	Bath Temp.	Tank Meter Oil	Tank Meter Water	BOPH	BOPD	BWPH	BWPD	Casing Orifice Size High	Casing Orifice Size xxx	Diff. High	Diff. Low	Static High	Static Low	Gas Temp. High	Gas Temp. Low	Chloride	Gas Volume High	Gas Volume Low	G. O. R.	Gravity	BS&W
11:48AM		1121#	Pumped pressure. Dropped bar to perforate. Dropped tubing pressure to 897#.																					
11:53AM		635#	Perf. guns fired-fluid in tubing; 2% KCL, 8.4# per gal.																					
11:55AM		841#	S.I.P.																					
12:00PM		1030#	"																					
12:05PM		1186#	"		Wire line rigging up to go in hole with pressure bombs.																			
12:10PM		1247#	"																					
12:15PM		1260#	"																					
12:20PM		1321#	"																					
12:25PM		1377#	"																					
12:30PM		1418#	"																					
12:35PM		1468#	"																					
12:40PM		1512#	"																					
12:45PM		1552#	"																					
12:50PM		1585#	"																					
12:55PM		1618#	"																					
1:00PM		1649#	"																					
1:05PM		1675#	"																					
1:10PM		1701#	"																					
1:15PM		1723#	"																					
1:30PM		1782#	"																					
1:42PM		1813#	"		Pressuring up on lubericator																			
1:45PM		1879#	"		Crown valve leaked. Sudden increase in tubing P.S.I. due to crown valve leaking																			

P.B. T.D. 13,500 Perf 10,520-10,612 Packer Set 10,406 Type Packer Baker (DB) Well Open 6:00PM 6-26-91 Shut In

REMARKS:

Signature W. Wilson, L. Baudoin

N. Barrett

HAYCO WELL TESTERS, INC.

P. O. BOX 51914 -:- LAFAYETTE, LA. 70505
318/269-1002

Wilcox Sand
House #3 & #4

Customer: B. H P. Pet.

Customer Order No.

Date 6-26-91

Lease Bishop Cattle Co., #1

Field

Casing

Time	Choke Trcc	DWT PSIG	Heater Inlet	Bath Temp	Tank Meter Oil	Tank Meter Water	BOPH	BOPD	BWPH	BWPD	Orifice Size High	Orifice Size XXX	Diff. High	Diff. Low	Static High	Static Low	Gas Temp. High	Gas Temp. Low	Chloride	Gas Volume High	Gas Volume Low	G. O. R.	Gravity	BS&
1:46PM		1883#	SIP		Started in hole/wireline																			
2:00PM		2027#	"																					
2:20PM		2192#	"																					
2:30PM		2245#	"																					
2:45PM		2263#	"																					
3:00PM		2257#	"																					
3:15PM		2260#	"																					
3:30PM		2266#	"																					
3:45PM		2276#	"																					
4:00PM		2287#	"		Started out of hole/wireline; making grade stops.																			
4:15PM		2262#	"																					
4:30PM		2234#	"																					
4:45PM		2168#	"																					
5:00PM		2158#	"																					
5:15PM		2100#	"																					
5:20PM		2060#	"		Wireline out of hole.																			
5:30PM		2076#	"																					
5:45PM		2084#	"																					
6:00PM		2113#	"		Opened well on 10/64 pos. choke flowing on bypass to tank (Water)																			
6:01		675#	10/64									0#												
6:03		29#	10/64																					
6:05		16#	10/64		Small flow of water																			

T.D. 13,500
P.B. 10,740

Perf. 10,520-10,612

Packer Set 10,406

Type Packer Baker (DB)

Well Open 6:00PM 6-26-91

Shut In

REMARKS

Signature W. Wilson, L. Baudoin
N. Barrett

HAYCO WELL TESTERS, INC.

P. O. BOX 51914 -:- LAFAYETTE, LA. 70505
318/269-1002

Wilcox Sand
House #3 & #4

Customer B.H.P. Pet
Lease Bishop Cattle Co #1

Customer Order No.
Field Freer, Tex.

Date 6-26-91 & 6-27-91

Time	Choke Size	Manifold DWT PSIG	Manifold XXXX Tubet	Bath Temp.	Tank XXXX Oil	Tank Meter Water	BOPH	BOPD	BWPH	BWPD	Casing Orifice Size High	Casing Orifice Size XXX	Diff. High	Diff. Low	Static High	Static Low	Gas Temp. High	Gas Temp. Low	Chloride	Gas Volume High	Gas Volume Low	G. O. R.	Gravity	BS&W
6:10PM	Open	8#	10/64		Small flow of water																			
6:15PM	"	7#	10/64			1.14			.9	21.6		0#												
6:30PM	"	6#	10/64																					
6:45PM	"	6#	10/64		Opened adj. choke to 3/4"							0#												
7:00PM	"	5#	3/4"																23,000PPM Wt. 8.6#						
7:30PM	"	5#	3/4"			1.53			.35	8.4		0#												
8:00PM	"	3#	3/4"																					
8:30PM	"	0#	3/4"			1.72			.19	4.56		0#												
9:00PM	"	0#	3/4"									0#												
9:30PM	"	0#	3/4"			2.07			.35	8.4		0#												
10:00PM	"	0#	3/4"																					
10:30PM	"	0#	3/4"			2.33			.26	6.24		0#												
11:00PM	"	0#	3/4"																					
11:30PM	"	0#	3/4"			2.5			.17	4.08		0#												
12:00AM	"	0#	3/4"																					
12:30AM	"	0#	3/4"			2.75			.25	6		0#												
1:00AM	"	0#	3/4"																					
1:30AM	"	0#	3/4"			3.14			.39	9.36		0#												
2:00AM	"	0#	3/4"																					
2:30AM	"	0#	3/4"			3.44			.3	7.2		0#												
3:00Am	"	0#	3/4"																					
3:30AM		0#	3/4"			3.67			.23	5.52		0#												

T.D. 13,500
P.B. 10,740

Perf. 10,529-10,612 Packer Set 10,406 Type Packer Baker (DB) Well Open 6:00PM 6-26-91 Shut In

Signature W. Wilson, L. Baudoin
N. Barrett

REMARKS:

Wilcox Sand
House #3 & #4

HAYCO WELL TESTERS, INC.

P. O. BOX 51914 -:- LAFAYETTE, LA. 70505
318/269-1002

Customer B. H. P. Pet. Customer Order No. Date 6-27-91

Lease Bishop Cattle Co. #1 Field Freer, Texas

Time	Choke Tree	DWT PSIG	Manifold Inlet	Bath Temp.	Total Rec. Tank Oil	Total Rec. Tank Water	BOPH	BOPD	BWPH	BWPD	Casing Orifice Size High	Casing Orifice Size Low	Casing Diff. High	Casing Diff. Low	Casing Static High	Casing Static Low	Casing Gas Temp. High	Casing Gas Temp. Low	Chloride	Gas Volume High	Gas Volume Low	G. O. R.	Gravity	BS&W
4:00AM	Open	0#	3/4"																					
4:30AM	"	1#	3/4"			3.86			.19	4.56			0#						23,000PPM		WT=8.6#			
5:00AM	Open	1#	Open			3.95			.17	4.08			0#											
5:30AM	Open	1#	Open																					
5:47AM	"	1#				Shut well in																		
5:54AM	"	2#SIP				Open well on by pass																		
6:00AM	Open	1#	Open			4.08BBls			.13				0#						23,000PPM		WT=8.6#			

T.D. 13,500 Perf. 10,520-10,612 Packer Set 10,406 Type Packer Baker (DB) Well Open 6:00PM 6-26-91 Shut In

P. B. 10,740

REMARKS

Signature W. Wilson, L. Baudoin
N. Barrett

Wilcox Sand
House #3 & #4

HAYCO WELL TESTERS, INC.

P. O. BOX 51914 -:- LAFAYETTE, LA. 70505
318/269-1002

Customer: BHP Petroleum Customer Order No. Date 6-27-91

Lease Bishop Cattle Co. #1 Field Freer, TX

Time	Test Manifold Choke Tree	DWT PSIG	Heater Inlet	Bath Temp.	Tank Meter Oil	Total Rec. Water	BOPH	BOPD	BWPH	BWPD	Orifice Size High	Orifice Size Low	Diff. High	Diff. Low	Static High	Static Low	Gas Temp High	Gas Temp Low	Chloride	Gas Volume High	Csg.	G. O. R.	Gravity	BS&W
6:00AM	Open	1#	Open			4.08BBLS			.13	3.12		WT. = 8.6#							23,000PPM		0#				
6:30AM	"	1#	"																					
6:49AM	"	1#	"		Shut well in for build up																			
7:00AM		37#SIP																						
7:06AM		51#SIP			Open well on by-pass open choke																			
7:07AM		1#			Water return = 3Gal shut well in																			
7:30AM		4#																						
7:38AM		5#			Open well = 1Qt. return																			
7:39AM		1#			Small trickle																			
8:00AM		1#				4.1 BBLS															0#			
8:30AM		4#																						
9:00AM		3#				4.26BBLS			.16	4.0											0#			
9:30AM		4#																						
10:00AM		4#				4.42BBLS			.16	4.0											0#			
10:30AM		2#																						
11:00AM		1#				4.57BBLS			.15	3.6											0#			
12:00PM		1#				4.72BBLS			.15	3.6											0#			
12:28PM		1#			Shut well in Otis coil tubing pressuring up on lubericator w/crown valve close																			
12:30PM		668#SIP			Crown valve seems to be leaking-open well to frac tank																			
12:33PM	Open	84#	Open		Coil tubing going down hole while jetting w/N2-jetting @ 300 CFM																			
1:00PM	"	93#			N2 & KCl fluid return																			
1:12PM	"	87#	"		Coil tubing stopped @ 8000' & jetting 18.72BBLS total Rec. from well csg = 0#																			

P.B. T.D. 10,740' Perf 10,520'-10,612' Packer Set 10,406' Type Packer Baker (DB) Well Open 6:00PM 6-26-91 Shut In

REMARKS:

Signature Lee B. Tim A.
Webb W. Nick B.

Wilcox Sand
House #3 & #4

HAYCO WELL TESTERS, INC.

P. O. BOX 51914 -:- LAFAYETTE, LA. 70505
318/269-1002

Customer: B. H. P. Petroleum Customer Order No. _____ Date 6-27-91

Lease: Bishop Cattle Co. #1 Field: Freer TX.

Test Manifold Csg.

Time	Choke XXX	DWT XXX	Heater Inlet	Bath Temp.	Tank Meter Oil	Tank XXX Water	BOPH	BOPD	BWPH	BWPD	Orifice Size High	Orifice Size Low	Diff. High	Diff. Low	Static High	Static Low	Gas Temp High	Gas Temp Low	Chloride	Gas Volume High	Gas Volume XXX	G. O. R.	Gravity	%BS&W
1:26PM	Open		Open		Coil tubing going down to 4000' while jetting																0#			
1:30PM	"	16#	"																					
1:36PM	"		"		Stopped @ 4,000' & jetting																			
1:48PM	"		"		Total fluid rec. = 28.72 BBLS. KCL Water																0#			
1:52PM	"	25#	"		Coil tubing going down to 6,000' while jetting																25#			
2:00PM	Open	23#	Open		N2 & KCL Return																75#			
2:14PM	"	5#	"		Coil tubing @ 6,000' & jetting																100#			
2:30PM	"	32#	"																		100#			
2:40PM	"	180#	"		Coil tubing coming out of hole while jetting-jetting @ 150 CFM																100#			
3:00PM	Open	67#	Open		Stopped jetting																			
3:15PM	"	32#	"		Coil tubing out of well-Total fluid rec. = 38.72BBLS KCL water																100#			
3:23PM	"	31#	"		Changed to 16/64 adj @ manifold N2 Return																			
3:30PM	16/64	27#	"																		100#			
3:45PM	16/64		Open		Put well thru sep. gas to surface - dry gas return																			
4:00PM	16/64	26#	"		Dry gas return																100#			
4:10PM	"		"		Coil tubing going down to 8,000'																			
4:20PM	"		"		Started to jet @ 4,000' while going down to 8,000'																			
4:35PM	16/64	168#	Open		Dry N2																150#			
5:00PM	16/64	167#	Open		Dry N2 Return																175#			
5:22PM	"		"		Coil tubing stopped @ 8,000' & jetting-dry N2 return																			
5:32PM	16/64	56#	Open		Change to open choke @ test manifold																			
5:50PM	Open	410#	Open		KCL water to surface																150#			

P.B. T.D. 10,740' Perf. 10,520'-10,612' Packer Set 10,406' Type Packer Baker (DB) Well Open 6:00PM 6-26-91 Shut In _____

REMARKS:

Signature Lee B. Tim A.
Webb W. Nick B

Wilcox Sand

House #3 & 4

HAYCO WELL TESTERS, INC.

P. O. BOX 51914 -:- LAFAYETTE, LA. 70505
318/269-1002

Customer: BHP Petroleu

Customer Order No.

Date 6-27-91 & 6-28-91

TestLease Bishop Cattle Co #1

Field Freer, TX.

Time	Manifold Choke	DWT	Heater Inlet	Bath Temp.	Meter Oil	Meter Water	BOPH	BOPD	BWPH	BWPD	Orifice Size High	Orifice Size Low	Diff. High	Diff. Low	Static High	Static Low	Gas Temp. High	Gas Temp. Low	Chloride PPM	Gas Volume High MCFD	Gas Volume Max MCFD	G. O. R.	Gravity	BS&W CSG
6:00PM	Open	420#	Open																					
6:15	30/64		"		Total fluid Rec. = 46.7 Bbls.						Changed to 30/64 adj. @ manifold													
6:21	"	196	"		Total fluid Rec. = 50.7 Bbls.														43,000		Wt. = 8.6#			
6:30	"	190	"		Approx. Gas = 39 MCFD																			
6:44	"	256	"		Changed to 16/64 adj. @ manifold - Coil tubing out of hole																			
7:00	16/64	54	"		Changed to 10/64 pos. @ choke manifold																250#			
7:30	10/64	107	"		Dry Gas						.500"		Approx Gas = 35 MCFD											
					Accum. Fluid = 50.7 Bbls.																			
8:00	"	76	"								.500		15"		15#		90°			32	125#			
8:30	"	53	"																		100			
9:00	"	48	"								.500		Unable to determine gas rate at this time								75			
9:30	"	51	"																		75			
9:45	"	23	"		Changed choke to 6/64 adj. @ test manifold																			
10:00	6/64	42	"								.500		Gas not measurable								50			
10:30	"	69	"		CO2 0% H2S																50			
11:00	"	86	"								.500		Gas not measurable								40			
11:30	"	97	"																		25			
12:00AM	"	110	"								.500		5		15		90			18	25			
12:30	"	121	"																		0			
1:00	"	135	"								.500		6		15		90			20	0			
1:30	"	141	"																		0			
2:00	"	152	"								.500		9		15		80			25	0			

PB TD 10,740' Perf 10,520' - 10,612' Packer Set 10,406' Type Packer Baker (DB) Well Open 6:00PM 6-26-91 Shut In

REMARKS:

Signature Lee B., Tim A., Webb W., Nick B.

Wilcox Sand

House #3 & 4

HAYCO WELL TESTERS, INC.

P. O. BOX 51914 -:- LAFAYETTE, LA. 70505
318/269-1002

Customer: BHP Petroleum

Lease Bishop Cattle Co. #1

Customer Order No.

Field Freer, TX.

Date 6-28-91

5.761

Time	Test Manifold Choke	DWT PSIG	Heater Inlet	Bath Temp.	Meter Oil	Meter Water	BOPH	BOPD	BWPH	BWPD	Orifice Size High	Orifice Size Low	Diff. High	Diff. Low	Static High	Static Low	Gas Temp High	Gas Temp Low	PPM Chloride	MCFD Gas Volume High	MCFD Gas Volume Low	Casing G. O. R.	Gravity	BS&
2:30AM	6/64	154#	Open																					
3:00	"	166	"								.500"		10"		15#		80°			26	0#			
3:30	"	193	"																					
4:00	"	219	"								.500		20		15		80			37	0			
4:30	"	239	"																					
5:00	"	256	"								.500		25		15		80			41	0			
5:30	"	287	"																					
6:00	"	295	"								.500		40		15		80			52	0			

PBTD 10,740' Perf 10,520' - 10,612' Packer Set 10,406' Type Packer Baker (DP) Well Open 6:00PM 6-26-91 Shut In

Signature Lee B., Tim A., Webb W., Nick B.

REMARKS:

Wilcox Sand
House #3 & 4

HAYCO WELL TESTERS, INC.

P. O. BOX 51914 -:- LAFAYETTE, LA. 70505
318/269-1002

Customer: BHP Petroleum Customer Order No. _____ Date 6-28-91

Lease Bishop Cattle Co. #1 Field Freer, TX.

Time	Test Man. Choke	DWT	Heater Inlet	Bath Temp.	Tank Meter Oil	Tank Meter Water	BOPH	BOPD	BWPH	BWPD	Orifice Size High	Orifice Size Low	Diff. High	Diff. Low	Static High	Static Low	Gas Temp. High	Gas Temp. Low	PPM Chloride	MCFD Gas Volume High	Casing Gas Volume Low	G. O. R.	Gravity	BS&W
6:00AM	6/64	295#	Open		(Total Accu. Fluid = 50.2 Bbls.)						.500"		40"		15#		80°			52	0#			
6:30	"	309	"																					
7:00	"	315	"								.500		56		15		80			62	0			
7:13	"	283	"		Coil tubing rigging up to go down hole																			
7:15	"	254	"		Open crown valve coil tubing going down weld																50			
7:30	"	205	"																		100			
7:42	"	236	"		Coil tubing @ 4,000' started jetting going down																			
7:52	"	400	"		Changed to 13/64 adj. @ test manifold																90			
8:00	13/64	344	"		N2 & Gas Return																90			
8:27	"	107	"		Coil tubing stopped @ 8,000' & Jetting																90			
8:52	"	46	"		Fluid to Surface Obtained #1 Sample																			
8:55	"		"		Obtained #2 Sample - Fluid - Obtained 1 Oil Sample (From Sep.)														19,000					
9:00	"	352	"		N2 & Water Return - Changed to 22/64 adj. @ manifold																160			
9:08	22/64		"		Obtained #3 Fluid Sample																			
9:23	"	453	"		Obtained #4 Fluid Sample						Total Accum. Fluid = 55.2 Bbls.								21,000		200			
9:28	"	459	"		Coil tubing going down to 9,000' & Jetting																210			
9:30	"	456	"																					
9:38	"	428	"		Coil tubing stopped @ 9,000' & Jetting																225			
10:00	"	369	"																					
10:15	"		"		Total Accum. Fluid = 59.2 Bbls.														103,000		225			
10:38	"		"		Total Accum. Fluid = 61.2 Bbls.														179,000		210			
11:00	"	406	"		Total Accum. Fluid = 61.7 Bbls.														179,000		210			

PBTD 10,740' Perf. 10,520' - 10,612' Packer Set 10,406' Type Packer Baker (DB) Well Open 6:00PM 6-26-91 Shut In _____

REMARKS: All Samples picked up in field by Tetra Rep. to be taken to Lab. See analysis by Tetra and Core Lab Signature Lee B., Tim A., Webb W., Nick B.

Fluid Produced was completion fluid and not formation water.

Wilcox Sand
Zones #3 & 4

HAYCO WELL TESTERS, INC.

P. O. BOX 51914 -:- LAFAYETTE, LA. 70505
318/269-1002

Customer: BHP Petroleum
Lease Bishop Cattle Co. #1
Customer Order No.
Field Freer, TX
Date 6-28-91

Time	Test Man. Choke XXXX	DWT XXXX	Heater Inlet	Bath Temp.	Tank Meter Oil	Tank Meter Water	BOPH	BOPD	BWPH	BWPD	Orifice Size High	Orifice Size Low	Diff. High	Diff. Low	Static High	Static Low	Gas Temp. High	Gas Temp. Low	PPM Chloride	MCFD Gas Volume High	MCFD Gas Volume Low	Casing	G. O. R.	Gravity	BS&W
11:30AM	22/64	358#	Open		Total Accum. Fluid = 62.2 Bbls. Rec. Wt. = 11.5#														237,000		210#				
12:00PM	"	291	"		Total Accum. Fluid = 62.7 Bbls. (BS&W = 30% Mud, 45% Water, & 25% Oil)														237,000		200				
12:30	"	252	"		Total Accum. Fluid = 63.0 Bbls. Rec.														237,000		200				
1:00	"	232	"		Total Accum. Fluid = 63.1 Bbls. Rec.														237,000		200				
1:30	"	239	"		Total Accum. Fluid = 63.17 Bbls. Rec.														237,000		200				
1:50	"	258	"		Coil Tubing coming out of hole																				
2:00	"	265	"		Dry N2 & Gas																200				
2:30	"	239	"																		200				
2:48	"	396	"		Coil tubing out of hole & rigging down																				
3:00	"	333	"		Changed choke to 10/64 adj. @ test manifold																200				
3:16	10/64	327	"		Changed choke to 10/64 Pos. @ Test Manifold																				
3:18	"	375			Shut well in to check choke																				
3:20		472	SIP																						
3:25	"	480	"		Open well on 10/64 adj. @ test manifold																				
3:30	"	466	Open																		190				
4:00	"	334	"																		190				
4:17	"	295	"		Changed to 12/64 adj. choke @ test manifold. Changed to .875 Orifice plate in meter run.																				
4:30	12/64	259									.875"										190				
5:00	"	236									.875		7"		100#		100°			129	190				
5:30	"	242	"		Changed choke to 8/64 adj. @ test manifold. Changed to .500" orifice plate in meter run																175				
6:00	8/64	319	"								.500		3		100		100			28	175				
6:30	"	369	"																		175				

PB TD 10,740' Perf. 10,520' - 10,612' Packer Set 10,406' Type Packer Baker DB Well Open 6:00PM 6-26-91 Shut In

REMARKS:

Signature Lee B., Tim A., Webb W., Nick B.

Wilcox Sand

House" #3 & 4

HAYCO WELL TESTERS, INC.

P. O. BOX 51914 -:- LAFAYETTE, LA. 70505
318/269-1002

Customer: BHP Petroleum — Customer Order No. — Date 6-28-91 & 6-29-91

Lease Bishop Cattle Co. #1 — Field Freer, TX

Test Manifold 5,761 MCFD Casing

Time	Choke XXX	DWT PSIG	Heater Inlet	Bath Temp.	Tank Meter Oil	Tank Meter Water	BOPH	BOPD	BWPH	BWPD	Orifice Size High	Orifice Size Low	Diff. High	Diff. Low	Static High	Static Low	Gas Temp. High	Gas Temp. Low	Chloride	Gas Volume High	Gas Volume Low	G. O. R.	Gravity	%BS&W
7:00PM	8/64	404#	Open								.500"		6"		100#		90°			39	175#			
7:30	"	427	"																		175			
8:00	"	442	"								.500		14		100		90			60	175			
8:30	"	451																			175			
9:00	"	443	"								.500		20		100		90			72	150			
9:30	"	430	"																		150			
10:00	"	422	"								.500		23		100		90			77	150			
10:26	"	421	"		Changed choke to 6/64 adj. @ test manifold																			
10:30	6/64	428	"																		100			
11:00	"	497	"								.500		14		100		90			60	100			
11:30	"	554	"																					
12:00AM	"	587	"								.500		10		100		90			51	100			
12:30	"	618	"																					
1:00	"	636	"								.500		15		100		90			62	100			
1:30	"	657	"		(Note) Gas Gravity: .630																			
2:00	"	671	"								.500		16		100		80			65	100			
2:30	"	679	"																					
3:00	"	680	"								.500		19		100		80			70	100			
3:30	"	684	"																		100			
4:00	"	688	"								.500		20		100		80			72	100			
4:30	"	687	"																					
5:00	"	685	"								.500		20		100		80			72	100			

PB T.D. 10,740' Perf. 10,520' - 10,612' Packer Set 10,406' Type Packer Baker (DB) Well Open 6:00PM 6-26-91 Shut In

REMARKS: Ran Gravity on gas @ 1:30AM (.630)

Signature Lee B., Tim A., Webb W., Nick B.

Wilcox Sand
House #3 & 4

HAYCO WELL TESTERS, INC.

P. O. BOX 51914 -:- LAFAYETTE, LA. 70505
318/269-1002

Customer: BHP Petroleum Customer Order No. Date 6-29-91

Lease Bishop Cattle Co. #1 Field Freer, TX.

Time	Test Manifold Choke	DWT PSIG	Heater Inlet	Bath Temp.	Tank Meter Oil	Tank Meter Water	BOPH	BOPD	BWPH	BWPD	Orifice Size High	Orifice Size Low	Diff. High	Diff. Low	Static High	Static Low	Gas Temp. High	Gas Temp. Low	Chloride	MCFD Gas Volume High	MCFD Gas Volume Low	Casing G. O. R.	Gravity	BS&W
5:30AM	6/64	684#	Open																		100#			
6:00	"	681	"								.500"		20"		100#		80°			72	100			

PB T.D 10,740' Perf 10,520' - 10,612' Packer Set 10,406' Type Packer Baker (DB) Well Open 6:00PM 6-26-91 Shut In

REMARKS: H2S 0 PPM 0% CO2 SP. GR. .63 Signature Lee B., Tim A., Webb W., Nick B.

Wilcox Sand
Dbuge #3 & 4

HAYCO WELL TESTERS, INC.

P. O. BOX 51914 -:- LAFAYETTE, LA. 70505
318/269-1002

Customer: BHP Petroleum Customer Order No. _____ Date 6-29-91

Lease: Bishop Cattle Co. #1 Field Freer, TX

Time	Test Manifold Choke	DWT	Heater Inlet	Bath Temp.	Meter Oil	Meter Water	BOPH	BOPD	BWPH	BWPD	Orifice Size MCFD High	Orifice Size MCFD Low	Diff. Casing High	Diff. Casing Low	Static High	Static Low	Gas Temp. High	Gas Temp. Low	Chloride	Gas Volume High	Gas Volume Low	G. O. R.	Gravity	BS&W
6:00AM	6/64	681#	Open								.500"		20"		100#		80°			72	100#			
6:30	"	679	"																					
7:00	"	680	"								.500		20		100		80			72	100			
7:13	"	679	"		Shut well in																			
7:17		712	SIP																		150			
7:30		810	"		Dowell Rigging up to pump into formation																150			
7:43					Closed master valve crown valve leaking - Dowell rigging up to tree (top)																			
8:32					Open master valve																			
8:33		925	SIP																					
8:48		1017	"		Dowell testing flow line (pump)																			
8:50					Dowell bled line down on pump																			
8:51					Open Crown Valve to Dowell																			
8:53		1050	SIP																					
8:54					Started pumping into well (injection test)																100			
8:59		804																			50			
9:00		791																			0			
9:05		2771																						
9:10		4890																						
9:15		5045																						
9:20		4955																						
9:25		4470			Dowell stop pump - check kill switch																			
9:30		4487																						

PB T.D. 10,740 Perf. 10,520' - 10,612' Packer Set 10,406' Type Packer Baker (DB) Well Open 6:00PM 6-26-91 Shut In 7:13AM 6-29-91

REMARKS:

Signature Lee B., Tim A., Webb W., Nick B.

HAYCO WELL TESTERS, INC.

P. O. BOX 51914 -:- LAFAYETTE, LA. 70505
318/269-1002

Customer BHP Petroleum — Customer Order No. — Date 6-29-91

Lease Bishop Cattle Co. #1 — Field Freer, TX.

Time	Choke Size	DWT PSIG	Heater Inlet	Bath Temp.	Tank Meter Oil	Tank Meter Water	BOPH	BOPD	BWPH	BWPD	Orifice Size High	Orifice Size Low	Diff. High	Diff. Low	Static High	Static Low	Gas Temp. High	Gas Temp. Low	Chloride	Casing Gas Volume High	Casing Gas Volume Low	G. O. R.	Gravity	BS&W
9:35AM		4747#			Dowell started pumping into well @ 2BPM Rate (62.3 Bbls. pumped in)																0#			
9:40		4868			Increased to 3BPM Rate																			
9:45		6590			(94.5 Bbls. pumped in)																25			
9:49		7502			(6BPM Rate)																50			
9:52					(7.5BPM Rate)																25			
9:55		7496																			25			
10:00		4502			Dowell stop pumping total pumped in = 200 Bbls.																25			
10:05		4535	SIP																					
10:10		4515	"		Dowell Rigging down																			
10:15		4509	"																					
10:20		4492	"																		10			
10:25		4480	"																					
10:30		4474	"																					
10:45		4449	"																		10			
11:00		4425	"																		10			
11:15		4397	"																		0			
11:30		4366	"																		0			
11:45		4335	"																		0			
12:00PM		4300	"																		0			
12:15		4263	"																		0			
12:30		4226	"																		0			
12:45		4190	"																		0			

PB T.D 10,740 — Perf. 10,520' - 10,612' — Packer Set 10,406' — Type Packer Baker (DB) — Well Open 6:00AM 6-26-91 — Shut In 7:13AM 6-29-91

REMARKS:

Signature Lee B., Tim A., Webb W., Nick B.

Wilcox Sand
House #3 & 4

HAYCO WELL TESTERS, INC.

P. O. BOX 51914 -:- LAFAYETTE, LA. 70505
318/269-1002

Customer: BHP Petroleum
Lease Bishop Cattle Co. #1
Customer Order No.
Field Freer, TX.
Date 6-29-91

Time	Choke Tbg	DWT ~~XXDC~~	Heater Inlet	Bath Temp.	Tank ~~Oil~~ Water Oil	Tank Meter Water	BOPH	BOPD	BWPH	BWPD	Orifice Size High	Orifice Size Low	Diff. High	Diff. Low	Static High	Static Low	Gas Temp High	Gas Temp Low	Chloride	Gas Volume High	Gas Volume Low	G. O. R.	Gravity	BS&W
1:00PM		4155#	SIP																					
1:15		4121	"																					
1:30		4092	"																					
1:45		4064	"																					
2:00		4038	"																					
2:15		4012	"		At Las Rigging up to well head																			
2:18					Disconnected spider from well																			

PBTD 10,740' Perf. 10,520' - 10,612' Packer Set 10,406' Type Packer Baker (DB) Well Open 6:00AM 6-26-91 Shut In 7:13AM 6-29-91

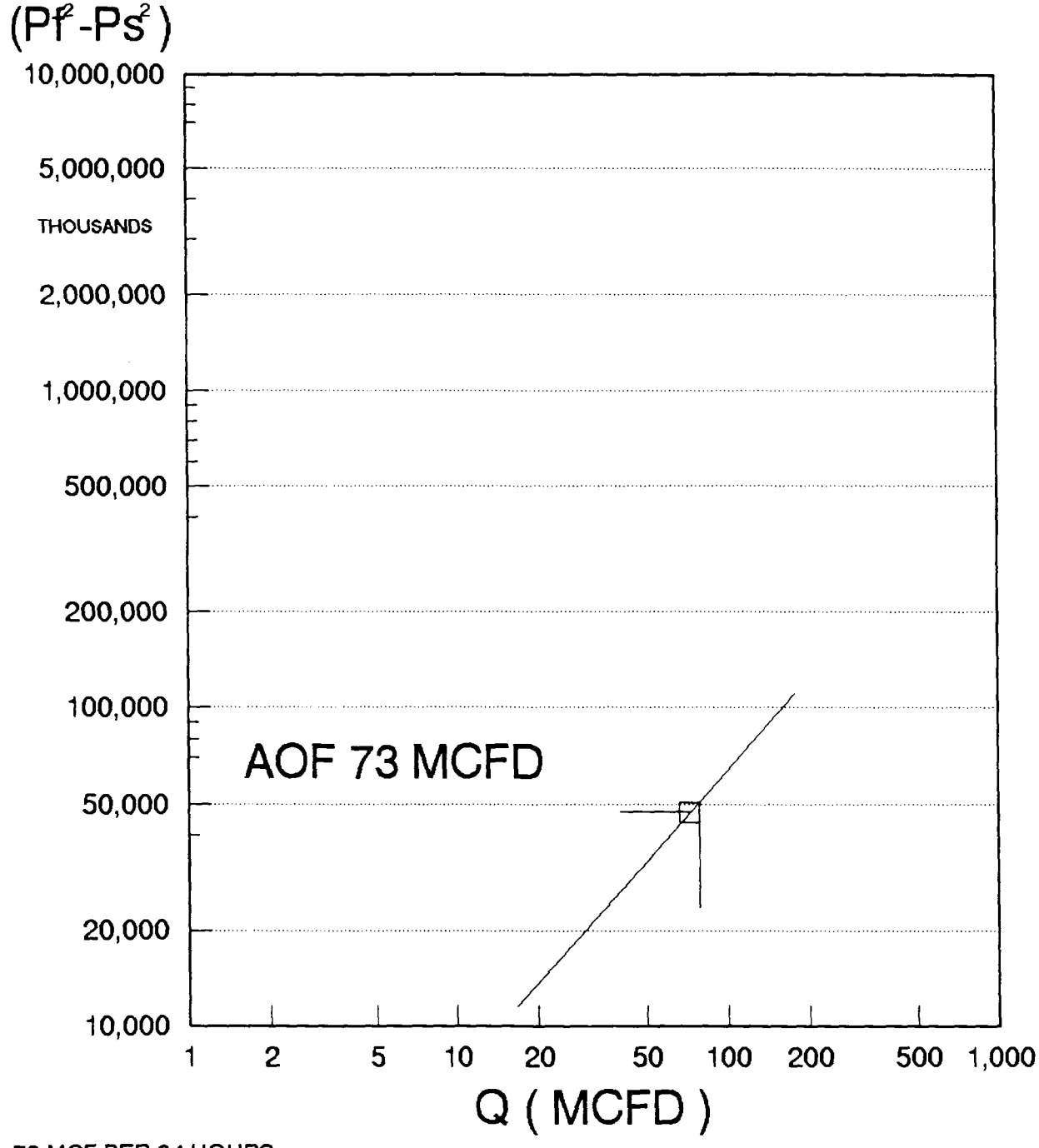
REMARKS:

Signature Lee B., Tim A., Webb W., Nick B.

BISHOP CATTLE COMPANY NO. 1

PROSPERO AREA

GAS WELL BACK PRESSURE CURVE



72 MCF PER 24 HOURS
6/26/91 INTERVAL 10520 TO 10612 FEET E.L.M.
Θ=45.0° N = 1

EXHIBIT 11A

BISHOP CATTLE COMPANY NO. 1

AOF CALCULATION

INTERVAL 10520 TO 10612 FT. ELM. MIDPOINT = 10566 FT.

72 MCFD O BCPD O BWPD WITH TUBING PRESSURE OF 685 # ON A 6/64 CHOKE (6/2/91)

FROM INITIAL STATIC GRADIENT SURVEY; Pf IS 6927 # AT 10566'

WITH LAST PRODUCING RATE OF 72 MCFD & ESTIMATED FLOWING BHP OF 836 PSI

SOLVE FOR AOF:

$Q = C(Pf^2-Ps^2)$, ASSUMING N=1,

SOLVING FOR C, WHERE Pf = 6927 PSI, Ps = 836 PSI,

$C = 72 \text{ MCFD}/[(6927)^2-(836)^2] = 1.523 \times 10^{-6} \text{ MCFD/PSI}^2$

$AOF = (1.523 \times 10^{-6})[(6927)^2-(14.7)^2] = 73 \text{ MCFD}$

EXHIBIT 11b

BISHOP CATTLE COMPANY NO. 1
PROSPERO AREA
RESERVOIR DATA SHEET

INTERVAL: 10892 TO 11060 FT. ELM.

RESERVOIR PRESSURE:	8322 PSI AT 10976 FT.	
RESERVOIR TEMPERATURE:	314 F	
GAS GRAVITY:	0.635	
NET FEET OF PAY:	10	
PERMEABILITY:	0.048 MD	FROM SEMI-LOG STRAIGHT LINE
SKIN:	-0.6	
PERMEABILITY:	0.07 MD	FROM MODEL MATCH OF SEMI-LOG
SKIN:	2.1	
FINAL RATE	169 MCFD	
CUMULATIVE PRODUCTION	362 MCF	
PRODUCING TIME	56 HOURS	
EQUIVALENT PRODUCING TIME	51.4 HOURS	
FLOWING PRESSURE	2845 PSI	(BOTTOM HOLE)

EXHIBIT 12

BISHOP CATTLE COMPANY NO. 1
PROSPERO AREA
RESERVOIR DATA SHEET

INTERVAL: 10520 TO 10612 FT. ELM.

RESERVOIR PRESSURE:	6922 PSI AT 10566 FT.	
RESERVOIR TEMPERATURE:	305 F	
GAS GRAVITY:	0.63	
NET FEET OF PAY:	14	
FINAL RATE	72 MCFD	
FLOWING PRESSURE	836 PSI	(BOTTOM HOLE)

EXHIBIT 13

Bishop Cattle Co. No. 1
5-JUN-91 @ 10:23:44
Depth Axes Curve : DEPTH Units : FT

EXHIBIT 14

1/ 600 FEET

	IDCR		Q		SW		CLAY		
0	API	150	1	-3	0	dec	1	0	percent	1
	CALI		PHIE		BUCKL		POROSITY		
4	IN	14	.3	DECP	0	0	20	1	percent	0
				BVW					
			.3		0				

10000
10500
11000
11500

1/ IDCR Q SW CLAY

DEPTH OF USABLE-QUALITY GROUND WATER TO BE PROTECTED

PLEASE READ ALL INSTRUCTIONS!

The information requested is essential in order for this agency to provide an appropriate response. Please allow for receipt of this form in our offices at least one week before your operation begins. Due to the volume of these requests, it is difficult for us to handle telephone inquiries, and such only serve to delay the processing of these forms. Complete, keep the bottom sheet (yellow) for your files, and mail the top 4 sheets of this 5-sheet set of carbon-backed forms to the address below; 1 of them will be returned to you bearing our response and others will be sent to the Austin and appropriate district office of the Railroad Commission.

Surface Casing
Texas Water Commission
P.O. Box 13087, Capitol Station
Austin, Texas 78711 (Phone: 512/463-8003)

Date 3/19/91 TWC File No.: SC- 7532

Do not write in this space

Sheila Green 713/780-5061
Name of person preparing this request & Telephone No. w/AC

BHP Petroleum (Americas) Inc.
Company (operator's name as on RRC form W-1)

5847 San Felipe #3600
Mailing Address

Houston, Texas 77057
City and State Zip Code

Fold

TYPE OR PRINT IN INK

COUNTY Duval Survey Name & No. J. J. White
Block No. _____ Township _____ Section _____ (or) Lot No. _____
Abstract No. A- 1800 LEASE Name Bishop Cattle Company Well No: 1
THE ABOVE INFORMATION IN THIS BLOCK MUST BE COMPLETE AND CORRECT!!!
RRC Lease No. _____ RRC Dist. No. _____

Distances, in feet, and directions measured at right angles from each of two intersecting Section or Survey lines (NOT LEASE LINES) 1623 feet from north line and 2125 feet from east line

ALWAYS attach a map showing all surrounding SURVEYS and your well site.

Distance (in miles) and direction from a nearby town in this County (name the town). 5 miles South from Freer, Texas

Elevation (if avail.) _____ Proposed Total Depth 14500 Geologic Fm. at T.D. _____

Purpose of the Request: ☒ New Drill ☐ Re-entry ☐ Plug & Abd. ☐ Other (specify) _____

Is this an amended request? ☐ YES ☒ NO If 'yes', give previous File No. for this well: SC- _____

Additional data (check if attached):

Log of same or nearby well _____ (The applicable type of well log of a nearby well that shows the aquifers.)

ALWAYS attach the electric log of any well that is to be reentered.

Additional remarks: _____

The TEXAS WATER COMMISSION'S recommendation for the protection of usable-quality ground water at the referenced location is as follows:

CO-DUVAL,SUR-WHITE J.,SEC-74,A-1800,#1,4/800;THE ELECTRIC

Fold

The interval from the land surface to a depth of 800 feet must be protected.

Please send THE ELECTRIC log of this well when it is available.

DO NOT WRITE HERE
FOR TWC USE ONLY

Very truly yours,

Art Hopkins
Geologist, Surface Casing, TWC

Date March 21, 1991
typed by TWC

NOTE: The depth to which we recommend that usable-quality water strata should be protected is intended to apply only to the subject well and not for area-wide use. Approval of the well-completion methods for protection of this ground water falls under the jurisdiction of the Railroad Commission of Texas. **This recommendation is intended for normal drilling, production, and plugging operations only and does not apply to salt water disposal operations into a nonproductive zone (RRC Form W-14).**

EXHIBIT 15A

Date: April 9, 1991

Railroad Commission of Texas
District 04
P. O. Box 10307
Corpus Christi, Texas 78460-0307

RE: Surface Casing Exception

Operator: BHP Petroleum (Americas), Inc. Phone: 713/780-5057
Address: 5847 San Felipe, Suite 3600
Houston, Texas 77057
Lease: Bishop Cattle Co. Well no. 1 Field: Wildcat
County: Duval Proposed TD: 14500
Drilling Permit number: 385949 Date: 3/20/91
Recommended depth of usable quality water and any separation zones from the Texas Water Commission surface to 800 feet.
Date of letter 3/19/91 S. C. # 7532

PROPOSED CASING AND CEMENTING RECORD FOR ALL CASING PROTECTING USEABLE QUALITY WATER

CASING	HOLE SIZE	CASING SIZE	SETTING DEPTH	NO OF SACKS	SLURRY YIELD
Surface Casing	22"	16"	1200'	1140	2.10
Cement Type	15:85:8 Poz:A + gel + 3% salt				
Surface Casing				500	1.18
Cement Type	Class A neat				
Intermediate	14 3/4"	11 3/4"	8500'	360	1.62
Cement Type	35:65:6 Poz A+.2% D13 retarder				
Intermediate				420	1.40
Cement Type	Class H + 35% Silica Flour + 0.2% D13 retarder				
Drilling Liner	10 5/8"	9 5/8"	8200-10800'	380	1.39
Cement Type	Class H + 35% Sicica Sand +.05 gps D604 TIC+.6 gps D600+.15% D28 retarder+.05 gps D47 antifoam+.05 gps D135 stabilizer				
Production Csg	8 1/2"	7"	13500'	357	1.64
	Class "H"				

Is this well located within city limits? no
If yes which city? NA
Depth on any fresh water wells within 1/4 mile of well location.
no known fresh water wells within 1/4 of well location
Please list the 72 hr compressive strength of the cement slurry that will be placed across the deepest depth of usable quality water.
1200 psi.
Remarks: Because of the potential for unconsolidated sands with low frac gradients, it is desirable to set the 16" shoe below shallow surface sands which extend to ±1000' to ensure a 12.2 frac gradient, thus being able to set the 11 3/4" as deep as possible and eliminate the need to set additional casing prior to TD.

Signature: Ron Campbell Title: Regulatory Adm. Supv.

EXHIBIT 15B

OFFICE OF

RAILROAD COMMISSION OF TEXAS

RECEIVED
APR 12 1991
REGULATORY DEPT.

April 9, 1991

BHP PETROLEUM (AMERICAS) INC
5847 SAN FELIPE STE 3600
HOUSTON TX 77057

Re: Bishop Cattle Co. Lease, Well No. 1, Duval County, Texas

Pursuant to your request dated April 9, 1991, this letter will be your authority to set approximately 1,200 feet of surface casing on the captioned well. Please note that a copy of this letter must be kept on location during all phases of drilling and/or plugging operations. If further information is needed, please contact this office.

Yours very truly,

FERMIN MUNOZ, JR.
District Director

FM/slg

EXHIBIT 15C

[¶ 24,173]

§ 271.703 Tight formations.

(a) *Maximum lawful price for tight formation gas.* (1) The maximum lawful price, per MMBtu, for the first sale of tight formation gas for which there is a negotiated contract price or a pipeline production price shall be the lesser of:

(i) The negotiated contract price or the pipeline production price, as applicable; or

(ii) 200% of the maximum lawful price specified for Subpart C—NGPA Section 103(b)(1) of Part 271 in Table I of § 271.101(a).

(2) The maximum lawful price does not apply to:

(i) New tight formation gas from a well the surface drilling of which began on or after May 13, 1990; and

(ii) Recompletion tight formation gas from a well the surface drilling of which was begun before July 16, 1979, if the recompletion work for the well from such designated formation was begun on or after May 13, 1990.

(b) *Definitions.* (1) "Tight formation gas" means natural gas that a jurisdictional agency has determined in accordance with Parts 274 and 275 to be new tight formation gas or recompletion tight formation gas.

(2) "New tight formation gas" is natural gas:

(i) Which is new natural gas, (as defined in section 102(c)), certain OCS gas qualifying for the new natural gas ceiling price (as defined in section 102(d)), or gas produced through a new onshore production well (as defined in section 103(c)); and

(ii) Which is produced from a designated tight formation through a well the surface drilling of which began on or after July 16, 1979.

(3) "Recompletion tight formation gas" is natural gas which is produced from a designated tight formation through a well, the surface drilling of which was begun before July 16, 1979,

(i) If such well was not completed for production from such designated formation prior to July 16, 1979, or

(ii) If such well was completed for production from such designated formation prior to July 16, 1979, such gas is produced from a completion location completed after December 27, 1983, and such gas could not have been produced from any completion location which was in existence in the wellbore on or before December 27, 1983.

(4) "Formation" means any geological formation, or portion thereof described by geological as well as geographical parameters.

(5) A "designated tight formation" is a natural gas formation as determined by the appropriate jurisdictional agency, pursuant to paragraph (c)(3) of this section. Appropriate jurisdictional agencies are identified in § 274.501 of this chapter.

TX onshore = Railroad Commission

(6) "Infill drilling" means any drilling in a substantially developed formation (or a portion thereof) subject to requirements respecting well-spacing or proration units which were amended by the jurisdictional agency after the formation (or portion thereof) was substantially developed and which were adopted for the purpose of more effective and efficient drainage of the reservoirs in such formation. Such amendment may provide for the establishment of smaller drilling or production units or may permit the drilling of additional wells on the original units.

(c) *Determination of tight formations.*

(1) *General.* Determinations by a jurisdictional agency must be made in the form and manner prescribed in Part 274 of this chapter.

(2) *Guidelines.* (i) The guidelines for tight formations are as follows:

(A) The estimated average *in situ* gas permeability, throughout the pay section, is expected to be 0.1 millidarcy or less.

(B) The stabilized production rate, against atmospheric pressure, of wells completed for production in the formation, without stimulation, is not expected to exceed the production rate determined in accordance with the following table:

If the average depth to the top of the formation (in feet)		The maximum allowable production rate (in thousand cubic feet per day) may not exceed—
exceeds—	but does not exceed—	
0	1,000	44
1,000	1,500	51
1,500	2,000	59
2,000	2,500	68
2,500	3,000	79
3,000	3,500	91
3,500	4,000	105
4,000	4,500	122
4,500	5,000	141
5,000	5,500	163
5,500	6,000	188
6,000	6,500	217
6,500	7,000	251
7,000	7,500	290
7,500	8,000	336
8,000	8,500	388
8,500	9,000	449
9,000	9,500	519
9,500	10,000	600
10,000	10,500	693
10,500	11,000	802
11,000	11,500	927
11,500	12,000	1,071
12,000	12,500	1,238
12,500	13,000	1,432
13,000	13,500	1,655
13,500	14,000	1,913
14,000	14,500	2,212
14,500	15,000	2,557

[The next page is 14,241.]

(C) No well drilled into the recommended tight formation is expected to produce, without stimulation, more than five barrels of crude oil per day.

(D) If the formation or any portion thereof was authorized to be developed by infill drilling prior to the date of determination and the jurisdictional agency has information which in its judgment indicates that such formation or portion subject to infill drilling can be developed absent the incentive price established in paragraph (a) of this section then the jurisdictional agency shall not include such formation or portion thereof in its determination.

(ii) The jurisdictional agency may designate as a tight formation any formation which meets the guidelines contained in paragraph (c)(2)(i)(B) and (C) of this section, but does not meet the guideline contained in paragraph (c)(2)(i)(A) of this section, if the jurisdictional agency makes an adequate showing that the formation exhibits low permeability characteristics and the price established in paragraph (a) of this section is necessary to provide reasonable incentives for production of the natural gas from the determined formation due to the extraordinary costs associated with such production.

(3) *Notice to the Commission.* Any jurisdictional agency making a determination that a natural gas formation qualifies as a tight formation will provide timely notice in writing of the determination to the Commission. Such notice shall include substantiation provided in paragraph (4) of this section and be in the manner prescribed in § 274.104 of this chapter.

(4) *Content of determinations.* A determination that a formation qualifies as a designated tight formation shall contain the following information:

(i) Geological and geographical descriptions of the formation which is determined to qualify as a tight formation;

(ii) Geological and engineering data to support the determination and the source of that data;

(iii) A map which clearly locates wells which are currently producing from the determined tight formation or a list locating all wells which are currently producing natural gas from the determined tight formation;

(iv) A report of the extent to which existing State and Federal regulations will assure development of the determined tight formation will not adversely affect any fresh water aquifers (during both hydraulic fracturing and waste disposal operations) that are or are expected to be used as a domestic or agricultural water supply;

(v) If the formation is determined under paragraph (c)(2)(ii) of this section, the types and extent of enhanced production techniques which are expected to be necessary and the estimated expenditures necessary for employing those techniques; and the degree of increase in production to be expected from use of such techniques and engineering and geological data to support that estimate; and

(vi) Any other information which the jurisdictional agency deems relevant.

(5) *Commission review of determinations.* Upon receipt of a determination submitted in accordance with this section, the Commission will review the jurisdictional agency's determination in accordance with the procedures established in Part 275 of this chapter.

(d) *Designated tight formations.* The following formations are designated as tight formations. A more detailed description of the geographical extent and geological parameters of the designated tight formations is located in the Commission's official file for Docket No. RM79-76, subindexed as indicated, and is also located in the official files of the jurisdictional agency that submitted the recommendation.

(1) *The Cotton Valley Group in Texas.* RM79-76 (Texas—1).

(i) *The Cotton Valley Group consisting of the Cotton Valley Sandstone, the Bossier Shale and the Cotton Valley Lime Formations.*—(A) *Delineation of formation.* The northern boundary of the Cotton Valley Group is the Texas-Oklahoma border extending through Fannin, Lamar, and Red River Counties; the eastern boundary is formed by the Texas-Arkansas border and the Texas-Louisiana border; the southern boundary is along the Angelina-Caldwell flexture, running through Sabine, San Augustine, Angelina and Trinity Counties; the western boundary is set by the Mexia-Talco fault zone through Limestone, Navarro and Kaufman Counties.

(B) *Depth.* The Cotton Valley Sandstone is encountered at an average depth of approximately 7,000 feet to the north, 8,000 feet to the east, between 10,000 and 11,000 feet to the south, and 5,000 feet to the west; the Bossier Shale is encountered at 7,700 feet to the north, 10,720 feet to the east, 12,600 feet to the south, and 5,340 feet to the west; the Cotton Valley Lime is encountered at 8,000 feet to the north, 11,400 feet to the east, 13,200 feet to the south, and 5,500 feet to the west.

(ii) *The Cotton Valley Sandstone in the Paige, N.E. Field area.*—(A) *Delineation of formation.* The Cotton Valley Sandstone in the Paige, N.E. Field area is found in the eastern portion of Bastrop County, Texas, in Railroad Commission District No. 1. The boundaries of the Cotton Valley Sandstone are approximately 2.5 miles around the Hou-Tex Oil and Gas No. 1 O.R. Mitchell Well. This well is in the Paige, N.E. Field, located two miles from Paige, Texas, in the Wm. Boatwright Survey, A-82.

(B) *Depth.* The top and base of the Cotton Valley Sandstone in the Paige, N.E. Field area are found at the approximate subsea depths of −11,520 feet and −12,780 feet, respectively. The maximum thickness of the formation is approximately 1,790 feet.

(2) *The Mancos "B" Formation in Colorado.* RM79-76 (Colorado—2).

(i) *Delineation of formation.* The Mancos "B" Formation is located approximately midway between Grand Junction and Rangely, Colorado, and straddles the Rio Blanco-Garfield county line from the Utah-Colorado state line east to the Douglas Pass and Baxter Pass Unit Area, underlying

[The next page is 14,247.]

(i) *Delineation of formation.* The Fort Union Formation is found in Pinedale Field in Sublette County, Wyoming.

(ii) *Depth.* The Fort Union Formation is defined as that formation occurring between the Wasatch Formation above and the Lance Formation below, at an average measured depth interval of 7,258 feet to 10,516 feet.

(17) *The Midway (11,740') Sandstone Formation in Texas.* RM79-76 (Texas—6)

(i) *Delineation of Formation.* The Midway (11,740') Sandstone Formation is located in the northwestern portion of Montgomery County and the southeastern portion of Grimes County, Texas.

(ii) *Depth.* The top of the Midway (11,740') Sandstone Formation is located at an approximate depth of 11,746 feet and the base is located at an approximate depth of 11,774 feet, giving it a thickness of 28 feet.

(18) *Lower Wilcox Formation in Texas.* RM79-76 (Texas—7).

(i) *Three County Area.*—(A) *Delineation of formation.* The Lower Wilcox Formation is found in the southern portion of Austin County, the northern portion of Wharton County, and the eastern portion of Colorado County, Texas.

(B) *Depth.* The top of the Lower Wilcox Formation is located at an approximate depth of 11,700 feet and the base is located at an approximate depth of 12,700 feet, giving a thickness of 1,000 feet.

(ii) *Bonus, S. (Wilcox 13,900') Field.*—(A) *Delineation of formation.* The Lower Wilcox Formation is found in the Bonus, S. (Wilcox 13,900') Field, Wharton County, Texas, approximately 10 miles south of the town of Eagle Lake. The formation is described by a 2.5 mile radius around the Laurel Fuel Company Winterman No. 3 well, and covers approximately 19.6 square miles.

(B) *Depth.* The top of the Lower Wilcox Formation is at an approximate depth of 13,900 feet and is between 60 and 70 feet thick.

(iii) *Lower Wilcox (Midcox) Formation.*

(A) *Delineation of formation.* The Lower Wilcox (Midcox) Formation is found approximately five miles northeast of the town of Rock Island in central Colorado County, Texas, Railroad Commission District 3. The designated area is within a 2.5 mile radius around the Holt Oil & Gas Corporation (formerly Perkins Oil Company) Kleimann Unit No. 1 well located in the J.E. Hester Survey A-740.

(B) *Depth.* The top of the Lower Wilcox (Midcox) Formation is found at an approximate log depth of 11,650 feet in the Kleimann Unit No. 1 well and is 344 thick.

(19) *Atoka Formation in New Mexico.* RM79-119 (New Mexico—2).

(i) *Delineation of formation.* The Atoka Formation is found in Lea County, New Mexico, and underlies an area approximately 9 miles north of Lovington, New Mexico, 3 miles southwest of Tatum, New Mexico, and 15 miles west of the Texas border. The formation underlies Township 12 South, Range 35 East, Sections 31 through 36; Township 12 South, Range 36 East,

southwest of the town of Glenwood Springs, Colorado. The formation consists of the following: Township 7 South, Range 90 West, 6th P.M., Sections 1 through 36; Township 7 South, Range 91 West, 6th P.M., Sections 1 through 36; and Township 8 South, Range 90 West, 6th P.M., Sections 1 through 12.

(ii) *Depth.* The Cozzette Formation is a member of the lower Mesaverde Group. The average depth to the top of the Cozzette Formation is 7,477 feet. Its base is defined as the top of the Corcoran Formation.

(34) *Corcoran Formation in Colorado.* RM79-76 (Colorado—12).

(i) *Delineation of formation.* The Corcoran Formation is located in the Piceance Creek Basin in Garfield County, Colorado, approximately 12 miles southwest of the town of Glenwood Springs, Colorado. The formation consists of the following: Township 7 South, Range 90 West, 6th P.M., Sections 1 through 36; Township 7 South, Range 91 West, 6th P.M., Sections 1 through 36; and Township 8 South, Range 90 West, 6th P.M., Sections 1 through 12.

(ii) *Depth.* The Corcoran Formation is a member of the lower Mesaverde Group. The average depth to the top of the Corcoran Formation is 7,677 feet. Its base is defined as the top of the Mancos Shale Formation.

(35) *Geopressured Wilcox Lobo Sandstone Formation in Texas.* RM79-76 (Texas-8).

(i) *Delineation of formation.* The Geopressured Wilcox Lobo Sandstone Formation is located in the southern part of Texas in Webb and Zapata Counties, Railroad District 4, and is located below the Lower Wilcox Group and above the Wills Point Formation which is part of the Midway Group.

(ii) *Depth.* The highest portion of the Geopressured Wilcox Lobo Sandstone Formation appears at 5,840 feet. The approximate thickness varies from 1,175 feet in the north to 3,130 feet in the south.

(36) *The Travis Peak Formation in Texas.* RM79-76 (Texas—9) and (Texas—9 Addition and Additions II, III, IV and VI).

(i) *Sym-Jac, West (Hosston) Field.*

(A) *Delineation of formation.* The Travis Peak Formation in the Sym-Jac, West (Hosston) Field is found in Cherokee County, Texas, Railroad Commission District 6.

(B) *Depth.* The top and base of the Travis Peak Formation in the Sym-Jac, West (Hosston) Field are found at approximately 9,850 feet and 12,050 feet, respectively, giving a thickness of approximately 2,200 feet.

(ii) *Bear Grass Area.*

(A) *Delineation of formation.* The Travis Peak Formation in the Bear Grass area is found in portions of Freestone and Leon Counties, Texas, Railroad Commission District 5. The area is elliptical with a northeast/southwest major axis and contains approximately 5 square miles. The center of the area is approximately 2 miles east of the point of intersection of Freestone, Leon and Limestone Counties and is situated in portions of the following surveys: Gertrude Diaz A-178 and A-1276, Isaac

Ranges 7 and 8 West; and Township 31 North, Range 6 West, NMPM, in San Juan and Rio Arriba Counties, New Mexico.

(ii) *Depth.* The average depth to the top of the Pictured Cliffs Formation is approximately 3,200 feet. The thickness of the Pictured Cliffs Formation ranges from 150 to 250 feet.

(63) *Wilcox Formation in Texas.* RM79-76 (Texas—11).

(i) *Aviators, N. (12,000) Field.*—(A) *Delineation of formation.* The Wilcox Formation found in the area of the Aviators, N. (12,000) Field, Webb County, Texas, is within a 2.5 mile radius around the Pennzoil Producing Company No. 53-1 B.M.T.-Alice B. Hall well and covers approximately 19.6 square miles.

(B) *Depth.* The top of the Wilcox Formation, Aviators, N. (12,000) Field is at approximately −11,085 feet subsea and is 114 feet thick.

(ii) *Roma, W. (Wilcox 10,100) Field.*—(A) *Delineation of formation.* The Wilcox Formation found in the area of the Roma, W. (Wilcox 10,100) Field, Starr County, Texas, is within a 2.5 mile radius around the Border Exploration Company No. 1 H.P. Guerra Jr., *et al.* well and is adjacent to the Rio Grande River.

(B) *Depth.* The top of the Wilcox Formation, Roma, W. (Wilcox 10,100) Field is at approximately 9,750 feet and extends to 10,750 feet, resulting in a total thickness of 1,000 feet.

(iii) *West Cole Field—(A) Delineation of formation.* The Wilcox Formation in the area of the West Cole Field, Webb County, Texas, is located approximately 36 miles east of the city of Laredo, Texas, and is within a 2.5 mile radius around the Forest Oil Corporation No. 1 Rosa V. de Benavides well.

(B) *Depth.* The top of the Wilcox Formation, West Cole Field, is at approximately 9,135 feet and extends to 10,315 feet (log depths), resulting in a total thickness of 1,180 feet.

(iv) *Taquachie Creek Field.*

(A) *Delineation of formation.* The Wilcox Formation found in the area of the Taquachie Creek (Wilcox 11,162) Field, Zapata County, Texas, is located approximately 7 miles south of Mirando City, Texas, and is within a 2.5 mile radius around the Blocker Exploration Company No. 1-252 L. Amour Hinnant well.

(B) *Depth.* The top of the Wilcox Formation, Taquachie Creek (Wilcox 11,162) Field is log-measured at approximately 11,162 feet and extends to 11,200 feet, resulting in a total thickness of 38 feet.

(v) *Wilcox First Hinnant Formation in Jim Hogg County.*

(A) *Delineation of formation.* The Wilcox First Hinnant Formation is located entirely within the northwestern portion of Jim Hogg County in south Texas, Railroad Commission District 4, approximately 7 miles northeast of the city of Randado, Texas. The designated area is rectangular and begins at a point at the southwest corner of Section 164, C. Gutierrez Survey A-145, then

due north 22,700 feet to a point in Section 98, E.L. Armstrong A-3 Survey (scaled 2,100 feet FWL and 1,800 feet FSL of Survey), then due west 32,200 feet to a point in Los Animos, Heirs of Felipe de la Pena Grant, A-244 (scaled 9,200 feet FSL and 24,500 feet FEL of said Grant), then due south 22,700 feet to a point scaled on the common boundary between Section 578, R.L. Robinson A-267, and Section 575, W.W. Ferguson A-104, being 6,000 feet south of the north line of the common north boundary of said Sections 578 and 575, then due east 32,200 feet to point of beginning, comprising 16,700 acres, or approximately 26 square miles.

(B) *Depth.* The top of the Wilcox First Hinnant Formation is encountered at 12,292 feet in the Edwin L. Cox and Berry R. Cox, Martinez No. 1 Well. The thickness reaches a maximum of 100 feet in the Northeast Thompsonville Field area, located 4½ miles northwest of the Cox Martinez No. 1 well. Downdip from the Northeast Thompsonville Field area, at the Cox Martinez No. 1 well, the sand has noticeably thinned and become shalier, with a total thickness of 58 feet.

(vi) *South Campana (Wilcox 10,400') Field.*

(A) *Delineation of formation.* The Wilcox 10,400' Formation is located in the South Campana (Wilcox 10,400') Field in McMullen and Duval Counties, in south Texas, Railroad Commission Districts 1 and 4, approximately 18 miles northeast of Freer, Texas. The designated area includes all of the acreage within a 2.5 mile radius around the ARCO H. C. Edrington I No. 33 well, which is located in the southeast quarter of Section 61, A. B. & M. Survey, Abstract 43, McMullen County, Texas.

(B) *Depth.* The average depth to the top of the Wilcox 10,400' Formation is approximately 10,890 feet. The subject formation averages from 10 to 12 feet in thickness within the geographical area.

(64) *Mesaverde Formation in Colorado.* RM79-76 (Colorado—17).

(i) *Delineation of formation.* The Mesaverde Formation is found in Garfield County, Colorado, in Township 6 South, Range 93 West, 6th P.M., Sections 3 through 10, 15 through 22, 27 through 34; Township 6 South, Range 94 West, 6th P.M., Sections 1 through 3, 7 through 36; Township 6 South, Range 95 West, 6th P.M., Sections 25 through 36; Township 7 South, Range 94 West, 6th P.M., Sections 1 through 9, 16 through 18; Township 7 South, Range 95 West, 6th P.M., Sections 1 through 24, 27 through 34; Township 7 South, Range 96 West, 6th P.M., Sections 1 through 36; Township 8 South, Range 96 West, 6th P.M., Sections 1 through 6.

(ii) *Depth.* The Mesaverde Formation is defined as that formation encountered between the base of the Wasatch Formation (Tertiary) and the top of the Mancos shale. The average depth to the top of the Mesaverde Formation is 4,475 feet.

(65) *The Upper Mancos Formation in Colorado.* RM79-76 (Colorado—20).

in thickness and begins at the base of the Ohio Creek Conglomerate and extends to the top of the Marine Marcos Shale.

(128) *Vicksburg Formation in the Portilla (9000') Field in Texas.* RM79-76 (Texas—29).

(i) *Delineation of formation.* The Vicksburg Formation in the Portilla (9000') Field is located in the northern portion of San Patricio County, Texas, Railroad Commission District 4, approximately six miles northeast of Sinton, Texas, and underlies 15,000 acres of land bounded by the Chiltipin Creek to the south, U.S. Highway 77 to the west, and the Aransas River to the north. The eastern boundary is a line extending from the Chiltipin Creek on the south to the Aransas River on the north and approximately bisecting the following surveys; Isaac Clover A-89, N.J. Devenny A-105, and Ralph Ellis Hrs. A-115.

(ii) *Depth.* The depth to the top of the Vicksburg Formation in the portilla (9000') Field varies between 8,600 feet and 9,000 feet and the formation extends to depths in excess of 11,000 feet.

(129) *Cleveland Formation in Texas.* RM79-76 (Texas—18).

(i) *Delineation of formation.* The Cleveland Formation is found in the northeast Texas Panhandle and consists of all of Lipscomb, Ochiltree and Hansford Counties, virtually all of Hemphill County, approximately the northern halves of Hutchinson and Roberts Counties, and approximately the northeast quarter of Wheeler County, Texas.

(ii) *Depth.* The top of the Cleveland Formation is located near 2500 feet subsea to the west in Hansford County, Texas, and near 9700 feet subsea in Wheeler County, Texas, to the southeast. The Cleveland Formation is approximately 154 feet thick as demonstrated in a type log from the Diamond Shamrock Corporation No. 1 J.A. Little Well in Lipscomb County, Texas.

(130) *Middle Wilcox (11,000-15,000') Formation in Texas.* RM79-76 (Texas—27).

(i) *Delineation of formation.* The Middle Wilcox Formation is located in Lavaca County, Texas, Railroad Commission District 2. The designated area is located 14 miles east-southeast of Halletsville, Texas, and 8 miles south-southeast of Sublime, Texas, and is comprised of the following 15 surveys: James Ryan A-42, Miguel Muldoon A-34, E.W. Perry A-359, Lev. T. Bostiok A-95, F.W. Perry A-358, P. Ansuldua A-621, F. Baseldua A-622, Peter Garza A-632, J.A. Wynmaker A-499, John W. Seymour A-431, H.L and B.P.R. A-523, A.M. Gillespie A-633, H.F. and W.T.R.R. A-551, H.E. and W.T.R.R. A-550, and North ⅓ John D. Ragsdale A-377.

(ii) *Depth.* The Middle Wilcox Formation is defined as that formation which is encountered between 11,000 feet and 15,000 feet as measured on the log of the Mitchell Energy Corporation C.F. Aschbacher No. 1 well. The top of the Middle Wilcox pay ranges in depth from approximately – 11,200 feet in the north to – 13,300 feet in the south.

(131) *Devonian Formation in Texas.* RM79-76 (Texas—35).

(158) *Upper Wilcox (Mackhank) (First Tom Lyne) Formation in Texas.* RM79-76-162 (Texas—31).

(i) *Delineation of formation.* The Upper Wilcox (Mackhank) (First Tom Lyne) Formation is located in the southwestern portion of Live Oak County, Texas, Railroad Commission District 2, approximately five miles east of the townsite of Clegg, Texas, and consists of the following surveys: A. B. & M. 167 A-47, and 173 A-50, B. S. & F. 301 A-741, 29 A-132, 251 A-113, 253 A-114, 255 A-115, 257 A-116, 259 A-117, 177 A-92, 261 A-118, 181 A-94, 263 A-19, 265 A-120, 175 A-81, and 179 A-93, F.L. Beall 178 A-823, R.H. Brown 526 A-734, and 525 A-732, R.F. Byler 530 A-999, T.J. Davis 32 A-567, A.A. Dinn 182 A-941, 82 A-940, and 90 A-939, James Dinn 296 A-942, J.A. Dowdy 298 A-944, and 266 A-919, C.R. Evans 36 A-969, and 176 A-945, G.H. & RR. 1 A-198, G. M. & D. 4 A-214, F.E. Goodwin 2 A-640, H & G. N. RR. 45 A-249, and 47 A-248, D. Harris 7 A-235, J.A. Harrymans 174-A-922, Hooper & Wade 303 A-251, James Latham 3 A-275, R. McCampbell 262 A-929, 96 A-928, 94 A-927, and 50 A-926, Jno. McClane 48 A-765, L.A. McIntosh 31 A-542, J. Poitevent 95 A-378, 93 A-377, 49 A-350, 35 A-347, 31 A-363, 29 A-359, 95 A-1084, 91 A-376, and 89 A-375, Joe Russell 36 A-932, S. K. & K. 297 A-515, Pat Sheeran 254 A-783, O.B. & E.E. Shipp 92 A-811, J.M. Torres 62 A-884, O. Torres 60 A-882, Pedro Torres 61 A-883, 264 A-1023 and A-1083, and 50 A-1036 and A-926, W. Tullos 3 A-1037, G.L. Vanmeter 168 A-848, and 46 A-847, Geo. W. West 408 A-794, and 260 A-818, Ike West 3 A-822, Isaac West 258 A-819, and 186 A-820, Jacob White 174 A-955, O.P. Williams 6 A-487, W. Williams 67 A-908, and Jessie Wilson 2 A-995.

(ii) *Depth.* The average depth to the top of the Upper Wilcox (Mackhank) (First Tom Lyne) Formation is approximately 14,000 feet and the thickness is between 300 feet and 400 feet.

(159) *Lower Vicksburg (P through S) Sandstone in Texas.* RM79-76-202 (Texas—37).

(i) *Delineation of formation.* The Lower Vicksburg (P through S) Sandstone is located in Hidalgo County, Texas, Railroad Commission District 4, approximately seven miles east of the city of La Reforma and includes approximately 16,000 acres in the north part of the "Santa Anita" Manuel Gomez A-63 Grant.

(ii) *Depth.* The top of the Lower Vicksburg (P through S) Sandstone is the top of the "P" sand which occurs at an average depth of about 10,600 feet in the western portion of the designated area. In the east, the "P" sand is found at a depth of about 12,000 feet. The top of the lowermost section of the designated sandstone, the "S" sand, occurs at an average depth of about 13,500 feet in the west. In the east, the "S" sand is found at a depth of about 13,000 feet. Total thickness is approximately 4,000 feet.

(160) *Lower Mississippian Little Valley Formation in Virginia.* RM79-76-211 (Virginia—2).

(i) *Delineation of formation.* The Lower Mississippian Little Valley Formation is found in Scott and Washington Counties, Virginia. The

Texas Railroad Commission Regulations

NATURAL GAS POLICY ACT (NGPA)—DETERMINATION PROCEDURES

§3.101. DEFINITIONS.

(a) *Commencement of surface drilling*—means the spud date.

(b) *Commission* and *RRC*—mean the Railroad Commission of Texas.

(c) *FERC*—means the Federal Energy Regulatory Commission.

(d) *Operator*—means a peson. acting for himself or as an agent for others and designated to the Commission as the one who has the primary responsibility for complying with its rules and regulations in any and all acts subject to the jurisdiction of the Commission.

(e) *Other seller*—means a person who sells natural gas from the subject well under a contract separate from the operator's contract.

(f) *Sections 102, 103, 107, and 108*—refer to those sections of the Natural Gas Policy Act of 1978 (NGPA).

§3.102. APPLICATION PROCEDURE.

(a) An application for a category determination may be filed by the operator of a well, or, when the operator has declined to file an application, by any other seller or a working interest owner. A filing by either any other seller or a working interest owner must be accompanied by a statement that the operator has declined to file. The category determination is initiated by the applicant with the filing of the RRC Form F-1 and the FERC-121. Required documents should be included with the application. An application may be amended to include additional categories by filing revised forms F-1 and FERC 121, certificate of service, and supporting documents. An application may be withdrawn by written request of the applicant prior to transmittal to FERC.

(b) Filings and correspondence on NGPA dockets should be marked "NGPA" and addressed to the Railroad Commission of Texas, P. O. Box 12967, Austin, Texas, Attention: NGPA Section. No filings may be made at the district offices.

(c) If any requirement is eliminated, docketed applications will be examined for compliance under the revised regulations.

(d) Applicants should not use staples in an application because the application cannot be microfilmed with staples.

(e) A separate application must be filed for each well. A separate application must be filed for each completion location, except under Section 108.

(f) An applicant requesting a tight formation determination must submit a written request to the NGPA section of the Oil and Gas Division for a determination that a named formation or a specific portion thereof is a tight formation. The applicant must supply a list of the names and addresses of all affected persons. For purposes of this subsection, "affected persons" means all first purchasers, as indicated in current commission records, from all wells (regardless of operator) within the specific portion of the named formation and all operators in the same field or fields involved. The staff will mail notice of the application to all affected persons. If the technical staff is satisfied with the data submitted with the application, the requirements of which are set out below, and if no protest is filed within 21 days of the notice, the application will be presented to the Railroad Commission for approval of the recommendation. If the technical staff is not satisfied with the data submitted, or if a protest is filed within the 21-day notice period, the applicant may request a hearing to consider the application. If the applicant does not request a hearing, the application will be dismissed. Any such hearing shall be held only after at least ten days notice to all affected persons. If no protestant appears at the hearing, the application will be presented to the Railroad Commission for approval of the recommendation if the application and any evidence presented at the hearing establishes that the subject formation meets the prescribed requirements for a tight formation determination. A Railroad Commission tight formation determination is not final for NGPA purposes until after Federal Energy Regulatory Commission finalization. Individual well filings for a determination that natural gas from the wells is being produced from a designated tight formation will not be forwarded to the Federal Energy Regulatory Commission until after the subject tight formation determination is final for NGPA purposes. In addition to the written request and list of affected persons, the applicant must submit the following information:

(1) a geographical and geological description of the formation including:

(A) a map outlining the geographic limits of the formation, counties involved, boundaries, abstract numbers, survey names, and field name(s); and

(B) a structure map contoured on the top of the formation, a regional cross-section to depict upper and lower limits of the formation, and depositional history; and

(C) a list of the counties involved, abstract numbers, survey names, geologic formation markers, and any other relevant descriptive information that will aid in identifying the subject formation.

(2) engineering and geological data establishing the following (including a written explanation of each exhibit):

(A) average in situ permeability throughout the pay zone of 0.1 millidarcy or less; or, if the average in situ permeability exceeds 0.1 millidarcy, that the formation otherwise exhibits low permeability characteristics as evidenced by economic data showing the extraordinary costs associated with the stimulation work used and the net results obtained therefrom (See 18 Code of Federal Regulations §271.703(c)(2)(D)(ii).(v));

(B) a stabilized production rate, without stimulation, against atmospheric pressure, of wells completed for production in the formation not expected to be in excess of the production rate determined in accordance with the following table:

If the average depth to the top of the formation (in feet)		The maximum allowable production rate (in thousand cubic feet per day) may not exceed-
exceeds-	but does not exceed-	
0	1,000	44
1,000	1,500	51
1,500	2,000	59
2,000	2,500	68
2,500	3,000	79
3,000	3,500	91
3,500	4,000	105
4,000	4,500	122
4,500	5,000	141
5,000	5,500	163
5,500	6,000	188
6,000	6,500	217
6,500	7,000	251
7,000	7,500	290
7,500	8,000	336
8,000	8,500	388
8,500	9,000	449
9,000	9,500	519
9,500	10,000	600
10,000	10,500	693
10,500	11,000	802

If the average depth to the top of the formation (in feet)		The maximum allowable production rate (in thousand cubic feet per day) may not exceed-
exceeds-	but does not exceed-	
11,000	11,500	927
11,500	12,000	1,071
12,000	12,500	1,238
12,500	13,000	1,432
13,000	13,500	1,655
13,500	14,000	1,913
14,000	14,500	2,212
14,500	15,000	2,557

(C) that no well drilled into the formation is expected to produce, without stimulation, more than five (5) barrels of crude oil per day; and

(D) if the formation or any portion thereof is authorized to be developed by infill drilling, that such formation or portion subject to infill drilling cannot be developed absent the incentive price. If the Railroad Commission determines that such formation or portion subject to infill drilling can be developed absent the incentive price, then the Railroad Commission shall not include such formation or portion thereof in its tight formation determination. For purposes of this subparagraph, "infill drilling" exists when the formation or portion thereof is considered substantially developed subject to requirements respecting well spacing or proration units, and such requirements were amended by the Railroad Commission to provide for smaller proration units for more effective and efficient drainage of the reservoirs in the formation. If infill drilling exists, the applicant must provide the present field rules and Railroad Commission docket numbers for any change in the field rules that previously occurred in the area;

(3) a map or list of the wells that are currently producing in the formation; and

(4) evidence that any fresh water aquifers that are or are expected to be used as a domestic or agricultural water supply will not be adversely affected by the tight formation determination. The applicant may submit copies of letters from the Texas Water Commission signifying the depth to which fresh water must be protected in the subject area or proof of exceptions to Railroad Commission Statewide Rule 13(b)(2)(A)(i) (16 TAC §13(b)(2)(A)(i)) concerning casing requirements.

(j) If a determination is reversed by the FERC, an applicant may file a new application based on additional evidence. If a determination is remanded by the FERC, notice will be sent to all parties, and a hearing will be scheduled if required.

NATURAL GAS POLICY ACT
(WELL CATEGORY DETERMINATIONS)

The Railroad Commission has adopted rules on procedures for determination of well categories under the Natural Gas Policy Act of 1978. An application for well category determination can be approved by the Railroad Commission staff without a hearing. Under certain situations, as outlined in these rules, a hearing will be held. Determination of classification is made by the Commission and is then forwarded to the Federal Energy Regulatory Commission (FERC) in Washington, which reviews the finding. FERC has the power under the act to reverse the determination and place the well in a different category or to return the application to the Railroad Commission for further action.

Effective September 1, 1985, a filing fee of $50.00 is required for each Natural Gas Policy Act application Form F-1. The fee should be made payable to the State Treasurer of Texas and submitted with Form F-1.

Natural Gas Policy Act (NGPA)
Determination Procedures

§3.101. Definitions.

(a) "Commencement of surface drilling" means the spud date.

(b) "Commission" and "RRC" means the Railroad Commission of Texas.

(c) "FERC" the Federal Energy Regulatory Commission.

(d) "Operator" means a person, acting for himself or as an agent for others and designated to the commission as the one who has the primary responsiblity for compiying with its rules and regulations in any and all acts subject to the jurisdiction of the Commission.

(e) "Other Seller" means a person who sells natural gas from the subject well under a contract separate from the operator's contract.

(f) "Sections 102, 103, 107, and 108" refer to those sections of the Natural Gas Policy Act of 1978 (NGPA).

§3.102. Application Procedure.

(a) An application for a category determination may be filed by the operator of a well, or, when the operator has declined to file an application, by any other seller or a working interest owner. A filing by either any other seller or a working interest owner must be accompanied by a statement that the operator has declined to file. The category determination is initiated by the applicant with the filing of the RRC form F-1 and the FERC form 121. Required documents should be included with the application. An application may be amended to include additional categories by filing revised forms F-1 and FERC-121, certificate of service, and supporting documents. An application may be withdrawn by written request of the applicant prior to transmittal to FERC.

(b) Filings and correspondence on NGPA dockets should be marked "NGPA" and addressed to the Railroad Commission of Texas, P. O. Box 12967, Austin, Texas, Attention: NGPA Section. No filings may be made at the district offices.

(c) If any requirement is eliminated, docketed applications will be examined for compliance under the revised regulations.

(d) Applicants should not use staples in an application because the application cannot be microfilmed with staples.

(e) A separate application must be filed for each well. A separate application must be filed for each completion location, except under Section 108.

(f) An applicant requesting a tight formation determination must submit a written request to the NGPA section of the Oil and Gas Division for a determination that a named formation or a specified portion thereof is a tight formation. The applicant must supply a list of the names and addresses of all affected persons. For purposes of this subsection, "affected persons" means all first purchasers, as indicated in current commission records, from all wells (regardless of operator) within the specific portion of the named formation and all operators in the same field or fields involved. The staff will mail notice of the application to all affected persons. If the technical staff is satisfied with the data submitted with the application, the requirements of which are set out below, and if no protest is filed within 21 days of the notice, the application will be presented to the Railroad Commission for approval of the recommendation. If the technical staff is not satisfied with the data submitted, or if a protest is filed within the 21-day notice period, the applicant may request a hearing to consider the application. If the applicant does not request such a hearing, the application will be dismissed. Any such hearing shall be held only after at least ten days notice to all affected persons. If no protestant appears at the hearing, the application will be presented to the Railroad Commission for approval of the recommendation if the application and any evidence presented at the hearing establishes that the subject formation meets the prescribed requirements for a tight formation determination. A Railroad Commission tight formation determination is not final for NGPA purposes until after Federal Energy Regulatory Commission finalization. Individual well filings for a determination that natural gas from the wells is being produced from a designated tight formation will not be forwarded to the Federal Energy Regulatory Commission until after the subject tight formation determination is final for NGPA purposes. In addition to the written request and list of affected persons, the applicant must submit the following information:

(1) a geographical and geological description of the formation including:

(A) A map outlining the geographic limits of the formation, counties involved, boundaries, abstract numbers, survey names, and field name (s); and

(B) A structure map contoured on the top of the formation, a regional cross-section to depict upper and lower limits of the formation and depositional history; and

(C) A list of the counties involved, abstract numbers, survey names, geological formation markers, and any other relevant descriptive information that will aid in identifying the subject formation.

(2) engineering and geological data establishing the following (including a written explanation of each exhibit):

(A) average in situ permeability throughout the pay zone, of 0.1 millidarcy or less; or if the average in situ permeability exceeds 0.1 millidarcy, that the formation otherwise exhibits low permeability characteristics as evidenced by economic data showing the extraordinary costs associated with the stimulation work used and the net results obtained therefrom (See 18 Code of Federal Regulations § 271.703(c)(2)(D)(ii), (v));

NATURAL GAS POLICY ACT
(WELL CATEGORY DETERMINATIONS)

The Railroad Commission has adopted rules on procedures for determination of well categories under the Natural Gas Policy Act of 1978. An application for well category determination can be approved by the Railroad Commission staff without a hearing. Under certain situations, as outlined in these rules, a hearing will be held. Determination of classification is made by the Commission and is then forwarded to the Federal Energy Regulatory Commission (FERC) in Washington, which reviews the finding. FERC has the power under the act to reverse the determination and place the well in a different category or to return the application to the Railroad Commission for further action.

Effective September 1, 1985, a filing fee of $50.00 is required for each Natural Gas Policy Act application Form F-1. The fee should be made payable to the State Treasurer of Texas and submitted with Form F-1.

Natural Gas Policy Act (NGPA)
Determination Procedures

§3.101. Definitions.

(a) "Commencement of surface drilling" means the spud date.

(b) "Commission" and "RRC" means the Railroad Commission of Texas.

(c) "FERC" the Federal Energy Regulatory Commission.

(d) "Operator" means a person, acting for himself or as an agent for others and designated to the commission as the one who has the primary responsiblity for complying with its rules and regulations in any and all acts subject to the jurisdiction of the Commission.

(e) "Other Seller" means a person who sells natural gas from the subject well under a contract separate from the operator's contract.

(f) "Sections 102, 103, 107, and 108" refer to those sections of the Natural Gas Policy Act of 1978 (NGPA).

§3.102. Application Procedure.

(a) An application for a category determination may be filed by the operator of a well, or, when the operator has declined to file an application, by any other seller or a working interest owner. A filing by either any other seller or a working interest owner must be accompanied by a statement that the operator has declined to file. The category determination is initiated by the applicant with the filing of the RRC form F-1 and the FERC form 121. Required documents should be included with the application. An application may be amended to include additional categories by filing revised forms F-1 and FERC-121, certificate of service, and supporting documents. An application may be withdrawn by written request of the applicant prior to transmittal to FERC.

(b) Filings and correspondence on NGPA dockets should be marked "NGPA" and addressed to the Railroad Commission of Texas, P. O. Box 12967, Austin, Texas, Attention: NGPA Section. No filings may be made at the district offices.

(c) If any requirement is eliminated, docketed applications will be examined for compliance under the revised regulations.

(d) Applicants should not use staples in an application because the application cannot be microfilmed with staples.

(e) A separate application must be filed for each well. A separate application must be filed for each completion location, except under Section 108.

(f) An applicant requesting a tight formation determination must submit a written request to the NGPA section of the Oil and Gas Division for a determination that a named formation or a specified portion thereof is a tight formation. The applicant must supply a list of the names and addresses of all affected persons. For purposes of this subsection, "affected persons" means all first purchasers, as indicated in current commission records, from all wells (regardless of operator) within the specific portion of the named formation and all operators in the same field or fields involved. The staff will mail notice of the application to all affected persons. If the technical staff is satisfied with the data submitted with the application, the requirements of which are set out below, and if no protest is filed within 21 days of the notice, the application will be presented to the Railroad Commission for approval of the recommendation. If the technical staff is not satisfied with the data submitted, or if a protest is filed within the 21-day notice period, the applicant may request a hearing to consider the application. If the applicant does not request such a hearing, the application will be dismissed. Any such hearing shall be held only after at least ten days notice to all affected persons. If no protestant appears at the hearing, the application will be presented to the Railroad Commission for approval of the recommendation if the application and any evidence presented at the hearing establishes that the subject formation meets the prescribed requirements for a tight formation determination. A Railroad Commission tight formation determination is not final for NGPA purposes until after Federal Energy Regulatory Commission finalization. Individual well filings for a determination that natural gas from the wells is being produced from a designated tight formation will not be forwarded to the Federal Energy Regulatory Commission until after the subject tight formation determination is final for NGPA purposes. In addition to the written request and list of affected persons, the applicant must submit the following information:

(1) a geographical and geological description of the formation including:

(A) A map outlining the geographic limits of the formation, counties involved, boundaries, abstract numbers, survey names, and field name (s); and

(B) A structure map contoured on the top of the formation, a regional cross-section to depict upper and lower limits of the formation and depositional history; and

(C) A list of the counties involved, abstract numbers, survey names, geological formation markers, and any other relevant descriptive information that will aid in identifying the subject formation.

(2) engineering and geological data establishing the following (including a written explanation of each exhibit):

(A) average in situ permeability throughout the pay zone, of 0.1 millidarcy or less; or if the average in situ permeability exceeds 0.1 millidarcy, that the formation otherwise exhibits low permeability characteristics as evidenced by economic data showing the extraordinary costs associated with the stimulation work used and the net results obtained therefrom (See 18 Code of Federal Regulations § 271,703(c)(2)(D)(ii), (v));

(c) New onshore production wells under section 103. An application shall include the RRC Form F-1, the FERC Form 121, copies of the original and any amended W-1 and accompanying plat(s), all G-1's or W-2's for the subject well, and copies of the RRC field rules indicating spacing and density provisions applicable at commencement of surface drilling. The location plat accompanying the W-1 must indicate the subject well, outline the proration unit, and show all wells within the unit in which the subject well is located. If any such well has been plugged or converted to a water-injection well or a salt water disposal well, the plugging date or conversion date shall be shown. When other wells appear in the outlined area, designate the reservoir in which each is completed.

(1) The NGPA proration unit is the acreage required by the statewide rules, county regular rules, or field rules applicable to the subject well on the spud date. This is the amount shown in box 17 on the W-1 and not the amount of the drilling unit. If, prior to the commencement of surface drilling of the subject well, the commission has authorized optional units or changed unit sizes in order to permit effective and efficient development and drainage of the reservoir, this new proration unit size shall be effective for the subject well. The proration unit shall be evidenced by the granting of a permit for the subject well on such unit.

(2) Where the Commission has established on entity for density purposes, the plat accompanyig the W-1 should outline the entity unit.

(3) When an application involves a second well on a proration unit pursuant to a §3.37 of this title (relating to Statewide Spacing Rule) exception and/or a §3.38 of this title (relating to Well Densities) exception, and if surface drilling of the first well to the same reservoir on the unit commenced before February 19, 1977, and such first well produced prior to such date or was capable of production of natural gas in commercial quantities after such date, the applicant shall include a copy of the commission's §3.37 of this title (relating to Statewide Spacing Rule) order and/or §3.38 of this title (relating to Well Densities) order for the subject well and shall request a determination that the well was needed to effectively and efficiently drain the reservoir.

(4) For wells drilled into existing proration units without an exception to RRC §3.38 of this title (relating to Well Densities) (e.g.; replacement wells), as a part of the section 103 application, applicant should request a finding that the well is needed to effectively and efficiently drain a portion of the reservoir covered by the proration unit which cannot be effectively drained by any existing well within the proration unit. Data must be filed to support the finding. Requests for the finding shall be filed with the commission's NGPA section.

(5) When wells that have qualified as new onshore production wells are subsequently recompleted, a new filing under the NGPA is not required if the well is the first well in the new proration unit. If the recompletion results in the well being drilled into an existing proration unit, a new filing is required. Applicant will be required to submit data as outlined in number (3) or (4) above when the new filing is made.

(d) High cost of natural gas under section 107.

(1) Deep high cost natural gas applications under section 107(a) shall include the RRC Form F-1, the FERC Form 121, copies of all G-1's or W-2's for the subject well, and a copy of one of the following:

(A) the log heading together with the relevant portion of the well log; or

(B) a well servicing company report signed by a representative of the independent well servicing company corroborating the depth of the completion location (producing interval).

(2) When wells that have qualified as deep high cost gas wells are recompleted to a deeper depth, the gas produced from the deeper location is eligible for the section 107 deregulated price without the filing of another application.

(3) Applications under section 107(b) for wells producing from designated tight gas formations shall include the RRC Form F-1, the FERC Form 121, copies of all G-1's or W-2's for the subject well, and the heading and pertinent portions of the well log or a drilling report identifying the designated tight formation. If the subject well qualifies as new tight formation gas, applicant must file all information required by section 102 or 103 above or provide the docket number in which the subject well was approved as a 102 or 103 application. Additionally, if the well for which a determination is being sought was completed for production in the designated tight formation prior to July 16, 1979, the applicant must submit a gamma ray log on which all completion locations in the wellbore which were completed for production prior to December 27, 1983, and the completion locations which are the subject of the application are identified, and which demonstrates that the strata between the completion locations contains a minimum of 20 vertical feet of impermeable structure. Alternatively, instead of a gamma ray log, applicant may submit the results of bottom hole pressure surveys, gas analyses or other methods or calculations comparing the completion locations which are the subject of the application and any completion locations in the wellbore which were completed for production prior to December 27, 1983, and an explanation of the engineering principles, calculations, and reasoning used in concluding that the gas to be produced from the subject completion locations could not have been produced from any completion locations in existence prior to December 27, 1983.

(4) Applications under section 107(b) for well producing qualified production enhancement gas shall include the RRC Form F-1 and the FERC Form 121. The application must include a description of the production enhancement work that has been performed on the well with dates the work was commenced and completed, or that will be performed on the well; an itemized statement of costs incurred in performing the production enhancement work, including copies of invoices and bills for such work, or, if the work has not yet been completed, estimates of such costs; a statement estimating, for a five-year test period beginning from the month in which the application is filed, the increase in gas production resulting from the application of production enhancement work; calculations showing that projected increase in revenue does not exceed 200 percent of the section 103 price; the renegotiated price, and a copy of that portion of the sales contract that authorizes collection of the renegotiated price and an oath statement prepared by the purchaser of natural gas as described in section 274.205(f)(8) of the federal regulations.

(e) Stripper wells under section 108.

(1) Application. Each application must include the RRC Form F-1, the FERC Form 121, and information by month from the commission's production ledger, P-1 or P-2 detailing the amount of any natural gas and crude oil production from all completions in the well during a 90-day period designated by the applicant ending within 90 days prior to the filing of the application. A maximum efficient rate of flow of 60 MCF or less per day must be established either:

(A) through the filing of a monthly summary of gas production taken from the RRC production ledger, P-1 or P-2 for a 12-month period ending concurrently with the 90-day period; or

(B) through the filing of a copy of the G-10 or W-10 test performed during the 12-month period ending concurrently with the 90-day period. The P-1, P-2, or production ledger for the last month of the 90-day production period must be provided. Applicant must state the number of days that natural gas is not produced in the designated 90-day period. If the well did not produce on specific days due to a requirement of state law or due to a conservation practice recognized and approved by the commission, applicant must provide a description of such law or practice and state the number of days the well did not produce due to the law or practice described.

(2) Multiple well lease. For a multiple well lease where wells are not individually metered, oil and gas production may be allocated by averaging equally among the non-metered wells only when there is no other reliable method of allocation. To justify averaging of production, the applicant must specifically state why the W-10 is not reliable as a basis for allocation and that there is no other reliable method of allocation. An applicant may utilize a W-10 well test conducted during the relevant 12-month period or an alternative method of allocation

takes any action or discovers any information that affects the eligibility of gas for an exemption under the Tax Code, §201.057, the commission will notify the comptroller, all first purchasers (if known), and the operator in writing immediately.

(d) Application requirements.

(1) To qualify for the severance tax exemption the operator must submit to the NGPA Section of the Railroad Commission:

(A) all information required by §3.102 and §3.103 (a) and (d) of this title (relating to Application Procedures and Documents Supporting Applications) with notice to other persons as required by those sections;

(B) all necessary forms and any other relevant information required to administer this section; and

(C) A verification that all first purchasers of the natural gas have been notified in writing of any such application.

(2) The operator may, but is not required to, apply concurrently for a determination that gas produced from the gas well is high-cost natural gas for purposes of the Natural Gas Policy Act of 1978.

(3) In order to be eligible for commission certification entitling an operator to the severance tax exemption, the operator must:

(A) show that the well produces or will produce high-cost gas; and,

(B) show that the high-cost gas is or will be produced from a gas well which was spudded or completed between May 24, 1989, and September 1, 1996.

(4) If the application is for a "tight sands" determination for a well that is not within a designated tight formation area, the operator must first apply for a new tight formation area designation pursuant to §3.102(f) of this title (relating to Application Procedures) and inform the commission whether the area designation is for severance tax exemption purposes only or for purposes of both the exemption and compliance with federal regulations. In either case, approval of a new tight sands area designation by the commission will be sufficient to support a "tight sands" severance tax exemption application for a particular well within the designated area.

(e) Opportunity for hearing.

The director may administratively approve the application if the forms and information submitted by the operator, establish that the gas qualifies as high-cost gas eligible for the severance tax exemption. If the director denies administrative approval, the applicant shall have the right to a

hearing as provided in §3.102(f) and §3.104 of this title (relating to Application Procedures and Commission Action on Applications).

(f) Reporting.

To qualify for the exemption provided by the Tax Code, §201.057, the person responsible for paying the tax must apply to the comptroller. The application must contain the certification of the commission that the well produces or will produce high-cost gas. An application accompanied by the commission's certification may be filed with the comptroller between January 1, 1990, and December 31, 1998, for exemption from the natural gas severance tax provided in the Tax Code, Chapter 201.

Issued at Austin, Texas, on December 15, 1980.

NEW GAS UNDER §102(c) (1) (B) (No marker well test or 1000 foot deeper test)
(The following information **must** be included under this category.)

___ A. Completed FERC Form 121.
___ B. Map or Plat described in §274.202(b) (1) (iv). **Applies to no marker well test only.**
___ C. All G-1's or W-2's on subject well.
___ D. Directional Survey, if required by RRC. **Applies to no marker well test only.**
___ E. Identification of the deepest completion location of the marker well with the deepest completion location of all marker wells located within 2.5 miles of the well for which the determination is sought. **Applies to 1000' deeper test only.**
___ F. The oath below must be properly completed, signed and notarized.

Statement By Applicant Under OATH:

I have made, or caused to be made pursuant to my instructions, a diligent search of all reasonably available records containing information relevant to the determination. Those records, if any, which may be relevant, but which I have determined not to be reasonably available are described below. A description of the search, the records reviewed and the location of these records is as follows:

_____

_____

_____

Based on the results of this search and examination, I have concluded to the best of my information, knowledge and belief, **(initial 1 or 2 whichever is appropriate)**

___1. There is no marker well within 2.5 miles of the well for which I seek a determination.
___2. There is no marker well within 2.5 miles of the well for which I seek a determination which has a completion location less than 1000 feet above the completion location of the subject well.

I have no knowledge of any information not described in this application which is inconsistent with my conclusion that the well qualifies under Section 102(c) (1) (B).

I declare under penalties prescribed in Section 91.143, TEX. NAT. RES. CODE ANN., that I am authorized to make this application, that it was prepared by me or under my supervision and direction, that documents or summations thereof from my files permitted in lieu of copies from Commission files are true and correct copies or summations of the documents originally required to be filed with the Commission, that I have served a copy of the F-1 and FERC Form 121 on the parties required by Commission rules and listed on this form, and that these statements are true, correct and complete to the best of my information, knowledge and belief.

_____ _____ _____ ( ) _____
Signature Title Date A/C Phone Number

_____
Notary Signature

_____
Commission Expires

SEAL

Revised 9-89

NEW ONSHORE PRODUCTION WELL UNDER §103
(The following information **must** be included under this category.)

___ A. Completed FERC Form 121.
___ B. W-1 and accompanying plat on subject well with proration unit (#16 on W-1) clearly outlined. Be sure to indicate status (reservoir in which completed, plugging date, date converted to Water Injection Well or Salt Water Disposal Well) of any other wells shown on the plat in the outlined area.
___ C. All G-1's or W-2's on subject well.
___ D. RRC field rules showing spacing and density in effect on spud date.
___ E. Rule 37 or 38 Order, if any, permitting second well on unit when the first well was commenced prior to 2/19/77 and was commercially produced. If first well commenced after 2/19/77, check here. ___
___ F. If an effective and efficient finding is required, the request and supporting evidence should be filed.
___ G. The appropriate oath below must be completed, signed and notarized. **OATH B** is applicable where the subject well is drilled into an existing proration unit. (See Instructions.)

Statement By Applicant Under OATH:

A. The surface drilling of the well for which I seek a determination was begun on or after February 19, 1977. The well satisfies any applicable federal or state well-spacing requirements, and the well is not within a proration unit: (a) which was in existence at the time surface drilling of the well began, (b) which was applicable to the reservoir from which such natural gas is produced, and (c) which applied to any other well which either produced natural gas in commercial quantities or the surface drilling of which was begun before February 19, 1977, and was thereafter capable of producing natural gas in commercial quantities. I conclude, that to the best of my information, knowledge and belief, the natural gas for which I seek a determination is produced from a new, onshore production well based on the information included in this application. I have no knowledge of any other information not described in this application which is inconsistent with my conclusions.

I declare under penalites prescribed in Section 91.143, TEX. NAT. RES. CODE ANN., that I am authorized to make this application, that it was prepared by me or under my supervision and direction, that any documents or summations thereof from my files permitted in lieu of copies from Commission files are true and correct copies of summations of the documents originally required to be filed with the Commission, that I have served a copy of the F-1 and FERC Form 121 on the parties required by Commission rules and listed on this form, and that these statements are true, correct and complete to the best of my information, knowledge and belief.

_____ _____ _____ ( ) _____
Signature Title Date A/C Phone Number

_____
Notary Signature

_____
Commission Expires SEAL

★ ★

Statement By Applicant Under OATH:

B. The surface drilling of the well for which I seek a determination was begun on or after February 19, 1977. The well satisfies any applicable federal or state well-spacing requirements. I conclude that to the best of my information, knowledge and belief, the natural gas for which I seek a determination is produced from a new, onshore production well based on the information included in this application. I have no knowledge of any other information not described in this application which is inconsistent with my conclusions.

I declare under penalties prescribed in Section 91.143, TEX. NAT. RES. CODE ANN., that I am authorized to make this application, that it was prepared by me or under my supervision and direction, that any documents or summations thereof from my files permitted in lieu of copies from Commission files are true and correct copies or summations of the documents originally required to be filed with the Commission, that I have served a copy of the F-1 and FERC Form 121 on the parties required by Commission rules and listed on this form, and that these statements are true, correct and complete to the best of my information, knowledge and belief.

_____ _____ _____ ( ) _____
Signature Title Date A/C Phone Number

_____
Notary Signature

_____
Commission Expires SEAL

Revised 9/89

QUALIFIED PRODUCTION ENHANCEMENT GAS UNDER §107
(The following information must be included under this category.)

___ A. Completed FERC Form 121.
___ B. Describe the production enhancement work that has been performed on the well, with the dates the work was commenced and completed, or that will be performed on the well.
___ C. Itemized statement of costs incurred or to be incurred in performing the production enhancement work.
___ D. Copies of bills and invoices for work that has been completed.
___ E. Statement estimating, for a 5 year test period, the difference in gas production resulting from the application of production enhancement work.
___ F. Calculations showing that projected increase in revenue does not exceed 200 percent of section 103 price.
___ G. Copy of that portion of the sales contract that shows the renegotiated price and authorizes collection of such price.
___ H. Purchaser's oath pursuant to §274.205 (f) (8).
___ I. The oath below must be properly completed, signed and notarized.
___ J. All G-1 forms for the subject well (required only when certification is requested).

Statement By Applicant Under OATH:

The production enhancement work is necessary, and can be reasonably expected, to enhance production. The maximum lawful price that would be applicable but for qualification of the gas under §271.704 does not, or will not, provide adequate incentive for the performance of the production enhancement work. But for the availability of a price at least as high as the renegotiated price specified in §274.205 (f) (6), the production enhancement work would not have been or will not be performed. The production enhancement work was not commenced before May 29, 1980. To the best of my knowledge and belief, the estimates required by §274.205 (f) (4) are reasonable and the production enhancement work was not commenced before **(Initial only A or B.)**

___ A. May 29, 1980, for wells otherwise subject to the maximum lawful price prescribed by Subpart E of Part 271; or
___ B. September 26, 1983, for wells otherwise subject to the maximum lawful price prescribed by Subparts D and F of Part 271.

I declare under penalites prescribed in Section 91.143, TEX. NAT. RES. CODE ANN., that I am authorized to make this application, that it was prepared by me or under my supervision and direction, that any documents or summations thereof from my files permitted in lieu of copies from Commission files are true and correct copies of summations of the documents originally required to be filed with the Commission, that I have served a copy of the F-1 and FERC Form 121 on the parties required by Commission rules and listed on this form, and that these statements are true, correct and complete to the best of my information, knowledge and belief.

Signature	Title	Date	( ) A/C	Phone Number

Notary Signature

Commission Expires SEAL

DEEP HIGH COST GAS UNDER §107
(The following information must be included under this category.)

___ A. Completed FERC Form 121.
___ B. All G-1's or W-2's on subject well.
___ C. Directional Survey, if previously required by RRC.
___ D. The log heading and the relevant portion of the well log or a well servicing company report signed by a representative of the independent well servicing company corroborating the completion depth.
___ E. The oath below must be properly completed, signed and notarized.

Statement By Applicant under OATH:

The surface drilling of the well for which I seek a determination began on or after February 19, 1977. The well completion location is below a true vertical depth of 15,000 feet. I have no knowledge of any information not described in this application which is inconsistent with my conclusions.

I declare under penalties prescribed in Section 91.143, TEX. NAT. RES. CODE ANN., that I am authorized to make this application, that it was prepared by me or under my supervision and direction, that any documents or summations thereof from my files permitted in lieu of copies from Commission files are true and correct copies or summations of the documents originally required to be filed with the Commission, that I have served a copy of the F-1 and FERC Form 121 on the parties required by Commission rules and listed on this form, and that these statements are true, correct and complete to the best of my information, knowledge and belief.

Signature	Title	Date	( ) A/C	Phone Number

Notary Signature

Commission Expires SEAL

Revised 9/89

New Onshore Production Well Under Section 103

1. The proration unit for the subject well must be outlined on the plat. The acreage included in the proration unit should be indicated. Note that the amount of acreage in the NGPA proration unit is 40 acres if the field was governed by Statewide rules on the spud date. If field rules were in effect on the spud date, the NGPA proration unit must contain the number of acres required to be assigned under those field rules. The amount of the NGPA proration unit is the amount shown in Box 16 of the W-1 unless a Rule 38 was granted, a substandard acreage form was properly filed, or the well is the last well in the unit and complies with the field rules.
2. The applicant must use Oath form A unless the subject well is drilled into an existing proration unit. Oath form B is appropriate where the well has been granted an exception to RRC Statewide Rule 38 or where an effective and efficient finding is needed.
3. After initial well qualification as a Section 103, new onshore production well, subsequent recompletions within the wellbore do not require a new NGPA filing **as long as** the subject well is recompleted into a new proration unit.
4. Certain reentries may qualify if they meet the most current FERC guidelines on reentries. Call the NGPA section for further information.

Gas Produced From Tight Formations Under Section 107

1. Note that applicant must also provide all evidence required by Section 102(c) (1) (B), Section 102(c) (1) (C) or Section 103 except when well is recompleted into a tight formation.
2. If a docket number has already been assigned to the well under section 102 or 103, be sure to include the docket number.
3. Applicant must initial either 1, 2 or 3 in oath statement to indicate if the well was (1) drilled on or after July 16, 1979, or (2) not completed for production in the designated tight formation prior to July 16, 1979, or (3) completed for production in the designated tight formation prior to July 16, 1979

Qualified Production Enhancement Gas Under Section 107

1. Examples of the Purchaser's Oath Statement may be obtained from the Railroad Commission
2. If enhancement work has not been performed on well, send estimate of the costs to be incurred.
3. Applicant must initial either 1 or 2 in Oath statement to indicate if the production enhancement work was not commenced before (1) May 29, 1980, for wells otherwise subject to the maximum lawful price prescribed by Subpart E of Part 271, or (2) September 26, 1983, for wells otherwise subject to the maximum lawful price prescribed by Subparts D and F of Part 271.

Deep High Cost Gas Under Section 107

1. If a well log is provided, only the log heading and pertinent portion of log need be submitted.
2. The well servicing company report, if provided in lieu of a well log, must be signed by a representative of an independent well servicing company.
3. After initial well qualification as a Section 107, deep high cost well, subsequent recompletions to deeper producing zones **do not** require a new NGPA filing.

Stripper Well Gas Under Section 108

1. Production figures must be taken from the RRC Form P-1 or P-2. Applicant may provide a summary by month of gas and oil production in lieu of providing a P-1 or P-2 for each month. Applicant must provide a P-1 or P-2 for the last month in the 90-day period.
2. Applicant must state the number of non-producing days during the 90-day period.
3. Days on which the line was open to pressure, but the well failed to produce, are producing days
4. If the well was shut in for a conservation reason, applicant must state the physical impediment which requires the well to be shut in and the number of days the well was shut in due to a conservation technique during the 90-day period.
5. A qualified 108 stripper well which disqualifies for a 90-day period is not required to be refiled on when production limits again drop below the 60 mcf limit. Automatic requalification will take place when production levels drop to the proper limits.
6. If applicant's disqualifying well is subject to continuing qualification conditions (Enhanced Recovery, Seasonal Fluctuations or Temporary Pressure Buildup) a list of appropriate filing requirements and oath statements are available through the NGPA section

Revised 9/89

U.S. DEPARTMENT OF ENERGY
Federal Energy Regulatory Commission
Washington, D.C. 20426

Form Approved
OMB No. 1902-0038
(Expires 10-31-90)

APPLICATION FOR DETERMINATION OF THE MAXIMUM LAWFUL PRICE UNDER THE NATURAL GAS POLICY ACT (NGPA)
(Sections 102, 103, 107 and 108)

GENERAL INSTRUCTIONS

Complete this form if you are applying for price classification under sections 102, 103, 107 or 108 of the NGPA.

Complete each appropriate item on the reverse side of this page. The code numbers used in items 4 and 6 can be obtained from the Buyer/Seller Code Book. If there is more than one purchaser or contract, identify the additional information in the space below. Also enter any additional remarks in the space below. The data reported on this form are not considered to be confidential and will not be treated as such.

Submit the completed application to the appropriate Jurisdictional Agency as listed in title 18 of the CFR, part 274.501. If there are any questions, call (202) 357-8585.

SPECIFIC INSTRUCTIONS

Use the codes in the table below for type of determination in item 2.

Section of NGPA (a)	Category Code (b)	Description (c)
102	1	New OCS lease
102	2	New onshore well (2.5 mile test)
102	3	New onshore well (1000 feet deeper test)
102	4	New onshore reservoir
102	5	New reservoir on old OCS lease
103	-	New onshore production well
107	0	Deep (more than 15,000 feet) high-cost gas
107	1	Gas produced from geopressured brine
107	2	Gas produced from coal seams
107	3	Gas produced from Devonian shale
107	5	Production enhancement gas
107	6	New tight formation gas
107	7	Recompletion tight formation gas
108	0	Stripper well
108	1	Stripper well – seasonally affected
108	2	Stripper well – enhanced recovery
108	3	Stripper well – temporary pressure buildup
108	4	Stripper well – protest procedure

Enter the appropriate information regarding other Purchasers/Contracts.

Line No.	Contract Date (Mo, Da, Yr) (a)	Purchaser (b)	Buyer Code (c)
1			
2			
3			
4			
5			
6			

Remarks:

FERC-121 (8-82)

Revised Notice September 1988

RAILROAD COMMISSION OF TEXAS

Oil and Gas Division

NOTICE TO OPERATORS

Fees Required by Law

The Railroad Commission is required by law to impose fees for the following Oil and Gas Division applications and services:

	APPLICATION OR SERVICE	FEE	BASIS
1.	Application for Permit to Drill, Deepen, Plug Back, or Re-enter (Form W-1)	$100	per application or materially amended application
2.	Application for Future Re-entry of Inactive Wellbore and 14(b)(2) Extension (Form W-1X)	100	per well
3.	Application for an oil and gas waste disposal well permit (Form W-14)	100	per well
4.	Application for a fluid injection well permit (Forms H-1 and H-1A)	100	per well
5.	Application for an exception to Commission Statewide Rule (see below)	50	per application
6.	Natural Gas Policy Act application (Form F-1)	50	per application (not per category)
7.	Request for expedited processing of an application to drill, deepen, plug back, or re-enter a well (Form W-1) NOTE: This fee applies only when the application is a "walk-through" and is in addition to the $100 drilling permit application fee.	50	per application

The following questions and answers should assist you in complying with the fee requirement.

Can I walk through a drilling permit application? Yes, you can walk through your W-1 for consideration of administrative approval. Take your application to the Drilling Permit section where it will be audited. Then carry the application to the Records Codification and Mapping sections. Return to the Drilling Permit section for final approval and fee payment. If a Rule 37 exception application is walked through, consideration can only be given if all waivers are attached and any additional required documentation is presented at the same time.

What is the procedure for hand-filing an application with the Commission's Austin Office instead of mailing it? First, take the application form or letter requesting an exception to the appropriate section such as Underground Injection Control (UIC), Natural Gas Policy Act (NGPA), or Technical Permits where the appropriate fee will be determined and a fee verification form attached to your application or request. Carry these documents to the Oil and Gas Division's Fee Receipt office where the fee payment will be made. Then, return to the appropriate section with the documents and your application or request will be processed routinely.

WHICH STATEWIDE RULE EXCEPTIONS REQUIRE A FEE?

Statewide Rule	Exception
5(b)	stratigraphic tests, cores
9(h)	equipment (tubing, packer, pressure observation valve)
10	downhole commingling
21	tank location
26 & 27	metering, turbine meters, surface commingling, Lease Automatic Custody Transfer (LACT)
31(c)(1)	diagonal exception for fields in which acreage is a factor in the allocation formula
32	flaring
34(k)	hardship clause
36(e)	hydrogen sulfide
37	spacing
38	density
39	non-contiguous acreage
46(g)	equipment (tubing, packer, pressure observation valve)
69	out-of-state sales of gas produced from publicly owned or leased properties