

State of New Mexico



W.R. HUMPHRIES
COMMISSIONER



Commissioner of Public Lands

P.O. BOX 1148
SANTA FE, NEW MEXICO 87504-1148

October 5, 1990

BHP Petroleum
Americas
5847 San Felipe Suite 3600
Houston, TX 77057

Attn: Paul C. Bertoglio

Re: Gallegos Canyon Unit
San Juan County, New Mexico
1990 Plan of Development

Dear Mr. Bertoglio:

The Commissioner of Public Lands this date approved the 1990 Plan of Development for the Gallegos Canyon Unit. Our approval is subject to like approval by all other appropriate agencies. Please forward to this office current copies of both Exhibits A & B.

The possibility of drainage by wells outside of the Unit Area and the need for further development may exist. You will be contacted at a later date regarding these possibilities.

If we may be of further help, please do not hesitate to contact Clyde Langdale at (505) 827-5791.

Sincerely,

W. R. HUMPHRIES

BY: 
Floyd O. Prado, Director
Oil, Gas & Minerals Division

cc: OCD
Unit Corresp.
Unit POD

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

90 PM 10 RA 8 52



May 15, 1990

Bureau of Land Management
P.O. Box 1449
Santa Fe, NM 87501

Bureau of Land Management
435 Montano NE
Albuquerque, NM 87197

New Mexico State Land Office
Oil & Gas Development
P.O. Box 1148
Santa Fe, NM 87501-1148

State of New Mexico ✓
Oil Conservation Commission
P.O. Box 2088
Santa Fe, NM 87501

Bureau of Land Management
Office of District Engineer
1235 LaPlata Highway
Farmington, NM 87401

Re: Amendment to 1990 Plan of Development
Gallegos Canyon Unit
Pictured Cliffs, Fruitland, and Farmington Formations
San Juan County, New Mexico

Gentlemen:

In reviewing the previously submitted 1990 Plan of Development, it was found to have typographical errors on four of the proposed locations. The correct locations are as follows:

<u>Well</u>	<u>Location</u>
392	SW/SW Section 26 T29N - R13W
393	SE/SW Section 25 T29N - R13W
396	NE/SW Section 35 T29N - R13W
397	NE/SW Section 36 T29N - R13W

We regret any inconvenience these errors may have caused. Should you have any questions, feel free to contact the undersigned at (713) 780-5446.

Very truly yours,
BHP Petroleum (Americas) Inc.

Paul C. Bertoglio

Paul C. Bertoglio
Sr. Petroleum Engineer
Inland Business Unit

cc: Amoco Production Company
1670 Broadway
P.O. Box 800
Denver, CO 80201
Attn: Rocky Mountain Land Manager

APR 26 1990

Gallegos Canyon Unit (POD)
3180 (019)

APR 26 1990

BHP Petroleum Incorporated
Attn: Paul C. Bertoglio
5847 San Felipe, Suite 3600
Houston, TX 77057

Gentlemen:

One approved copy of your 1990 Plan of Development for the Gallegos Canyon Unit area (Pictured Cliffs, Fruitland and Farmington Formations), San Juan County, New Mexico, is enclosed. Such plan, proposing the drilling of 19 Fruitland Coal wells, 18 Pictured Cliffs wells, 3 recompletions in the Fruitland Formation and the deferment of 4 Fruitland Coal wells (Gallegos Canyon Unit No. 373, No. 375, No. 379 and No. 380) proposed in the 1989 Plan of Development was approved on this date subject to like approval by the appropriate officials of the State of New Mexico.

If you have any questions, please contact Gail Keller at the above address or telephone (505) 327-5344.

Sincerely,

/s/ John L. Keller

John Keller
Chief, Branch of Minerals

Enclosure

cc: New Mexico Oil Conservation Division, 310 Old Santa Fe Trail,
Room 206, Santa Fe, NM 87503
Commissioner of Public Lands, State of New Mexico, P. O. Box 1148,
Santa Fe, NM 87504
Navajo Nation Minerals Department, P. O. Box 146, Window Rock, AZ 86515



90 FEB 28 11 19 00

Amoco Production Company

Southern Division
1670 Broadway
P.O. Box 800
Denver, Colorado 80201
303-830-4040

T. D. Autry
Division Production Manager

February 27, 1990

Bureau of Land Management
P. O. Box 1449
Santa Fe, NM 87501

Bureau of Land Management
P. O. Box 6770
Albuquerque, NM 87197-6770

New Mexico State Land Office
Oil and Gas Development
P. O. Box 1148
Santa Fe, NM 87501-1148

Oil Conservation Commission
State of New Mexico
P. O. Box 2088
Santa Fe, NM 87501-2088

Office of District Engineer
Bureau of Land Management
P. O. Box 959
Farmington, NM 87401

File: LF- 112- 416

Gallegos Canyon Unit
San Juan County, New Mexico
1990 Plan of Development

Amoco Production Company, as Unit Operator, submits the attached 1990 Plan of Development for the Gallegos Canyon Unit for your approval. The subject plan covers only formations from the base of the Pictured Cliffs to basement rock. BHP Petroleum Inc., suboperator of the formations from the surface to the base of the Pictured Cliffs formation, will submit a separate Plan of Development, in accordance with their recent designation as unit suboperator. The plan proposes the drilling of no new wells during 1990. All affected working interest owners have been contacted and the approval provisions of the Unit Operating Agreement have been followed.

If this Plan of Development is acceptable, please signify your approval in the space provided on the attached sheet and return an approved copy to Amoco Production Company at the above address to the attention of Steve Reber.

Please direct any questions regarding this correspondence to Steve Reber at (303) 830-5037.

Sincerely,

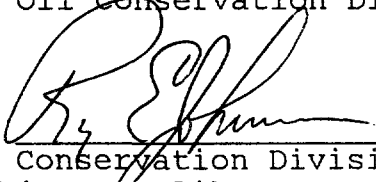
T. D. Autry SFR

SFR/pas

1990 Plan of Development
Gallegos Canyon Unit
February 15, 1990

APPROVED: _____ DATED: _____
Bureau of Land Management
(Subject to approval by the
Commissioner of Public Lands and
the Oil Conservation Division)

APPROVED: _____ DATED: _____
Commissioner of Public Lands
(Subject to like approval by the
Bureau of Land Management and
the Oil Conservation Division)

APPROVED:  _____ DATED: 4-30-90
Oil Conservation Division
(Subject to like approval by the
Bureau of Land Management and
the Commissioner of Public Lands)

The foregoing approvals are for the 1990 Plan of Development
for the Gallegos Canyon Unit, San Juan County, New Mexico.

Gallegos Canyon Unit
San Juan County, New Mexico
1990 Plan of Development
March 1, 1990

1990 Operations Summary

In 1989 Amoco Production Company, as operator of the Gallegos Canyon Unit, drilled no new wells. This was in accordance with Amoco's 1989 Plan of Development submitted February 20, 1989.

Number of Completions

	<u>Participating</u>	
	<u>Active</u>	<u>Inactive</u>
Dakota	200	63
Gallup	<u>3</u>	<u>44</u>
Total	203	107

Well Status

As of this date, the total number of wells in the Gallegos Canyon Unit is as follows:

	<u>Participating</u>
Dakota (DK)	263
Gallup (GP))	47
Plugged and Abandoned	<u>38</u>
	348

1990 Drilling Program

No wells are proposed for drilling during 1990.

RECEIVED
'90 APR 18 AM 8 40

4-18-90

D-Unit letter

Trx 123

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



April 16, 1990

Bureau of Land Management
P.O. Box 1449
Santa Fe, NM 87501

Bureau of Land Management
P.O. Box 6770
Albuquerque, NM 87197-6670

New Mexico State Land Office
Oil & Gas Development
P.O. Box 1148
Santa Fe, NM 87501-1148

State of New Mexico
Oil Conservation Commission
P.O. Box 2088
Santa Fe, NM 87501

Bureau of Land Management
Office of District Engineer
1235 LaPlata Highway
Farmington, NM 87401

Re: 1989 Review of Operations
1990 Plan of Development
Gallegos Canyon Unit
Pictured Cliffs, Fruitland, and Farmington Formations
San Juan County, New Mexico

Gentlemen:

As a sub-operator of certain unit lands within the Gallegos Canyon Unit located in San Juan County, New Mexico, BHP Petroleum (Americas) Inc. (BHP P(A)) submits for your review and approval the following 1989 Review of Operations and the 1990 Plan of Development.

1989 REVIEW OF OPERATIONS

For the BHP P(A) operated unit wells within the Gallegos Canyon Unit, the production of gas and water by reservoir for 1989 and on a cumulative basis to 12/31/89 is shown in Table I. A production curve for the summation of all unit wells is attached.

TABLE I
1989 PRODUCTION AND CUMULATIVE PRODUCTION

<u>Formation</u>	<u>1989 Production</u>		<u>Cumulative Production</u>	
	<u>Gas, MMCF</u>	<u>Water, BW</u>	<u>Gas, MMCF</u>	<u>Water, BW</u>
Pictured Cliffs	4,063.621	208,946	87,744.498	2,966,431
Fruitland	510.330	15,812	3,344.473	63,766
Farmington	2.227	80	56.999	80

The only development action taken by BHP P(A) in 1989 was the recompletion of the GCU No. 340. This well, located in the SW NW of section 24 T29N-R13W, had an initial test rate of 596 MCFD from Fruitland sand perms at 917'-934'. The drilling program proposed in the 1989 Plan of Development was not commenced in 1989 due to rig availability and permitting problems. As is further discussed in the 1990 Plan of Development, this program has been partially carried over into the 1990.

1990 PLAN OF DEVELOPMENT

In 1990, BHP P(A) proposes to drill 37 wells and recomplete 3 existing wells. Well number, location, and objective formation for these wells is summarized in Table II and Table III and also shown on the attached plat. Well numbers 373, 375, 379, and 380 proposed in the 1989 Plan of Development have been deferred to a later date pending further evaluation of the Fruitland Coal in the southern half of the Unit.

Commencement of this work will begin upon formal approval of AFEs, permits, and any applicable location exceptions.

We respectfully submit this Plan of Development and request your approval at your earliest convenience. Please provide both BHP P(A) and the Unit operator, Amoco Production Company, notice of approval of this plan.

Thank you.

Very truly yours,

BHP Petroleum (Americas) Inc.

Paul C. Bertoglio

Paul C. Bertoglio
Sr. Petroleum Engineer
Inland Business Unit

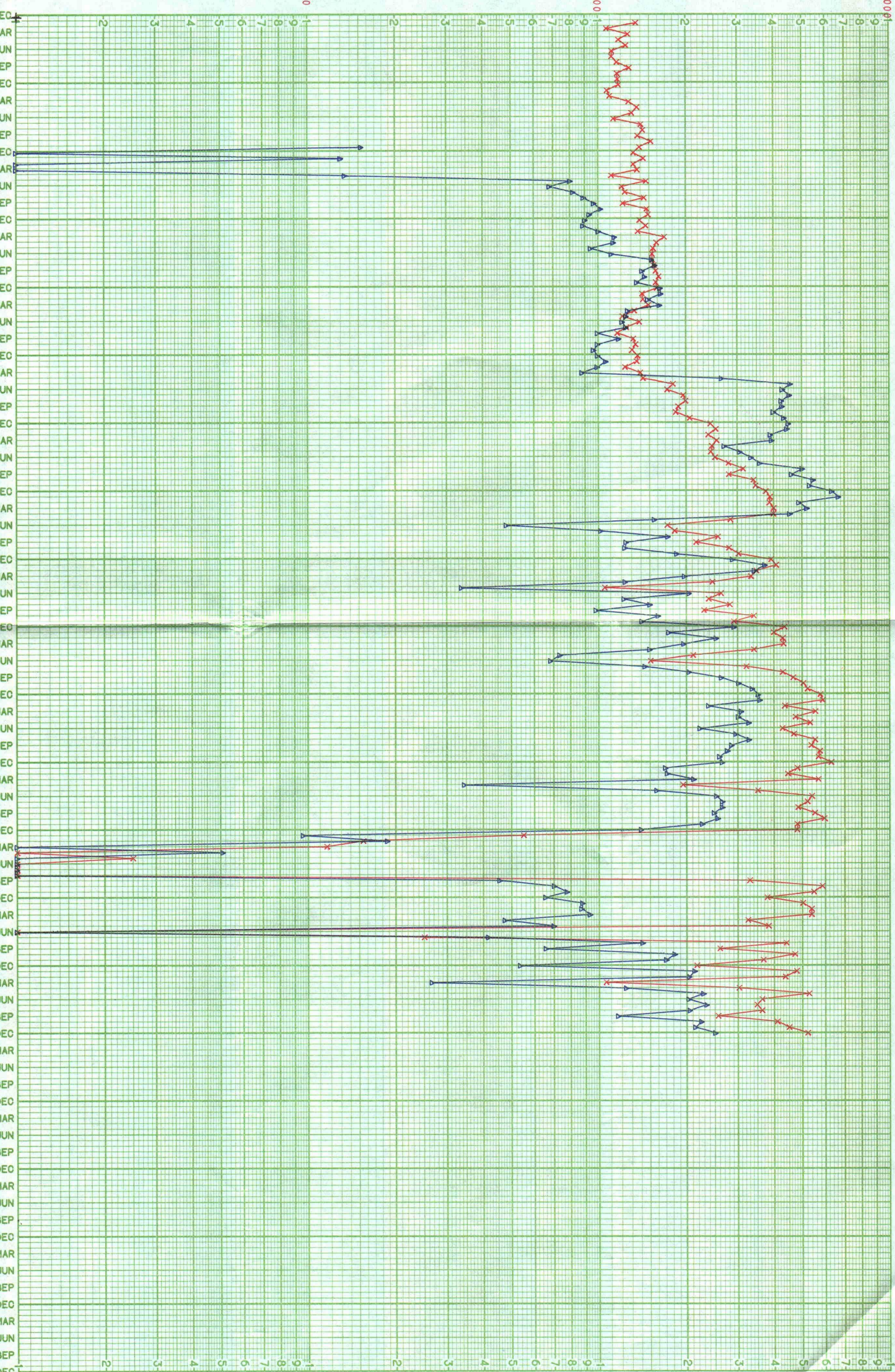
cc: Amoco Production Company
1670 Broadway
P.O. Box 800
Denver, CO 80201
Attn: Rocky Mountain Land Manager

TABLE II
1990 PROPOSED DRILLING WELLS

<u>Well No.</u>	<u>Location</u>	<u>Primary Objective</u>
377	SE SW Sec. 24 29N-13W	Fruitland Coal
378	NE SW Sec. 34 28N-12W	Fruitland Coal
381	SE NE Sec. 20 29N-12W	Fruitland Coal
382	SE SW Sec. 13 29N-13W	Fruitland Coal
383	NW NE Sec. 18 29N-12W	Fruitland Coal
384	SW SW Sec. 21 29N-12W	Fruitland Coal
385	SW SW Sec. 17 29N-12W	Fruitland Coal
386	NE NE Sec. 13 29N-13W	Fruitland Coal
387	SW SW Sec. 18 29N-12W	Fruitland Coal
388	SW NE Sec. 17 29N-12W	Fruitland Coal
389	SW NE Sec. 21 29N-12W	Fruitland Coal
390	SE SW Sec. 23 29N-13W	Fruitland Coal
391	NE NE Sec. 23 29N-13W	Fruitland Coal
392	SW SW Sec. 26 29N-12W	Fruitland Coal
393	SE SW Sec. 25 29N-12W	Fruitland Coal
394	SE SW Sec. 30 29N-12W	Fruitland Coal
395	NW NE Sec. 30 29N-12W	Fruitland Coal
396	NE SW Sec. 35 29N-12W	Fruitland Coal
397	NE SW Sec. 36 29N-12W	Fruitland Coal
500	NE NW Sec. 13 29N-13W	Pictured Cliffs
501	NW SE Sec. 13 29N-13W	Pictured Cliffs
502	SW NW Sec. 18 29N-12W	Pictured Cliffs
503	SW SE Sec. 18 29N-12W	Pictured Cliffs
504	NE NW Sec. 17 29N-12W	Pictured Cliffs
505	NE SE Sec. 17 29N-12W	Pictured Cliffs
506	NW SW Sec. 16 29N-12W	Pictured Cliffs
507	NW NW Sec. 20 29N-12W	Pictured Cliffs
508	NW NW Sec. 21 29N-12W	Pictured Cliffs
509	NE NW Sec. 28 29N-12W	Pictured Cliffs
510	NW NE Sec. 28 29N-12W	Pictured Cliffs
511	NW NW Sec. 26 29N-12W	Pictured Cliffs
512	NW SE Sec. 26 29N-12W	Pictured Cliffs
513	SE NE Sec. 34 29N-12W	Pictured Cliffs
514	SW SE Sec. 34 29N-12W	Pictured Cliffs
515	SE NE Sec. 35 29N-12W	Pictured Cliffs
516	NW SW Sec. 7 28N-11W	Pictured Cliffs
517	SE NE Sec. 18 28N-11W	Pictured Cliffs

TABLE III
1990 PROPOSED RECOMPLETIONS

<u>Well No.</u>	<u>Location</u>	<u>Objective Zone</u>
28	NE NE Sec. 30 29N-12W	Fruitland Sand
274	SE SE Sec. 20 28N-12W	Fruitland Coal
319	SE NW Sec. 30 28N-12W	Fruitland Coal

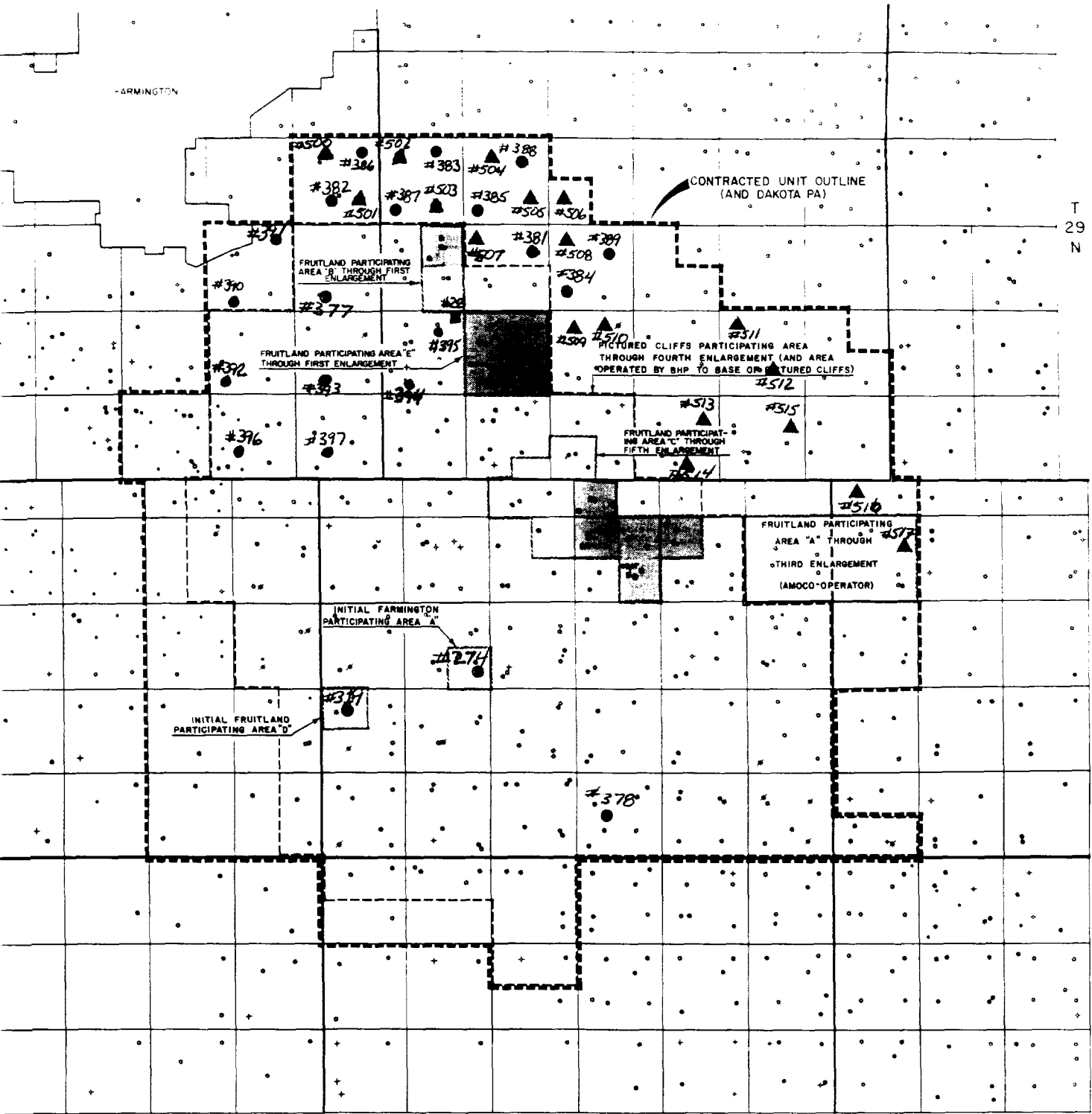


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T 29 N

T 28 N

T 27 N

- - Fruitland Sand
- - Fruitland Coal
- ▲ - Pictured Cliffs

LANDS ADDED BY THIS APPLICATION

ROCKY MOUNTAIN REGION

3412 DIC HIGHWAY

SUITE 400

ENGLEWOOD, COLORADO 80111

1921 890-9900

GALLEGOS CANYON UNIT

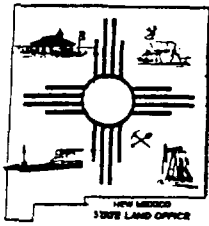
SAN JUAN COUNTY, NEW MEXICO

PARTICIPATING AREA MAP FOR

FARMINGTON, FRUITLAND AND

PICTURED CLIFFS FORMATIONS

LAND
LEGAL
EMP.
CONTACT



State of New Mexico
Commissioner of Public Lands

W. R. Humphries
COMMISSIONER

Advisory Board March 19, 1990

George Clark
Chairman

BHP Petroleum Americas Inc
5847 San Felipe, Suite 3600
Houston, Texas 77057

Kristin Conniff
Vice Chairman

Melvin Cordova

Joe Kelly

Robert Portillos

ATTN: Mr. Donald Reinhardt

Nancy Lynch Vigil

RE: Designation of Sub-Operator
Gallegos Canyon Unit
San Juan County, New Mexico

Rex Wilson

Gentlemen:

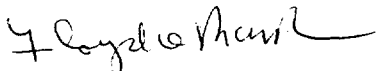
We received your letter and designation of sub-operator instrument naming BHP as sub-operator for the drilling and production of unitized substances from all formations from the surface to the base of the Pictured Cliffs formation in the Gallegos Canyon Unit.

We note that the BLM has approved this designation of sub-operator and concur with their findings. The Commissioner of Public Lands hereby approves the designation of BHP as sub-operator for the drilling and production of unitized substances from all formations from the surface to the base of the Pictured Aliffs formation in the Callegos Canyon Unit, effective November 30, 1989. An approved copy of the designation of sub-operator is enclosed for your files.

If you have any questions, please call Susan Howarth at (505) 827-5791.

Very truly yours,

W.R. HUMPHRIES,
COMMISSIONER OF PUBLIC LANDS

BY: 

FLOYD O. PRANDO, Director
Oil and Gas Division
(505) 827-5744

NEW MEXICO OIL CONSERVATION DIVISION
1207 111

SO FEB 6 AM 8 58

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

247

February 1, 1990



New Mexico Oil Conservation Division
310 Old Santa Fe Trail
Room 206
Santa Fe, NM 87503

State of New Mexico
Commissioner of Public Lands
P. O. Box 1148
Santa Fe, NM 87504

Navajo Nation Minerals Department
P. O. Box 146
Window Rock, AZ 86615

Re: Designation of Sub-Operator
Gallegos Canyon Unit Operator
San Juan County, NM

Gentlemen:

A designation of sub-operator instrument naming BHP as sub-operator for the drilling and production of unitized substances from all formations from the surface to the base of the Pictured Cliffs formation in Gallegos Canyon Unit was approved by the Bureau of Land Management effective November 30, 1989. Enclosed for your review is a copy of the approved instrument along with a copy of BLM's cover letter addressed to BHP advising of such approval. With submission of this letter, BHP hereby requests the concurrence of each of your agencies to the designation of BHP as sub-operator of Gallegos Canyon as indicated above.

Your prompt attention to this matter will be greatly appreciated. Should you need more information, please advise.

Very truly yours,

A handwritten signature in cursive script that reads "Donald Reinhardt".

Donald Reinhardt
Landman
Inland Business Unit

DR:CFL

Enclosure

DESIGNATION OF SUBOPERATOR
Gallegos Canyon Unit Area
San Juan County, New Mexico

THIS DESIGNATION is made and entered into this 30th day of November, 1989, by and between AMOCO PRODUCTION COMPANY, a Delaware corporation, whose mailing address is P. O. Box 800, Denver, Colorado 80201 (hereinafter sometimes referred to as "Operator") and BHP PETROLEUM (AMERICAS) INC., whose mailing address is 5847 San Felipe, Suite 3600, Houston, Texas 77057 (hereinafter sometimes referred to as "Suboperator");

WHEREAS, Operator is Unit Operator for the Gallegos Canyon Unit located in the County of San Juan, New Mexico, and

WHEREAS, BHP Petroleum (Americas) Inc. (formerly Energy Reserves Group, Inc., formerly Clinton Oil Company) has previously been approved as Suboperator of the depths and formations from the surface down to the base of the Pictured Cliffs formation ("shallow formations") under all of those lands now designated as the Pictured Cliffs Participating Area of the Gallegos Canyon Unit.

WHEREAS, Suboperator desires to test, at its own election and pursuant to the provisions of that certain Farmout Agreement, dated October 20, 1989, by and between Operator and Suboperator ("Farmout Agreement"), any one or all potentially productive zones of the shallow formations in various wells at selected locations within the Gallegos Canyon Unit, but not under those lands currently operated by Suboperator and now designated as the Pictured Cliffs Participating Area of the Gallegos Canyon Unit, pursuant to Section Twelve (12) of the Gallegos Canyon Unit Agreement.

For this reason Suboperator has requested to be designated as Suboperator for all formations from the

surface of the ground to the base of the Pictured Cliffs formation under all of those lands within the Gallegos Canyon Unit, San Juan County, New Mexico.

WHEREAS, the above described area is committed to the terms and conditions of the Gallegos Canyon Unit Agreement and Gallegos Canyon Unit Operating Agreement; and

WHEREAS, Suboperator has been furnished notice of Operator's election not to drill those wells desired by Suboperator to test any of the formations from the surface of the ground to the base of the Pictured Cliffs formation within the above noted area; and

WHEREAS, Suboperator has requested that Operator execute this Designation in order that such wells may be drilled by Suboperator;

NOW, THEREFORE, Amoco Production Company, as Unit Operator of the Gallegos Canyon Unit, does hereby designate BHP Petroleum (Americas) Inc. as Suboperator for all zones from surface to the base of the Pictured Cliffs formation within the entire Gallegos Canyon Unit, pursuant to Section Twelve (12) of the Gallegos Canyon Unit Agreement.

Suboperator indicates acceptance of this Designation by signatory execution in the space provided below and agrees to drill, complete and/or plug and abandon all wells and to conduct all operations as a reasonable and prudent Operator in accordance with the terms and conditions of the Gallegos Canyon Unit Agreement, the Gallegos Canyon Unit Operating Agreement, and the Farmout Agreement, and also agrees to the following conditions:

1. Allow representatives of Operator access to the derrick floor at all times at Operator's sole risk and expense.
2. As to all operations hereunder, Suboperator shall carry and file with Operator, for its approval, evidence of its satisfaction of the minimum bonding requirements of all governmental agencies having jurisdiction and evidence of Workmen's compensation and Employers' Liability

Insurance with limits of \$500,000 for each occurrence in accordance with state, provincial, and federal laws including Longshoremen's and Harbor worker's and as extended to Outer Continental Shelf Operations and other maritime laws, as applicable. If under the laws of the jurisdiction in which operations are conducted Suboperator is authorized to be a self-insurer as to workmen's compensation or employers' liability, Suboperator may elect to be a self-insurer under such laws.

Suboperator shall carry such other insurance as specified in the Farmout Agreement. The liability, if any, of the Suboperator hereto in damages for claims growing out of personal injury to or death of third persons or injury or destruction of property of third parties resulting from the operation and development of the premises covered hereby shall be borne by the Suboperator. Suboperator shall require all third party contractors performing work in or on the premises covered hereby to comply with the Workman's Compensation laws of the governmental agencies having jurisdiction and to carry such insurance and in such amounts as Suboperator shall deem necessary.

3. Furnish the United States Bureau of Land Management and the Oil Conservation Commission of the State of New Mexico all proper and necessary reports and well data in the required numbers and time periods as specified by the United States Bureau of Land Management and the Oil Conservation Commission of the State of New Mexico, with a copy to Operator at the addresses hereinafter provided.
4. Provide the Commissioner of Public Lands of the State of New Mexico with copies of all reports and other well data submitted in accordance with the preceding paragraph.

All notices, samples, or other information required to be furnished shall be sent to:

Amoco Production Company
P. O. Box 800
Denver, CO 80201
Attention: Southern Division Operations
Engineer

Suboperator shall comply with all applicable laws, rules and regulations of any governmental authority having jurisdiction over operations performed under this Designation, and shall defend, indemnify, protect and hold Operator harmless from and against any and all claims, demands or causes of action for injuries or death to persons or damage to property occurring in connection with

or in any manner incident to operations conducted by the Suboperator hereunder.

Suboperator is aware that drilling of any well as a result of this Designation is subject to approval by the Oil Conservation Commission of the State of New Mexico as to privately owned lands, the Commissioner of Public Lands of the State of New Mexico as to State lands, and the Assistant District Manager, Minerals, of the United States Bureau of Land Management, Farmington, New Mexico, as to Federal and/or Indian lands.

THIS DESIGNATION is personal and cannot be assigned in whole or in part by Suboperator without the written consent of Operator having first been obtained.

THIS DESIGNATION shall continue to be effective until Suboperator ceases to continuously develop the shallow formations in accordance with the terms and conditions of the Galleogs Canyon Unit Agreement, the Gallegos Canyon Unit Operating Agreement and the Farmout Agreement.

IN WITNESS WHEREOF, this Designation is executed as of the day and year first hereinabove written.

OPERATOR

AMOCO PRODUCTION COMPANY

By G. W. Chipman
Its Attorney-in-Fact *mk gpc*

APPROVED

JAN 26 1990
[Signature]
AREA MANAGER

SUB-OPERATOR

BHP PETROLEUM (AMERICAS) INC.

By Randall L. Davis
Its Attorney-in-Fact
Randall L. Davis *RD*

STATE OF COLORADO)
CITY AND : ss.
COUNTY OF DENVER)

The foregoing instrument was acknowledged before me this 27th day of December, 1989, by C. W. [Signature] Attorney-in-Fact for AMOCO PRODUCTION COMPANY, a Delaware corporation.

WITNESS my hand and official seal.

[Signature]
Notary Public

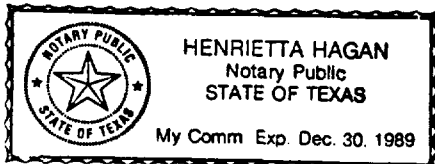
My Commission expires:

6/20/90

STATE OF TEXAS)
COUNTY OF HARRIS : ss.
)

The foregoing instrument was acknowledged before me this 19th day of December, 1989, by Randall L. Davis, as Attorney-in-Fact for BHP PETROLEUM (AMERICAS) INC., a corporation.

WITNESS my hand and official seal.



[Signature]
Notary Public
Henrietta Hagan

My Commission expires:

12/30/89

APPROVED _____
Assistant District Manager, Minerals
Bureau of Land Management
Subject to like approval by the
Commissioner of Public Lands and the
Oil Conservation Commission

DATE _____

APPROVED _____
Commissioner of Public Lands
Subject to like approval by the
Area Oil and Gas Supervisor and
the Oil Conservation Commission

DATE _____

APPROVED [Signature]
Oil Conservation Commission
Subject to like approval by the
Area Oil and Gas Supervisor and
the Commissioner of Public Lands

DATE 2-6-90

The foregoing approvals are for the Designation of BHP Petroleum (Americas) Inc. as Suboperator for the Pictured Cliffs and shallower formations within the Gallegos Unit, San Juan County, New Mexico.

State of New Mexico

#247



W.R. HUMPHRIES
COMMISSIONER



Commissioner of Public Lands

September 28, 1989

P.O. BOX 1148
SANTA FE, NEW MEXICO 87504-1148

Amoco Production Company
Denver Region
P.O. Box 800
Denver, CO 80201

ATTN: T.D. Autry

RE: Gallegos Canyon Unit
San Juan County, New Mexico
1989 Plan of Development and
Supplemental 1989 Plan of Development

Gentlemen:

The Commissioner of Public Lands has this date approved your 1989 Plan of Development and your Supplemental 1989 Plan of Development. Our approval is subject to like approval by all other appropriate agencies.

Enclosed is an approved copy of each for your files. If we may be of further help, please do not hesitate to contact Susan Howarth at (505) 827-5791.

Very truly yours,

W.R. HUMPHRIES
COMMISSIONER OF PUBLIC LANDS

BY: *Floyd O. Prando by B. Strohman*
FLOYD O. PRANDO, Director
Oil and Gas Division
(505) 827-5749

cc: OCD - Santa Fe, New Mexico
BLM
Unit Correspondence File
Unit P.O.D. File

WRH/FOP/SMH

RECEIVED

SEP 25 1989

OIL CONSERVATION DIV.
SANTA FE

Gallegos Canyon Unit (POD)
3180 (019)

SEP. 22 1989

Amoco Production Company
P. O. Box 800
Denver, CO 80201

Gentlemen:

One approved copy of your 1989 Plan of Development for the Gallegos Canyon Unit area, San Juan County, New Mexico, is enclosed. Such plan, proposing the drilling of 5 Fruitland Coal wells (GCU No. 381, GCU No. 382, GCU No. 383, GCU No. 384 and GCU No. 385); 6 Fruitland Coal/Fruitland Sand wells (GCU No. 373, GCU No. 375, GCU No. 377, GCU No. 378, GCU No. 379 and GCU No. 380) and the recompletion of the GCU No. 340 well in the Fruitland Sand was approved on this date subject to like approval by the appropriate officials of the State of New Mexico.

The possibility of drainage by wells outside of the unit boundary may exist. You will be contacted at a later date about this possibility.

If you have any questions, please contact Gail Keller at the above address or telephone (505) 327-5344.

Sincerely,

/s/ John L. Keller

John Keller
Chief, Branch of Minerals

Enclosure

cc: Navajo Nation Minerals Department, P. O. Box 146, Window Rock, AZ 86615
New Mexico Oil Conservation Division, State Land Office Building,
P. O. Box 2088, Santa Fe, NM 87504
Commissioner of Public Lands, State of New Mexico, P. O. Box 1148,
Santa Fe, NM 87504



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

GARREY CARRUTHERS
GOVERNOR

September 11, 1989

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

Amoco Production Company
P. O. Box 800
Denver, Colorado 80201

Attention: T. D. Autry

Re: Supplemental 1989 Plan of Development
Gallegos Canyon Unit
San Juan County, New Mexico

Gentlemen:

The above-referenced submittal has been approved by the New Mexico Oil Conservation Division effective this date. Such approval is contingent upon like approval by the New Mexico Commissioner of Public Lands and the Bureau of Land Management.

Sincerely,

A handwritten signature in cursive script, appearing to read "Roy E. Johnson".

ROY E. JOHNSON,
Senior Petroleum Geologist

REJ/dr

cc: Commissioner of Public Lands - Santa Fe
Bureau of Land Management - Albuquerque

BHP Petroleum Inc.
1560 Broadway, Suite 1900
Denver, Co. 80202



OK'd 9-11-89

Amoco Production Company

Southern Division
1670 Broadway
P.O. Box 800
Denver, Colorado 80201
303-830-4040

T. D. Autry
Division Production Manager

August 30, 1989

Bureau of Land Management
P.O. Box 1449
Santa Fe, NM 87501

Bureau of Land Management
P.O. Box 6770
Albuquerque, NM 87197-6770

New Mexico State Land Office
Oil and Gas Development
P.O. Box 1148
Santa Fe, NM 87501-1148

Oil Conservation Commission
State of New Mexico
P.O. Box 2088
Santa Fe, NM 87501

Office of District Engineer
Bureau of Land Management
1235 La Plata Highway
Farmington, NM 87401

RECEIVED

SEP 11 1989

OIL CONSERVATION DIV.
SANTA FE

File: LF-120-414

Gentlemen:

Supplemental 1989 Plan of Development
Gallegos Canyon Unit
San Juan County, New Mexico

Amoco Production Company, Unit Operator of the Gallegos Canyon Unit (GCU), submits for your consideration a supplemental 1989 Plan of Development. Please advise Amoco, at your earliest convenience, of your concurrence.

Please direct any questions to Steve Reber at (303) 830-5037.

Very truly yours,

T D Autry 107

SFR/sh

cc: BHP Petroleum Inc.
1560 Broadway, Suite 1900
Denver, CO 80202

Date

Bureau of Land Management
P. O. Box 1449
Santa Fe, NM 87501

Bureau of Land Management
P. O. Box 6770
Albuquerque, NM 87197-6770

New Mexico State Land Office
Oil & Gas Development
P. O. Box 1148
Santa Fe, NM 87501-1148

Oil & Conservation Commission
State of New Mexico
P. O. Box 2088
Santa Fe, NM 87501

Office of District Engineer
Bureau of Land Management
1235 La Plata Highway
Farmington, NM 87401

RE: 1989 Plan of Development and 1988 Review of Operations
Gallegos Canyon Unit
Pictured Cliffs, Farmington and Fruitland Formations
San Juan County, New Mexico

Gentlemen:

Amoco Production Company, as Operator of the Gallegos Canyon Unit, on behalf of BHP Petroleum (Americas), Inc., the Sub-Operator of certain unit lands, submits the following 1988 Review of Operations and proposed 1989 Plan of Development.

1988 Review of Operations

Total cumulative and 1988 production for those wells operated by BHP Petroleum (Americas) Inc. within the Gallegos Canyon Unit is summarized below.

<u>Formation</u>	<u>1988 Production</u> <u>12/31/88, MMCF</u>	<u>Cum. Production</u> <u>12/31/88, MMCF</u>
Pictured Cliffs	3,758.277	83,680.877
Fruitland	505.093	2,834.143
Farmington	3.231	54.772

BHP completed five (5) Pictured Cliffs wells and recompleted one (1) Fruitland well during 1988. The following table provides information for each of these wells.

<u>Well#</u>	<u>Location</u>	<u>Spud Date</u>	<u>Comp. Date</u>	<u>Perforations</u>	<u>Initial Rate</u>
		Dual			
331	29-29N-12W	Recomp.	7/6/88	936'-948' Fruit	230 M/D
363	26-29N-14W	5/11/88	5/27/88	1572'-1584" PC	275 M/D
364	25-29N-13W	4/26/88	5/23/88	1210'-1226' PC	414 M/D
365	25-29N-13W	4/30/88	5/25/88	1246'-1266' PC	465 M/D
367	31-29N-12W	5/3/88	5/26/88	1455'-1470' PC	543 M/D
368	26-28N-12W	5/6/88	7/13/88	1589'-1618' PC	210 M/D

1989 Plan of Development

BHP proposes to drill five (5) Fruitland coal seam wells and six (6) Fruitland coal seam/Fruitland sandstone dual wells as shown on the attached map and tabulated below.

<u>Well</u>	<u>Location</u>	<u>Formation(s)</u>
381	NE Sec. 20-29N-12W	Fruitland Coal
382	SW Sec. 13-29N-13W	Fruitland Coal
383	NE Sec. 18-29N-12W	Fruitland Coal
384	NE Sec. 21-29N-12W	Fruitland Coal
385	SW Sec. 17-29N-12W	Fruitland Coal
373	SWSW Sec. 12-28N-13W	Fruitland Coal/Fruitland Sd.
375	SENE Sec. 17-28N-12W	Fruitland Coal/Fruitland Sd.
377	NE Sec. 24-29N-13W	Fruitland Coal/Fruitland Sd.
378*	SE Sec. 34-28N-12W	Fruitland Coal/Fruitland Sd.
379	NE Sec. 30-28N-12W	Fruitland Coal/Fruitland Sd.
380	SW Sec. 23-28N-12W	Fruitland Coal/Fruitland Sd.

*Exception location for coal seam gas well for which BHP intends to apply for an exception to allow dual completion.

Drilling will commence upon all formal approvals including AFE's. These locations are limited to the lands which BHP sub-operates and do not include any wells which would require submittal by Amoco to the unit working interest owners.

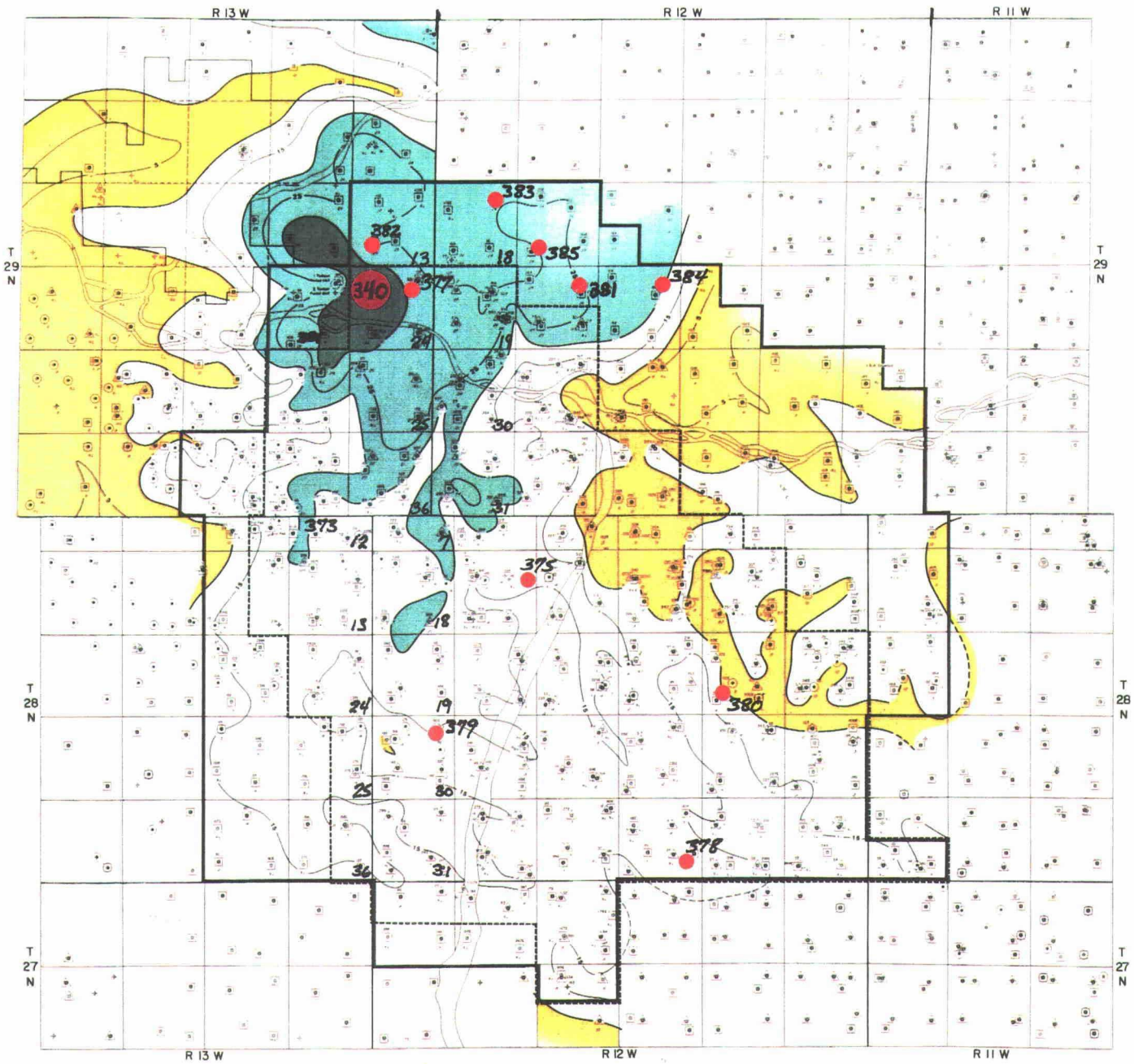
In addition to the above drilling, BHP will recomplete the GCU #340 well located SWNW Section 24-T29N, R13W, in the Fruitland Sand situated at 917'-934'. This well was originally completed as a Pictured Cliffs well, but water production and related trucking costs have resulted in uneconomic operations.

We respectfully submit this Plan of Development and request your approval at your earliest convenience. Please provide notice to both Amoco and BHP upon approval of the plan.

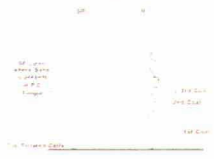
Very truly yours,

AMOCO PRODUCTION COMPANY

cc: BHP Petroleum (Americas) Inc.
1560 Broadway, Suite 1900
Denver, Colorado 80202



Type Log



- Fruitland
- Pictured Cliffs
- 1st Coal above Pictured Cliffs
- Mesaverde
- Cneors

12. No pertinent log available thru interval on microfilm in house
 N.D.E. Well not deep enough to evaluate

- 10' contour
- 20' contour
- 30' contour



GALLEGOS CANYON
 SAN JUAN CO., NEW MEXICO

Isopach
 1st Coal above Pictured Cliffs
 CI 4 6 N



W.R. HUMPHRIES
COMMISSIONER



Commissioner of Public Lands

November 9, 1988

P.O. BOX 1148
SANTA FE, NEW MEXICO 87504-1148

BHP Petroleum
Attn: Mr. Donald Reinhardt
5613 DTC Parkway, Suite 600
Englewood, Colorado 80111

Re: Fruitland Participating Areas
Gallegos Canyon Unit
San Juan County, New Mexico

Gentlemen:

This office is in receipt of your letter of October 20, 1988, together with copies of correspondence between BHP and the BLM leading up to their approval of BHP's revised application pertaining to the various Fruitland participating areas located within the Gallegos Canyon Unit.

The Commissioner of Public Lands concurs with the BLM and has this date approved the following participating areas:

The First Revision to the Fruitland "B" Participating Area is effective as of August 1, 1985 and is described as the NE $\frac{1}{4}$ of Section 19, Township 29 North, Range 12 West, containing 160.00 acres. This revision is based upon the completion of the Unit Well No. 356.

The Second Revision to the Fruitland "C" participating area is effective as of January 1, 1985 and is described as the SE $\frac{1}{4}$ of Section 15, Township 28 North, Range 12 West, containing 160.00 acres. This revision is based upon the completion of the Unit Well No. 347

The Third Revision to the Fruitland "C" participating area is effective as of March 1, 1985 and is described as the NW $\frac{1}{4}$ of Section 15, Township 28 North, Range 12 West, containing 160.00 acres. This revision is based upon the completion of the Unit Well No. 346.

The Fourth Revision to the Fruitland "C" participating area is effective as of August 1, 1985 and is described as the NE $\frac{1}{4}$ of Section 15 and the NW $\frac{1}{4}$ of Section 14, both in Township 28 North, Range 12 West, containing 320.00 acres. This revision is based upon the completion of the Well Nos. 360 and 361.

The Fifth Revision to the Fruitland "C" participating area is effective as of September 1, 1985 and is described as Lots 3,4,S $\frac{1}{2}$ SW $\frac{1}{4}$ of Section 10, Township 28 North, Range 12 West, containing 135.93 acres. This revision is based upon the completion of the Well No. 359.

The Initial Fruitland "E" Participating area is effective as of February 12, 1985 and is described as the SW $\frac{1}{4}$ of Section 29, Township 29 North, Range 12 West, containing 160.00 acres. This revision is based upon the completion of the Well No. 344.

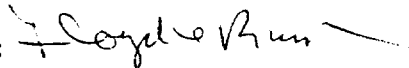
The First Revision to the Fruitland "E" participating area is effective as of August 1, 1985 and is described as the the N $\frac{1}{2}$,SE $\frac{1}{4}$ of Section 29, Township 29 North, Range 12 West, containing 480.00 acres. This revision is based upon the completion of the Well Nos. 357 and 358.

This office also concurs with the Bureau of Land Management that the Unit Well No. 341 located in the NE $\frac{1}{4}$ of Section 16 and the Unit Well No. 351 located in the SE $\frac{1}{4}$ of Section 10, Township 28 North, Range 12 West, are non-commercial and should be produced on a lease basis.

If we may be of further help please do not hesitate to call on us.

Very truly yours,

W. R. HUMPHRIES
COMMISSIONER OF PUBLIC LANDS

BY: 
FLOYD O. PRANDO, Director
Oil and Gas Division
(505) 827-5744

WRH/FOP/pm
encls.
cc: OCD
BLM
OGAD

October 20, 1988



State of New Mexico
Commissioner of Public Lands
Post Office Box 1148
Santa Fe, New Mexico 87504-1148

Attn: Floyd O. Prando
Oil and Gas Division

Re: Fruitland Participating Areas
Gallegos Canyon Unit Area
San Juan County, New Mexico

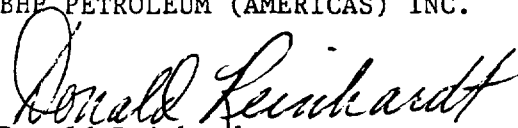
Dear Mr. Prando:

Pursuant to your request, enclosed you will find copies of BHP's application, map and schedules pertaining to the various Fruitland participating areas located within the Gallegos Canyon Unit, along with copies of correspondence between BHP and the BLM leading up to their approval of BHP's revised application.

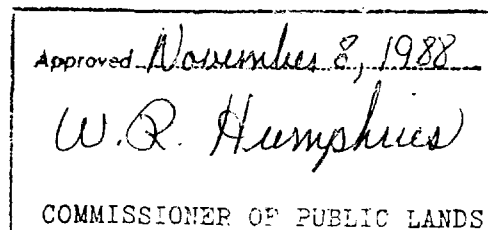
We apologize for not including the State in the approval process. Having inherited the project and having not worked a great deal in New Mexico, I was simply not aware of the extent of the State's involvement. Should the State desire any further information regarding this matter, please do not hesitate to call.

Very truly yours,

BHP PETROLEUM (AMERICAS) INC.


Donald Reinhardt
Landman

DR:js
Enclosures





United States Department of the Interior

BUREAU OF LAND MANAGEMENT ALBUQUERQUE DISTRICT OFFICE

435 Montano N.E.
Albuquerque, New Mexico 87107



IN REPLY REFER TO:

Gallegos Canyon (FRPA
"B", FRPA "C", FRPA "E")
3180 (015)

OCT 08 1988

BHP Petroleum
ATTN: Donald Reinhardt
5613 DTC Parkway, Suite 600
Englewood, CA 80111

Gentlemen:

We have received the revised application, map, and schedules submitted by letter dated September 13, 1988, for the First revision to the Fruitland "B" participating area, Second thru Fifth revisions to the Fruitland "C" participating area, and Initial and First revision to the Fruitland "E" participating area in the Gallegos Canyon Unit, San Juan County, New Mexico. The applications were approved on this date.

The First revision to the Fruitland "B" participating area comprises 160.00 acres described as the NE $\frac{1}{4}$ Section 19, T. 29 N., R. 12 W., NMPM, San Juan County, New Mexico. The First revision is based on the completion of well No. 356 and is effective August 1, 1985.

The Second revision to the Fruitland "C" participating area comprises 160.00 acres described as the SE $\frac{1}{4}$ Section 15, T. 28 N., R. 12 W., NMPM, San Juan County, New Mexico. The Second revision is based on the completion of well No. 347 and is effective January 1, 1985.

The Third revision to the Fruitland "C" participating area comprises 160.00 acres described as the SE $\frac{1}{4}$ Section 15, T. 28 N., R. 12 W., NMPM, San Juan County, New Mexico. The Third revision is based on the completion of well No. 346 and is effective March 1, 1985.

The Fourth revision to the Fruitland "C" participating area comprises 320.00 acres described as the NE $\frac{1}{4}$ Section 15 and the NW $\frac{1}{4}$ Section 14, both in T. 28 N., R. 12 W., NMPM, San Juan County, New Mexico. The Fourth revision is based on the completion of well Nos. 360 and 361 and is effective August 1, 1985.

The Fifth revision to the Fruitland "C" participating area comprises 135.93 acres described as Lots 3 and 4, S $\frac{1}{2}$ SW $\frac{1}{4}$ Section 10, T. 28 N., R. 12 W., NMPM, San Juan County, New Mexico. The Fifth revision is based on the completion of well No. 359 and is effective September 1, 1985.

The Initial Fruitland "E" participating area comprises 160.00 acres described as SW $\frac{1}{4}$ Section 29, T. 29 N., R. 12 W., NMPM, San Juan County, New Mexico. The Initial Fruitland "E" participating area is based on the completion of well No. 344 and is effective February 12, 1985.

The First revision to the Fruitland "E" participating area comprises 480.00 acres described as N $\frac{1}{2}$ and SE $\frac{1}{4}$ Section 29, T. 29 N., R. 12 W., NMPM, San Juan County, New Mexico. The First revision is based on the completion of well Nos. 357 and 358 and is effective August 1, 1985.

Based on the information that was submitted and other available data, well No. 341 in the NE $\frac{1}{4}$ Section 16 and well No. 351 in the SE $\frac{1}{4}$ Section 10, T. 28 N., R. 12 W., have been determined to be non-commercial and do not qualify as unit wells under the terms of the unit agreement. The production from these wells will be handled on a lease basis.

Copies of the approved application are being distributed to the appropriate Federal offices and an approved copy is returned herewith. You are requested to furnish all other interested parties with appropriate evidence of this approval.

If you have any questions, please contact Robert Kent at (505) 761-4503.

Sincerely,

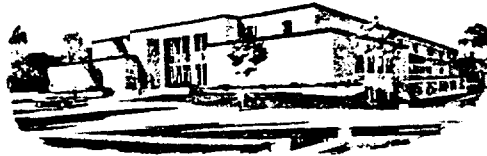
(Orig. Signed) - Sid Vogelwohl

Assistant District Manager
Mineral Resources

✓
NMOCD

SLO REF NO OG-915

State of New Mexico



W.R. HUMPHRIES
COMMISSIONER

Commissioner of Public Lands

P.O. BOX 1148
SANTA FE, NEW MEXICO 87504-1148

October 17, 1988

BHP Petroleum
Attn: Mr. Donald Reinhardt
5613 DTC Parkway, Suite 600
Englewood, Co. 80111

Re: Galleos Canyon Unit
Fruitland Participating Areas
San Juan County, New Mexico

Gentlemen:

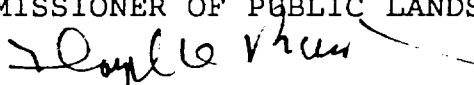
The Bureau of Land Management has advised this office by their letter of October 8, 1988, that your revised application, map, and schedules submitted by your letter dated September 13, 1988 for the Fruitland Participating Areas for the Gallegos Canyon Unit have been approved.

Please submit to this office for approval, your revised application, map, and schedules to this office for the First Revision to the Fruitland "B" participating area, Second thru fifth revisions to the Fruitland "C" participating area, and the Initial and First revision to the Fruitland "E" participating area.

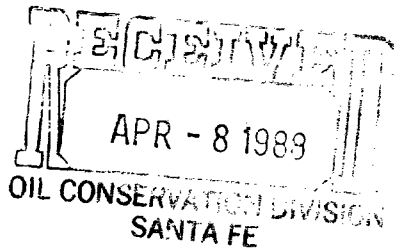
If we may be of further help please do not hesitate to call on us.

Very truly yours,

W. R. HUMPHRIES
COMMISSIONER OF PUBLIC LANDS

BY: 
FLOYD O. PRANDO, Director
Oil and Gas Division
(505) 827-5744

WRH/FOP/pm
encls.
cc: OCD
BLM



MAR 31 1989

Gallegos Canyon (POD)
3180 (015)

Amoco Production Company
ATTN: J.D. Hamrick
P.O. Box 800
Denver, CO 80201

Gentlemen:

One approved copy of your 1988 Plan of Development for the Gallegos Canyon Unit area, San Juan County, New Mexico is enclosed. Such plan, proposing the drilling of two Gallup wells and the recompletion of five Dakota wells is approved on this date subject to like approval by the appropriate officials of the State of New Mexico.

Starting with the 1989 Plan of Development, please provide the following information in your annual Plan of Development.

1. A summary of operations for the past year which should include up-to-date maps showing the latest geologic interpretations, all wells and participating area boundaries. Should there be no changes from one year to another, reference may be made to the most recent map submitted.
2. A list showing the status of all wells.
3. Performance curves covering the productive life of each horizon under a participating area, including injectivity curves.
4. Your plans for development within the unit area for the next year.
5. Pertinent data as to the effectiveness of the enhanced recovery project (if applicable). This information should include data on current and cumulative water injection rates, current and cumulative water, gas, and oil production and current water-oil ratios. A short discussion as to the general progress of the flood and any significant changes in any phase of the project should also be included.

All plans of development are to be filed in triplicate.

If you have any questions on this matter, please contact Shirley Bryant at the above address or telephone (505) 761-4503.

Sincerely,

(ORIG. SGD.) DENNIS B. UMSHLER

For District Manager

cc:

NM-019

✓NMOCD, (w/o encl)

Comm. of Pub. Lands (w/o encl)

015:SBryant:ja:3-29-88:4031M

APR 25 1988
CIL CONSULTING
SANTA FE

APR 22 1988

Gallegos Canyon (POD)
3180 (015)

BHP Petroleum
ATTN: Chuck Williams
5613 Ote Parkway, Suite 600
Englewood, CO 80111

Gentlemen:

One approved copy of your 1988 supplemental Plan of Development for the Gallegos Canyon Unit area, San Juan County, New Mexico is enclosed. Such plan, proposing the drilling of one Gallup well (GCU well No. 188G), the recompletion of two non-productive Dakota wells to Gallup wells (GCU well No. 183R and GCU well No. 158), the drilling of six Pictured Cliffs wells (GCU wells No. 362, No. 363, No. 364, No. 365, No. 367 and No. 368), and the drilling of one Fruitland well (GCU well No. 366), was approved on this date subject to like approval by the appropriate officials of the State of New Mexico.

1. A summary of operations for the past year which should include up-to-date maps showing the latest geologic interpretations, all wells and participating area boundaries. Should there be no changes from one year to another, reference may be made to the most recent map submitted.
2. A list showing the status of all wells.
3. Performance curves covering the productive life of each horizon under a participating area, including injectivity curves.
4. Your plans for development within the unit area for the next year.
5. Pertinent data as to the effectiveness of the enhanced recovery project (if applicable). This information should include data on current and cumulative water injection rates, current and cumulative water, gas, and oil production and current water-oil ratios. A short discussion as to the general progress of the flood and any significant changes in any phase of the project should also be included.

All plans of development are to be filed in triplicate.

If you have any questions, please contact Gail Keller at the above address or telephone (505) 761-4503.

Sincerely,

(Orig. Signed) GARY A. STEPHENS

Assistant District Manager
Mineral Resources

cc:NM-019***NMOCD, Santa Fe
Comm of Pub. Lands, Santa Fe**015:GKeller:ja:4/19/88:4090M



100000 1000000

OPERATOR BHP P (A)

ZONE ALL ZONES

CO. GAS

COUNTY SAN JUAN

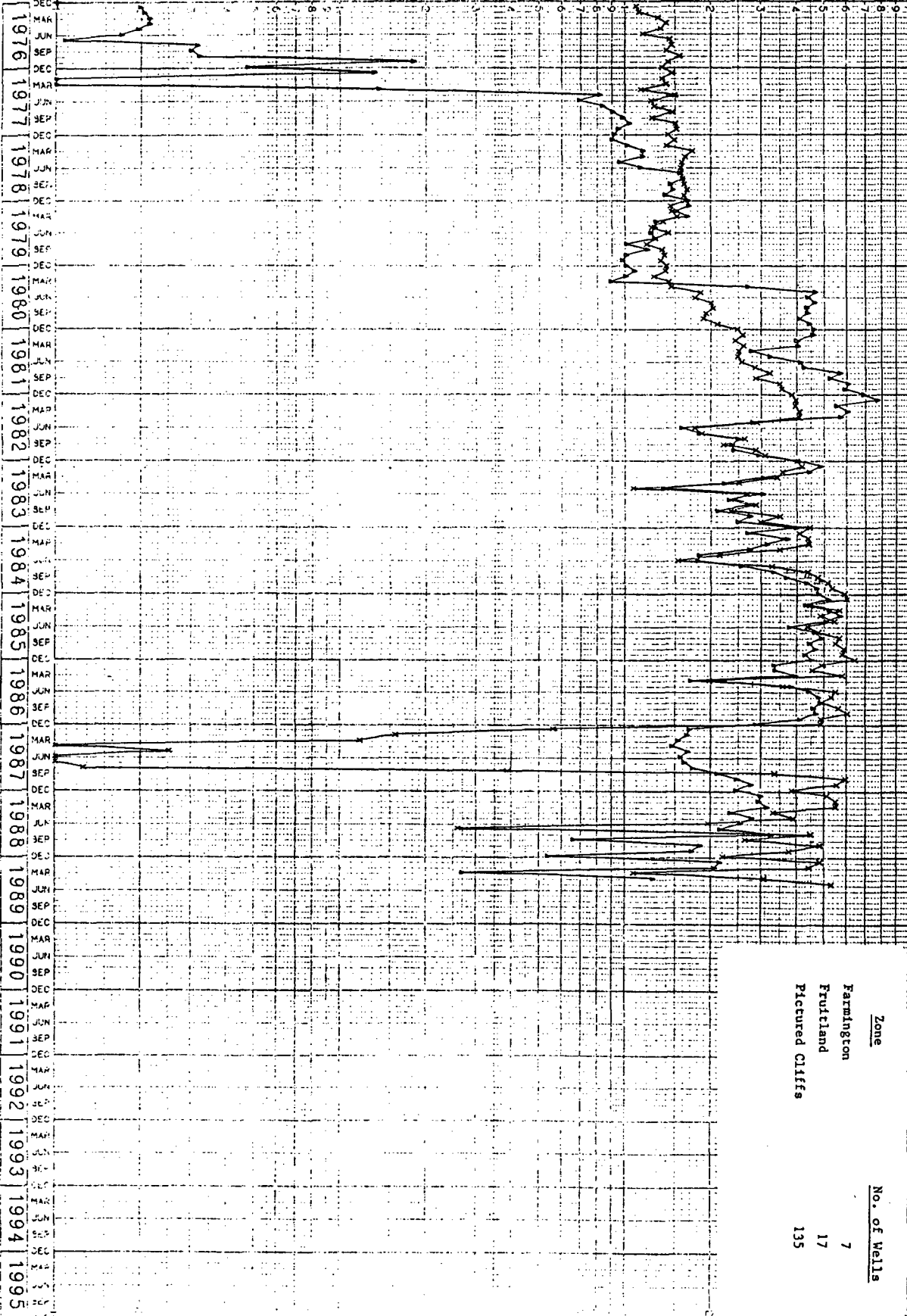
STATE NM

FIELD GALLEGOS CANYON UNIT

LEASE SUMMARY OF 159 WELLS

D/V

100
A
MTR
BPMH



Zone	No. of Wells
Farmington	7
Fruitland	17
Pictured Cliffs	135

W

NO

PC



100000 100000

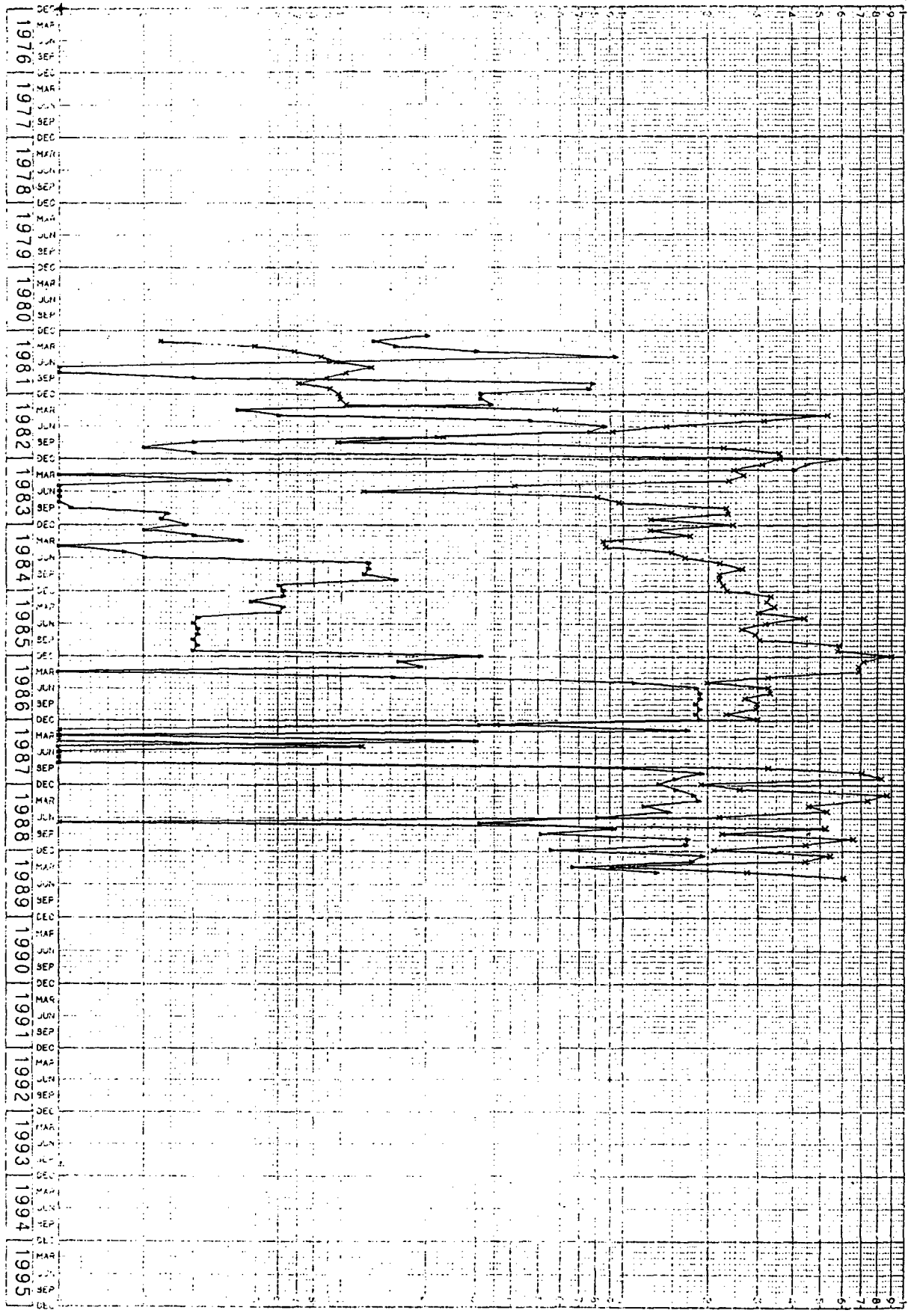
OPERATOR BHP P(A)
ZONE FRUITLAND

OK
COUNTY SAN JUAN
STATE NM

FIELD GALLEGOS CANYON UNIT
LEASE SUMMARY OF 17 WELLS

OK

100
X
GAS
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100000



1



BHP Petroleum
A Division of BHP

OPERATOR BHP P(A)

ZONE PICTURED CLIFFS

DL

DL

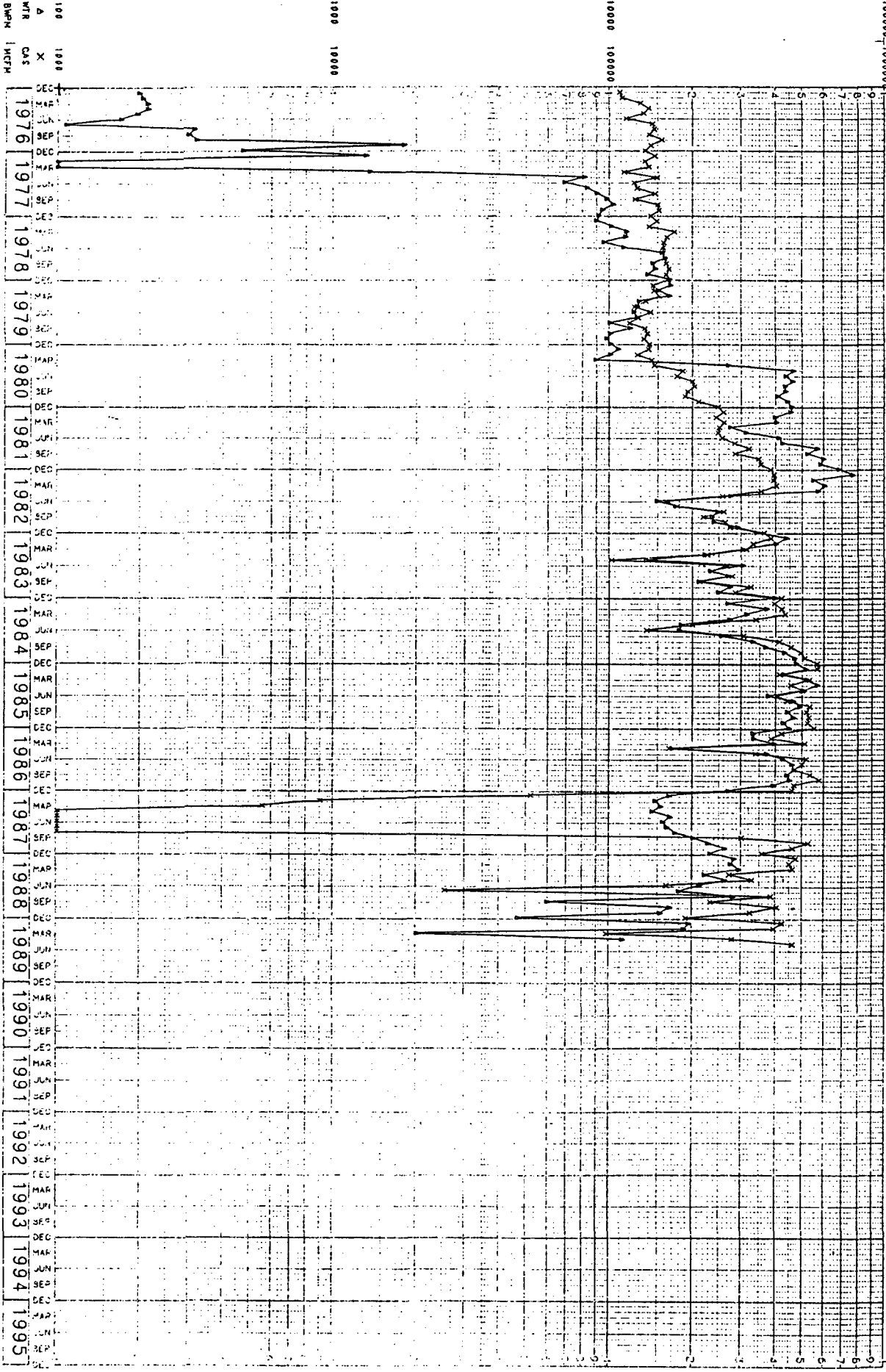
COUNTY SAN JUAN

STATE NM

FIELD GALLEGOS CANYON UNIT

LEASE SUMMARY OF 135 WELLS

DL



NO

NO

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W.R. HUMPHRIES
COMMISSIONER



Commissioner of Public Lands

SLO REF NO OG-701

P.O. BOX 1148
SANTA FE, NEW MEXICO 87504-1148

March 24, 1988

Amoco Production Co.
Attn: Mr. J. D. Hamrick
P. O. Box 800
Denver, Colorado 80201

Re: 1988 Plan of Development
Gallegos Canyon Unit
San Juan County, New Mexico

Gentlemen:

The Commissioner of Public Lands has this date approved your 1988 Plan of Development for the above captioned unit area.

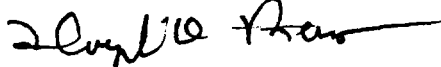
Our approval is subject to like approval by all other appropriate agencies.

Enclosed is an approved copy for your files.

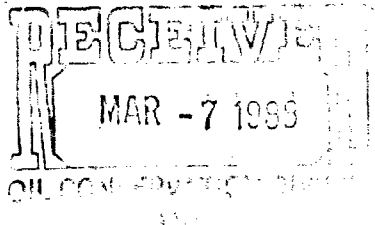
If we may be of further help please do not hesitate to call on us.

Very truly yours,

W. R. HUMPHRIES
COMMISSIONER OF PUBLIC LANDS

BY: 
FLOYD O. FRANDO, Director
Oil and Gas Division
(505) 827-5744

WRH/FOP/pm
encls.
cc: OCD
BLM



Amoco Production Company

Southern Division
1670 Broadway
P.O. Box 800
Denver, Colorado 80201
303-830-4040

J. D. Hamrick
Division Production Manager

February 29, 1988

Bureau of Land Management
P. O. Box 1449
Santa Fe, New Mexico 87501

Bureau of Land Management
P. O. Box 6770
Albuquerque, NM 87197-6770

New Mexico State Land Office
Oil and Gas Development
P. O. Box 1148
Santa Fe, NM 87501-1148

Oil Conservation Commission
State of New Mexico
P. O. Box 2088
Santa Fe, New Mexico 87501

Office of District Engineer
Bureau of Land Management
P. O. Box 959
Farmington, New Mexico 87401

File: MJR-139-416

1988 Plan of Development
Gallegos Canyon Unit -- All Formations

Amoco Production Company, Unit Operator of Gallegos Canyon Unit (GCU), submits for your consideration and approval the following Plan of Development for the year 1988

1988 Plan of Development

Dakota Formation

Amoco currently has no plans to drill any Dakota wells in the Gallegos Canyon Unit.

Gallup Formation

Amoco proposes the drilling of one (1) Gallup well and the recompletion of two (2) non-productive Dakota wells as tabulated below.

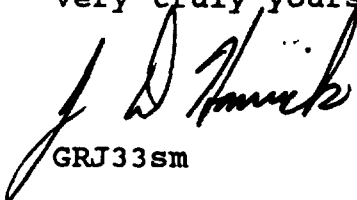
<u>Well Name</u>	<u>Location</u>	<u>Remarks</u>
GCU 188G	SE/4 Section 30-T29N-R12W	New Drill
GCU 183R	NE/4 Section 9-T27N-R12W	Recompletion
GCU 158	NW/4 Section 36-T28N-R13W	Recompletion

February 29, 1988
File: MJR-139-416
Page 2

Pictured Cliffs and Fruitland Formations

Amoco submits the attached Plan of Development for the Pictured Cliffs (PC) and Fruitland Formations on behalf of BHP Petroleum (Americas) Inc., sub-operator of these formations.

Very truly yours,

A handwritten signature in cursive script, appearing to read "J. D. Smith". The signature is written in dark ink and is positioned above the typed name "GRJ33sm".

GRJ33sm

Attachments

Bureau of Land Management
P. O. Box 1449
Santa Fe, New Mexico 87501

Bureau of Land Management
P. O. Box 6770
Albuquerque, NM 87197-6770

New Mexico State Land Office
Oil and Gas Development
P. O. Box 1148
Santa Fe, NM 87501-1148

Oil Conservation Commission
State of New Mexico
P. O. Box 2088
Santa Fe, NM 87501

Office of District Engineer
Bureau of Land Management
P. O. Box 959
Farmington, NM 87401

RE: 1988 Plan of Development
Gallegos Canyon Unit
Pictured Cliffs, Farmington and Fruitland Formations
San Juan County, New Mexico

Gentlemen:

Amoco Production Company, as Operator of the Gallegos Canyon Unit, on behalf of BHP Petroleum (Americas), Inc., the Sub-Operator of certain unit lands, proposes a Plan of Development for the captioned formations as follows.

1987 Activity

No development drilling was undertaken during 1987 in the subject unit area.

Total cumulative and 1987 production is as follows:

<u>Formation</u>	<u>1987 Production</u> <u>11/1/87, MMcf</u>	<u>Cum. Production</u> <u>11/1/87, MMCF</u>
Pictured Cliffs	897.363	79,536.042
Fruitland	106.280*	1,669.076*
Farmington	4.205	51.308

*Note that this production is from the Fruitland Formation wells operated by BHP and does not include the production from the initial Fruitland PA operated by Amoco.

1988 Plan of Development

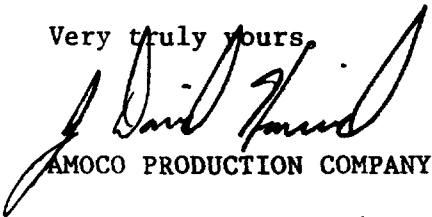
BHP intends to drill six (6) Pictured Cliffs wells and one (1) Fruitland well as shown on the attached map and tabulated below.

<u>Well</u>	<u>Location</u>	<u>Formation</u>
362	NWNW Sec. 26, T29N, R13W	Pictured Cliffs
363	NWNE Sec. 26, T29N, R13W	Pictured Cliffs
364	NWNW Sec. 25, T29N, R13W	Pictured Cliffs
365	SESE Sec. 25, T29N, R13W	Pictured Cliffs
366	SWNW Sec. 29, T29N, R12W	Fruitland
367	SENE Sec. 31, T29N, R12W	Pictured Cliffs
368	NENW Sec. 26, T28N, R12W	Pictured Cliffs

Drilling will commence early in 1988 with the entire program to be completed by May. These locations are limited to the lands which BHP Sub-Operates and do not include any wells which would require submittal by Amoco to the unit working interest owners.

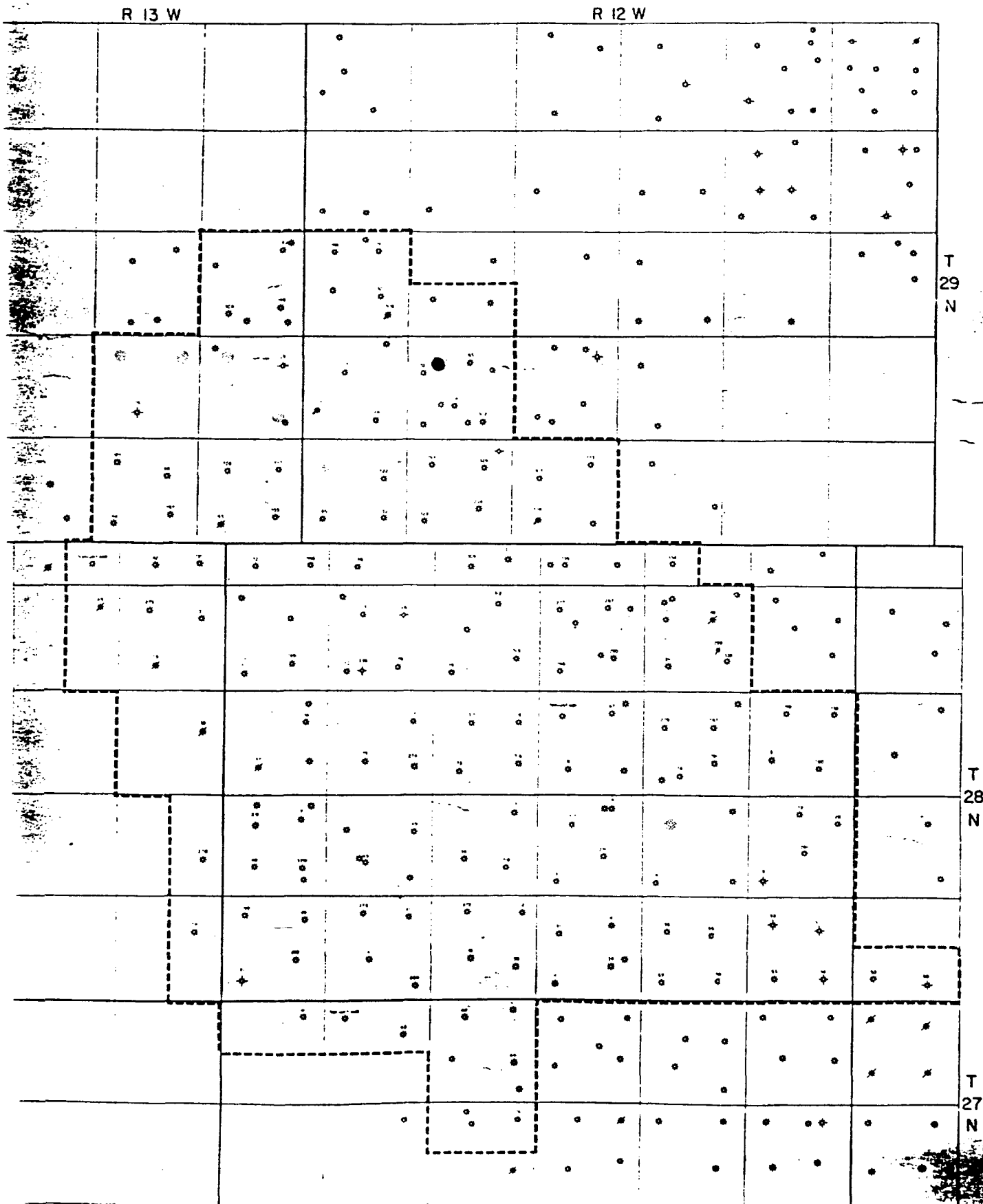
We respectfully submit this Plan of Development and request your approval of same. Please provide notice to both Amoco and BHP upon your approval of the plan.

Very truly yours,



AMOCO PRODUCTION COMPANY

cc: BHP Petroleum (Americas) Inc.



○ 1988 Pictured Cliffs Locations

● 1988 Fruitland Location





United States Department of the Interior

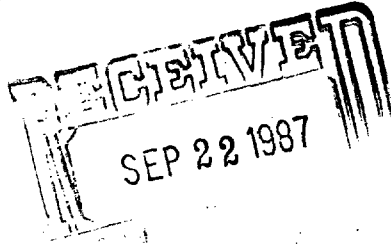
BUREAU OF LAND MANAGEMENT
ALBUQUERQUE DISTRICT OFFICE

435 Montano N.E.
Albuquerque, New Mexico 87107



IN REPLY REFER TO:

Gallegos Canyon (POD)
3180 (015)



SEP 18 1987

AMOCO PRODUCTION COMPANY
Attention: D. G. Wight
PO Box 800
Denver, CO 80201

Gentlemen:

One approved copy of your 1987 Plan of Development for the Gallegos Canyon Unit area, San Juan County, New Mexico is enclosed. Such plan, proposing no development in 1987 is approved on this date subject to like approval by the appropriate officials of the State of New Mexico.

If you have any questions, please contact Shirley Bryant at the above address or telephone (505) 761-4503.

Sincerely,

For District Manager

Enclosure

cc:

✓ NMOCD, Santa Fe w/o enclosure
Comm. of Pub. Lands, Santa Fe w/o enclosure

State of New Mexico

#247



JIM BACA
COMMISSIONER

Commissioner of Public Lands

P.O. BOX 1148
SANTA FE, NEW MEXICO 87504-1148

June 19, 1986

Amoco Production Company
Attention: Mr. R. J. Criswell
P. O. Box 800
Denver, Colorado 80201

Re: 1986 Plan of Development and
Operation Gallegos Canyon Unit -
Dakota and Gallup Formations
San Juan County, New Mexico

Gentlemen:

The Commissioner of Public Lands has this date approved your 1986 Plan of Development for the Gallegos Canyon Unit Area, Dakota and Gallup formations, San Juan County, New Mexico. Such plan calls for the drilling of no wells.

Our approval is subject to like approval by the New Mexico Oil Conservation Division and the Bureau of Land Management.

Enclosed is an approved copy for your files.

If we may be of further help please do not hesitate to call on us.

Very truly yours,

JIM BACA
COMMISSIONER OF PUBLIC LANDS

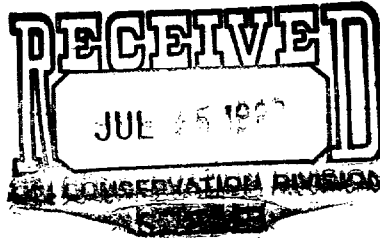
BY: *Floyd O. Prando*
FLOYD O. PRANDO, Director
Oil and Gas Division
(505) 827-5744

JB/FOP/pm
encls.

cc: OCD-Santa Fe, New Mexico
BLM-Albuquerque, New Mexico Attn: Fluids Branch

Bureau of Land Management
Albuquerque District Office
Minerals Division
P.O. Box 6770
Albuquerque, NM 87197-6770

Gallegos Canyon
Unit POD
3180 (015)



Amoco Production Company
R.J. Criswell
P.O. Box 800
Denver, CO 80201

Gentlemen:

One approved copy of your 1986 Plan of Development for the Gallegos Canyon Unit area, San Juan County, New Mexico is enclosed. Such plan, proposing no drilling in 1986, is approved this date subject to like approval by the appropriate officials of the State of New Mexico.

If you have any questions, please contact Shirley Bryant at the above address or telephone (505) 766-2841.

Sincerely,

(Orig. Signed) - Sid Vogelpohl

For District Manager

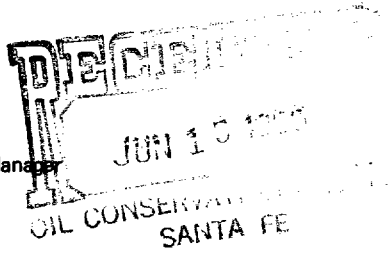
Enclosure(s)

cc:
Micrographics 943B-1
Fluids Section FRAN
✓ NMOCD, Santa Fe
Comm. of Pub. Lands, Santa Fe
O&G Chron

015:SBryant:klm:7-10-86:2065M



R. J. Criswell
Division Production Manager



Amoco Production Company

Denver Region
1670 Broadway
P.O. Box 800
Denver, Colorado 80201
303-830-4040

June 5, 1986

Bureau of Land Management
P. O. Box 1449
Santa Fe, NM 87501

Bureau of Land Management
P. O. Box 6770
Albuquerque, NM 87197-6770

New Mexico State Land Office
Oil and Gas Development
P. O. Box 1148
Santa Fe, NM 87501-1148

Oil Conservation Commission
State of New Mexico
P. O. Box 2088
Santa Fe, NM 87501

Office of District Engineer
Bureau of Land Management
P. O. Box 959
Farmington, NM 87401

File: JTM-338-416

Gentlemen:

1986 Plan of Development and Operation
Gallegos Canyon Unit - Dakota and Gallup Formations
San Juan County, New Mexico

Amoco Production Company, Unit Operator of the Gallegos Canyon Unit (GCU), submits for your consideration and approval the following Plan of Development for the year 1986.

Dakota Formation

In 1985, Amoco drilled and completed 37 wells in the Dakota formation. To date in 1986, three wells have been drilled and completed in the Dakota. All three wells were carryover wells from the 1985 P.O.D. There are still 13 remaining Dakota drilling locations within the Unit which to date have not been drilled. Amoco has no plans to drill these remaining wells during 1986.

Bureau of Land Management, et al.
June 5, 1986
Page 2

Gallup Formation

In 1985, Amoco completed one well, the GCU #214E, in the Gallup formation. Amoco has drilled 27 wells with the intent of dual completing the wells in both the Gallup and Dakota formations. However, to date, 26 of the wells have not been completed in the Gallup. Amoco has no plans to complete these wells during 1986.

Plan of Development - 1986

Amoco currently has no plans to drill or complete any wells during 1986 other than the three Dakota wells mentioned above. There are two main reasons why Amoco is not continuing the Dakota infill drilling program and why we are deferring Gallup completions until after 1986. One, decreased product prices for both oil and gas have reduced revenues and as a result, capital needed to fund such projects has also been reduced. Two, pipeline companies have drastically reduced their purchases of natural gas from the San Juan Basin. Amoco will submit a supplemental P.O.D. if our plans change.

Very truly yours,

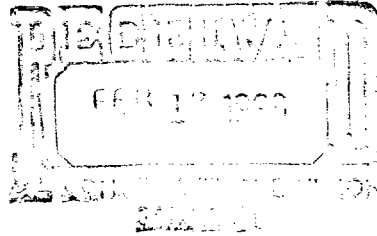
R. J. Criswell

BAM/gjw

LTR000



R. J. Criswell
Division Production Manager



Amoco Production Company

Denver Region
1870 Broadway
P.O. Box 800
Denver, Colorado 80201
303-830-4040

February 13, 1986

#247

Bureau of Land Management
Albuquerque District Office
505 Marquette, NW
P. O. Box 6779
Albuquerque, New Mexico 87197-6770

State of New Mexico
Energy and Minerals Department
Oil Conservation Division
P. O. Box 2088
State Land Office Building
Santa Fe, New Mexico 87501

New Mexico State Land Office
Commissioner of Public Lands
P. O. Box 1148
Santa Fe, New Mexico 87501

File: JTM-146-416

Fruitland Participating Area Applications
Revision for #341, #344, #346 and #347 Wells
New Application for #351 and #356 Through #361 Wells
Gallegos Canyon Unit
San Juan County, New Mexico

On behalf of the Sub-Operator, BHP Petroleum (Americas) Inc. (formerly Energy Reserves Group, Inc.), Amoco Production Company, as Unit Operator, requests your approval in accordance with Paragraph 10 of the Unit Agreement of the selection of lands indicated on the attached land map, Exhibit "1", to constitute the First Enlargement to the Fruitland Participating Area "B"; the Second and Third Enlargements to the Fruitland Participating Area "C"; and the Initial and First Enlargement to the Fruitland Participating Area "E". These changes to the unit participating acreage are based upon the completion of unit well numbers 341, 344, 346, 347, 351 and 356 through 361. The location and completion date of each well are as set forth in the attached Exhibit "2".

Bureau of Land Management
State of New Mexico Energy and Minerals Department
New Mexico State Land Office
Page 2

The schedules attached as Exhibits "3", "4" and "5" describe the lands within each proposed area or area enlargement. Also reflected is each lease within each area and its percentage of the total participating area. Please note that we have attached as Exhibit "6" the engineering data for the determination that all wells are proven productive of unitized substances in paying quantities. Our application involves only one undrilled tract, and reference is made to our Fruitland Gross Sand Isopach map attached as Exhibit "7" for justification as to the inclusion of this tract. Further review of the isopach mapping clarifies the establishment of a Fruitland "E" Participating Area, since data at this time supports a separate pool for the wells located therein. Any questions you might have concerning the mapping can be directed to Melody Ulen of the BHP Denver office at (303) 292-3323.

The effective dates are proposed as follows:

<u>Participating Area</u>	<u>Effective Date</u>
First Enlargement to Fruitland "B"	8/1/85
Second Enlargement to Fruitland "C"	1/1/85
Third Enlargement to Fruitland "C"	9/1/85
Initial Fruitland "E"	3/1/85
First Enlargement to Fruitland "E"	8/1/85

We note that the effective dates on the Fruitland "C" area have been chosen based upon well completion dates, drilling well data and consideration of first sales. (Reference is made to Exhibit "2"). Given the close time frame in which some wells were completed and given that the working interest owners have a constant pooled interest in the area, we have attempted to include as many known productive tracts in one enlargement as possible. For instance, since there have been no sales from the #341 Well in the NW $\frac{1}{4}$ of Section 16-T28N-R12W, we have waited to include the tract within the third enlargement. Similarly, we feel that mapping and well data justifies the inclusion of the tracts associated with well numbers 351, 359, 360 and 361 all at once. Should you have any questions concerning the dates chosen and the reasons thereof, please contact Christine Hinton of BHP Petroleum at (303) 292-3323.

Bureau of Land Management
State of New Mexico Energy and Minerals Department
New Mexico State Land Office
Page 3

Your approval of our application as submitted is hereby requested. We enclose three (3) sets of the application to the BLM and request that both Amoco and BHP Petroleum (Americas) Inc. be notified upon the approval of the application.

Sincerely,

AMOCO PRODUCTION COMPANY

Original Signed
R. J. Criswell By
J. T. McKenzie, Jr.

By: R. J. Criswell
Western Division Production Manager

CLH:me

cc: BHP Petroleum (Americas) Inc.

EXHIBIT "2"

Fruitland Participating Area Enlargement Application

<u>WELL NUMBER</u>	<u>LOCATION</u>	<u>COMPLETION DATE</u>	<u>FIRST SALES</u>
#341	T28N, R12W Sec. 16: SW $\frac{1}{4}$ NW $\frac{1}{4}$	4/11/85	No sales to date.
#344	T29N, R12W Sec. 29: NE $\frac{1}{4}$ SW $\frac{1}{4}$	2/19/85	5/6/85
#346	T28N, R12W Sec. 15: SW $\frac{1}{4}$ NW $\frac{1}{4}$	2/18/85	5/3/85
#347	T28N, R12W Sec. 15: NW $\frac{1}{4}$ SE $\frac{1}{4}$	12/27/84	1/17/85
#351	T28N, R12W Sec. 10: SE $\frac{1}{4}$ SE $\frac{1}{4}$	9/26/85	12/3/85
#356	T29N, R12W Sec. 19: SW $\frac{1}{4}$ NE $\frac{1}{4}$	8/1/85	No sales to date.
#357	T29N, R12W Sec. 29: NE $\frac{1}{4}$ NE $\frac{1}{4}$	8/1/85	9/25/85
#358	T29N, R12W Sec. 29: SW $\frac{1}{4}$ SE $\frac{1}{4}$	8/1/85	No sales to date.
#359	T28N, R12W Sec. 10: SW $\frac{1}{4}$ SW $\frac{1}{4}$	8/21/85	11/18/85
#360	T28N, R12W Sec. 14: NW $\frac{1}{4}$ NW $\frac{1}{4}$	8/2/85	10/24/85
#361	T28N, R12W Sec. 15: NW $\frac{1}{4}$ NE $\frac{1}{4}$	8/8/85	11/27/85

EXHIBIT "3"

Fruitland Participating Area "B"
 Through the First Enlargement Effective 8/01/85

<u>UNIT TRACT NO.</u>	<u>LEASE NAME</u>	<u>DESCRIPTION</u>	<u>PARTICIPATING ACRES</u>	<u>TRACT ALLOCATION</u>
22	Hodges, L. B.	T 29N, R12W Sec. 19: NW $\frac{1}{4}$ NE $\frac{1}{4}$	40.00	12.50%
34	SF-080723	T29N, R12W Sec. 19: NE $\frac{1}{4}$ SE $\frac{1}{4}$, E $\frac{1}{2}$ NE $\frac{1}{4}$	120.00	37.50%
122	Whitenack, Mamie	T29N, R12W Sec. 19: W $\frac{1}{2}$ SE $\frac{1}{4}$, SW $\frac{1}{4}$ NE $\frac{1}{4}$	120.00	37.50%
117	Chapman, Goldie A. and Pearl	T29N, R12W Sec. 19: SE $\frac{1}{4}$ SE $\frac{1}{4}$	40.00	12.50%
<u>TOTALS</u>			<u>320.00</u>	<u>100.00%</u>

EXHIBIT "4"

Fruitland Participating Area "C" Lands Through the Second Enlargement
Effective 1/01/85 through 8/31/85

<u>UNIT TRACT NO.</u>	<u>LEASE NAME/NUMBER</u>	<u>DESCRIPTION</u>	<u>PARTICIPATING ACRES</u>	<u>TRACT ALLOCATION</u>
9	SF-078106	T28N, R12W Sec. 15: NW $\frac{1}{4}$, SE $\frac{1}{4}$	320.00	32.23986%
10	SF-078109	T28N, R12W Sec. 9: W $\frac{1}{2}$ (Lots 3, 4, S $\frac{1}{2}$ SW $\frac{1}{4}$)	136.32	13.73419%
37	Nav-8474	T28N, R12W Sec. 9: E $\frac{1}{2}$ (Lots 1, 2, S $\frac{1}{2}$ SE $\frac{1}{4}$) Sec. 16: NE $\frac{1}{4}$	296.24	29.84606%
45	Nav-8486	T29N, R12W Sec. 33: SW $\frac{1}{4}$	160.00	16.11993%
69	E-2754	T29N, R12W Sec. 32: SW $\frac{1}{4}$ SE $\frac{1}{4}$	40.00	04.02998%
71	B-10405	T29N, R12W Sec. 32: SE $\frac{1}{4}$ SE $\frac{1}{4}$	40.00	04.02998%
Total			992.56	100.0000%

Fruitland Participating Area "C" Lands Through Third Enlargement
Effective 9/01/85

<u>UNIT TRACT NO.</u>	<u>LEASE NAME/NUMBER</u>	<u>DESCRIPTION</u>	<u>PARTICIPATING ACRES</u>	<u>TRACT ALLOCATION</u>
9	SF-078106	T28N, R12W Sec. 15: NW $\frac{1}{4}$, E $\frac{1}{2}$	480.00	27.525%
10	SF-078109	T28N, R12W Sec. 9: W $\frac{1}{2}$ (Lots 3, 4, S $\frac{1}{2}$ SW $\frac{1}{4}$) Sec. 10: All (Lots 1,2,3,4, S $\frac{1}{2}$ SW $\frac{1}{4}$, S $\frac{1}{2}$ SE $\frac{1}{4}$)	407.64	23.375%
20	SF-078905	T28N, R12W Sec. 14: NW $\frac{1}{4}$	160.00	09.175%
37	Nav-8474	T28N, R12W Sec. 9: E $\frac{1}{2}$ (Lots 1, 2, S $\frac{1}{2}$ SE $\frac{1}{4}$) Sec. 16: N $\frac{1}{2}$	456.24	26.162%
45	Nav-8486	T29N, R12W Sec. 33: SW $\frac{1}{4}$	160.00	09.175%
69	E-2754	T29N R12W Sec. 32: SW $\frac{1}{4}$ SE $\frac{1}{4}$	40.00	02.294%
71	B-10405 (27)	T29N R12W Sec. 32: SE $\frac{1}{4}$ SE $\frac{1}{4}$	40.00	02.294%
Total			1,743.88	100.000%

EXHIBIT "5"

Initial Fruitland Participating Area "E" Lands
Effective 3/01/85 thru 7/31/85

<u>UNIT TRACT NO.</u>	<u>LEASE NAME/NUMBER</u>	<u>DESCRIPTION</u>	<u>PARTICIPATING ACRES</u>	<u>TRACT ALLOCATION</u>
36	SF-080962	T29N, R12W Sec. 29: NE $\frac{1}{4}$ SW $\frac{1}{4}$	40.00	25.00%
113	Schneck, Phil & Alberta	T29N, R12W Sec. 29: W $\frac{1}{2}$ SW $\frac{1}{4}$, SE $\frac{1}{4}$ SW $\frac{1}{4}$	120.00	75.00%
	TOTAL		160.00	100.00%
Fruitland Participating Area "E" Lands Through First Enlargement Effective 8/01/85				
36	SF-080962	T29N, R12W Sec. 29: NE $\frac{1}{4}$ SW $\frac{1}{4}$, NE $\frac{1}{4}$ SE $\frac{1}{4}$	80.00	12.50%
113	Schenck, Phil & Alberta	T29N, R12W Sec. 29: W $\frac{1}{2}$ SW $\frac{1}{4}$, SE $\frac{1}{4}$ SW $\frac{1}{4}$	120.00	18.75%
124	Jacquez, A., et al	T29N, R12W Sec. 29: W $\frac{1}{2}$ SE $\frac{1}{4}$, SE $\frac{1}{4}$ SE $\frac{1}{4}$	120.00	18.75%
125	Lee, F. L., et al	T29N, R12W Sec. 29: NE $\frac{1}{4}$	160.00	25.00%
126	Goff, L. V., et al	T29N, R12W Sec. 29: NW $\frac{1}{4}$	160.00	25.00%
	TOTAL		640.00	100.00%

EXHIBIT "6"

SUMMARY

GALLEGOS CANYON UNIT #341
 SW NW SECTION 16 T28N-R12W
 SAN JUAN COUNTY, NEW MEXICO

The Gallegos Canyon Unit #341 was spudded on January 25, 1985, and drilled to a total depth of 1432' on January 27, 1985. 8 5/8" 20#/ft surface casing was set at 135' and cemented to the surface with 100 sx Class "B" cement, 4 1/2" 10.5#/ft production casing was set at 1432' and cemented to the surface with 250 sx 50-50 pozmix. The well was drilled through the Pictured Cliffs Formation.

LOGGING PROGRAM

Gamma Ray-Induction Electric-Compensated Density-Compensated Neutron logs were run to evaluate this well. Formations tops from these logs are:

Ojo Alamo - 65'
 Kirtland - 145'
 Fruitland - 902'
 Pictured Cliffs - 1328'

CORES AND DST'S

No cores were cut and no DST's were run on this well.

COMPLETION

Perforated the Pictured Cliffs Formation from 1334'-1354' with 16 shots. Broke down perfs with 1000 gals of 2% KCl water and ball sealers. Frac'd with 22,000 gals 70 Q foam w/30,000# 10-20 sand. Tested well. Produced 100+ BWID with no gas. Set a CIBP at 1326'. Dumped 6 sx of Class "B" onto CIBP. Perforated the Fruitland Formation at 1024'-1030', 1037'-1048', and 1051'-1058' with 2 JSPF. Broke down perfs with 1000 gals of 2% KCl water and ball sealers. Frac'd w/23,000 gals of 70 Q foam with 30,500# 10-20 sand. The well was tested 4-2-85 at a rate of 350 MCFD with a FTP of 90 psig.

CONCLUSION

Using the economic parameters outlined in the following tables, this well will payout in approximately 6 months. Therefore, it is concluded the Gallegos Canyon Unit #341 is productive in paying quantities according to the unit agreement and should be classified as a paying well.

GALLEGOS CANYON UNIT NO. 341
TABLE I - DATA AND ASSUMPTIONS
UNIT PAY ANALYSIS

1. Net pay - 19 ft.
2. Average Porosity - 21%
3. Average water saturation - 46.0%
4. Well spacing - 160 acres
5. Reservoir Temperature - 85°F
6. Measured Initial BHP - 475 psi
7. Line Pressure - 115 psig
8. Calculated Flowing BHP - 118 psi
9. Gas Price - \$3.54/mcf
10. Operating Costs - \$250/month
11. Taxes - 9.0%
12. Discount Rate - 12.0%
13. Royalty - 12.5%
14. Well Cost - \$68,800
15. Gas Gravity - 0.655
- *16. Stabilized Test Flow Rate - 175 MCFD
17. Calculated Stabilized Test Flowing BHP - 94 psi
18. n (assumed) - 0.85

* 50% of initial flow rate was used throughout this evaluation to account for the quick drop in production common to these wells.

GALLEGOS CANYON UNIT NO. #341
TABLE II-PRODUCTION AND RESERVES

POINT	STATIC BHP	2	$\Delta(P^2) \times 10^3$	Q, MCFD	0.8 Q, MCFD	Q, Avg MCFD	GIP MMCF	PROD. MMCF	Cum. Prod. MMCF	Days	TIME YRS	CUM
TEST	475	0.922	217.789	175								
1	475	0.922	211.701	170	136		496				0.6	0.6
2	450	0.923	188.576	157	126	131	469	27	27	203	0.6	1.9
3	400	0.931	146.076	126	101	113	414	56	82	492	1.3	3.6
4	350	0.940	108.576	98	78	90	358	55	137	616	1.7	5.8
5	300	0.948	76.076	70	56	67	305	54	191	800	2.2	8.8
6	250	0.957	48.576	50	40	48	251	53	244	1107	3.0	

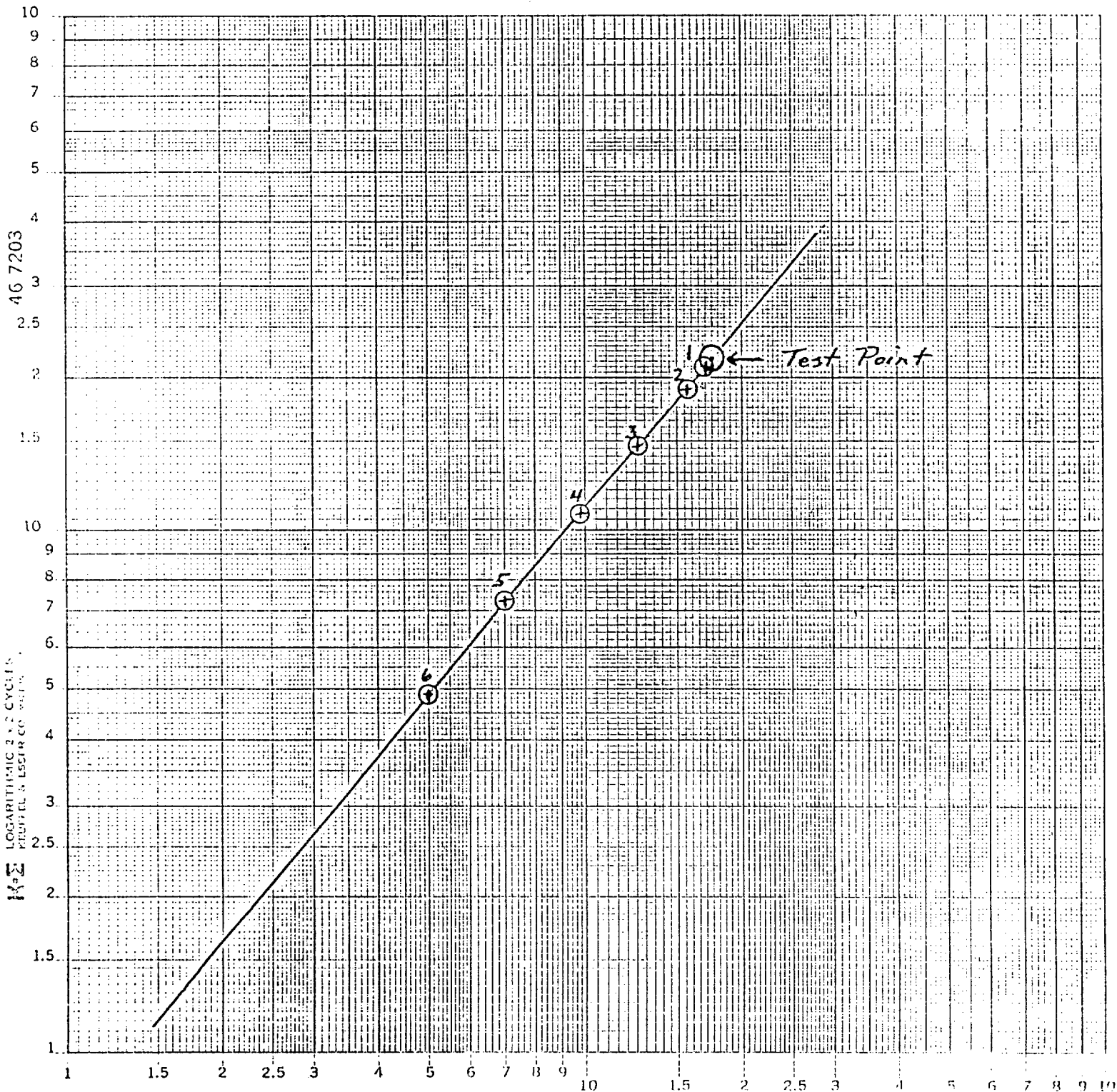
TABLE III -ECONOMICS

YEAR	AVG. PROD. RATE (MCFD)	YEARLY PROD. (MCF)	WORKING INTEREST				DISCOUNT FACTOR	DISCOUNT VALUE (\$)	W.I. COST PAYOUT
			YEARLY PROD. (MCF)	VALUE (\$)	LESS TAXES	LESS OPER. COST & PROFIT			
1	125.5	45,808	40,081	141,889	129,119	125,939	0.8926	112,413	43,613

\$68,800

Gallegos Canyon Unit #341

$\Delta(P^2)$ vs. Q

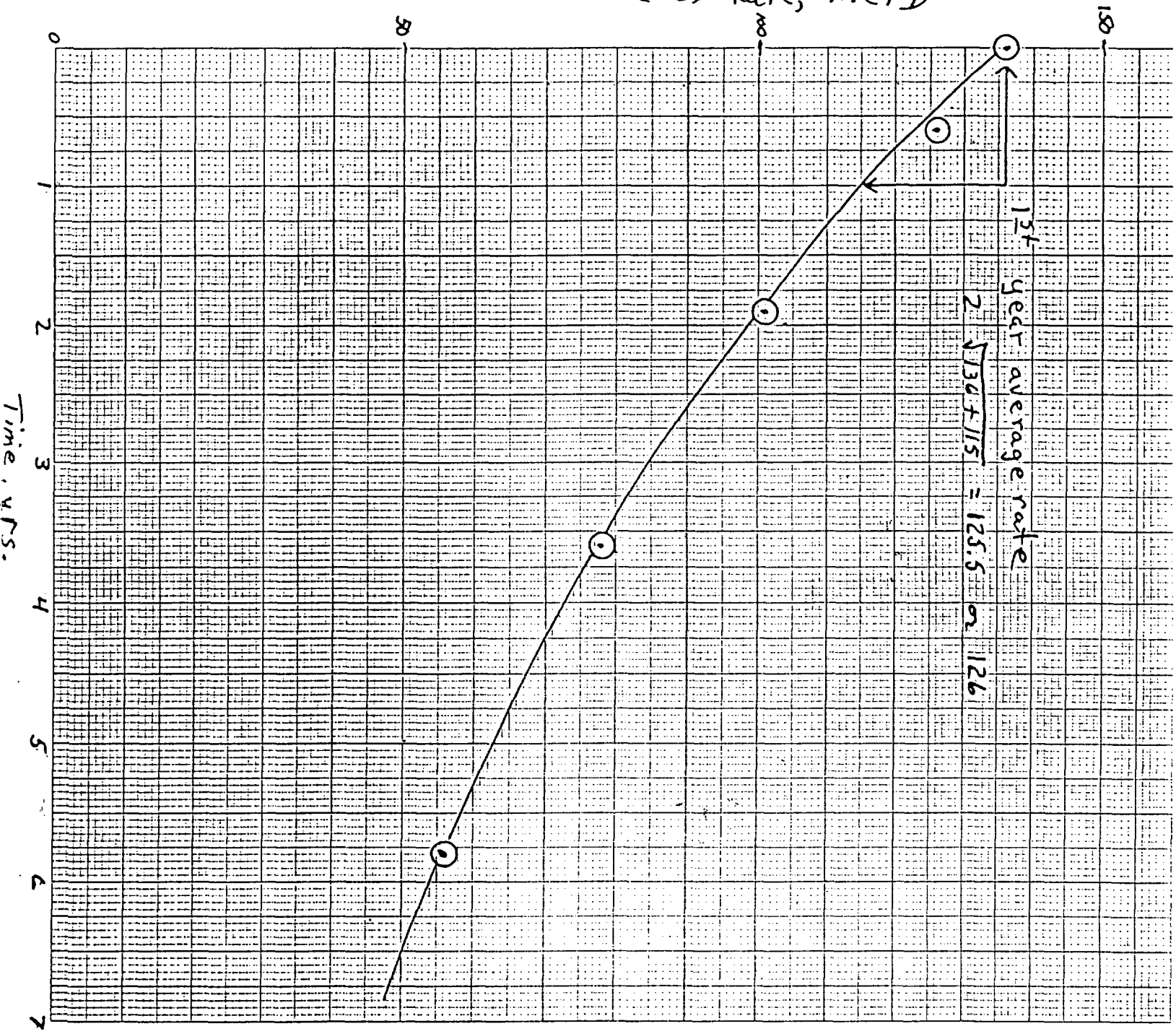


Q · X 10⁴, MCFD

K-E 10 X 10 TO 1/2 INCH 7 X 10 INCHES
KEUFFEL & ESSER CO. MADE IN U.S.A.

46 1320

(0.8) Rate, MCFD



SUMMARY

GALLEGOS CANYON UNIT #344
NE SW SECTION 29 T29N-R12W
SAN JUAN COUNTY, NEW MEXICO

The Gallegos Canyon Unit #344 was spudded on January 11, 1985, and drilled to a total depth of 1090' on January 13, 1985. 8 5/8" 20#/ft surface casing was set at 136' and cemented to the surface with 175 sx Class "B" cement, 4 1/2" 10.5#/ft production casing was set at 1090' and cemented to the surface with 175 sx 50-50 pozmix. The well was drilled through the Fruitland Formation.

LOGGING PROGRAM

Gamma Ray-Induction Electric- Compensated Density-Compensated Neutron logs were run to evaluate this well. Formations tops from these logs are:

Kirtland - 65'
Fruitland - 837'

CORES AND DST's

No cores were cut and no DST's were run on this well.

COMPLETION

Perforated the Fruitland Formation at 1009'-10', 1000'-05', 997'-99' and 987'-89' with 1 JSPF. Broke down perms with 1000 gals 2% KCL water and ball sealers. Frac'd with 28,500 gals 70 Q Foam with 21,000 pounds 10-20 sand. The well was tested 2-12-85 at a rate of 721 MCFD with a FTP of 200 psig.

CONCLUSION

Using the economic parameters outlined in the following tables, this well will payout in less than two months. Therefore, it is concluded the Gallegos Canyon Unit #344 well is productive in paying quantities according to the unit agreement and should be classified as a paying well.

GALLEGOS CANYON UNIT NO. 344
TABLE I - DATA AND ASSUMPTIONS
UNIT PAY ANALYSIS

1. Net pay - 16 ft.
2. Average Porosity - 18.0%
3. Average waters saturation - 35.0%
4. Well spacing - 160 acres
5. Reservoir Temperature - 85°F
- *6. Measured Initial BHP - 429 psi
7. Line Pressure - 115 psig
8. Calculated Flowing BHP - 118 psi
9. Gas Price - \$3.54/mcf
10. Operating Costs - \$250/month
11. Taxes - 9.0%
12. Discount Rate - 12.0%
13. Royalty - 12.5%
14. Well Cost - \$49,400
15. Gas Gravity - 0.655
- *16. Stabilized Test Flow Rate - 360 MCFD
17. Calculated Stabilized Test Flowing BHP - 206 psi
18. n (assumed) - 0.85

* 50% of initial flow rate was used throughout this evaluation to account for the quick drop in production common to these wells.

GALLIEGOS CANYON UNIT NO. # 344
TABLE II--PRODUCTION AND RESERVES

POINT	STATIC BHP	Z	$\Delta(P^2) \times 10^3$	Q, MCFD	0.8 Q, MCFD		Q, Avg MCFD	GIP MMCF	PROD. MMCF	Cum. Prod. MMCF	TIME	
					MCFD	MCFD					Days	YRS
TEST	429	0.930	141.605	360								
1	429	0.930	170.117	420	336		393.3					
2	400	0.931	146.076	370	296	316	366.3	27.0	27.0	85	0.23	0.23
3	350	0.940	108.576	285	228	262	317.5	48.9	75.8	186	0.51	0.74
4	300	0.948	76.076	214	171	200	269.8	47.6	123.5	239	0.65	1.40
5	250	0.957	48.576	144	115	143	227.7	47.1	170.6	329	0.90	2.30
6	200	0.966	26.076	86	69	92	176.5	46.2	216.8	502	1.38	3.68

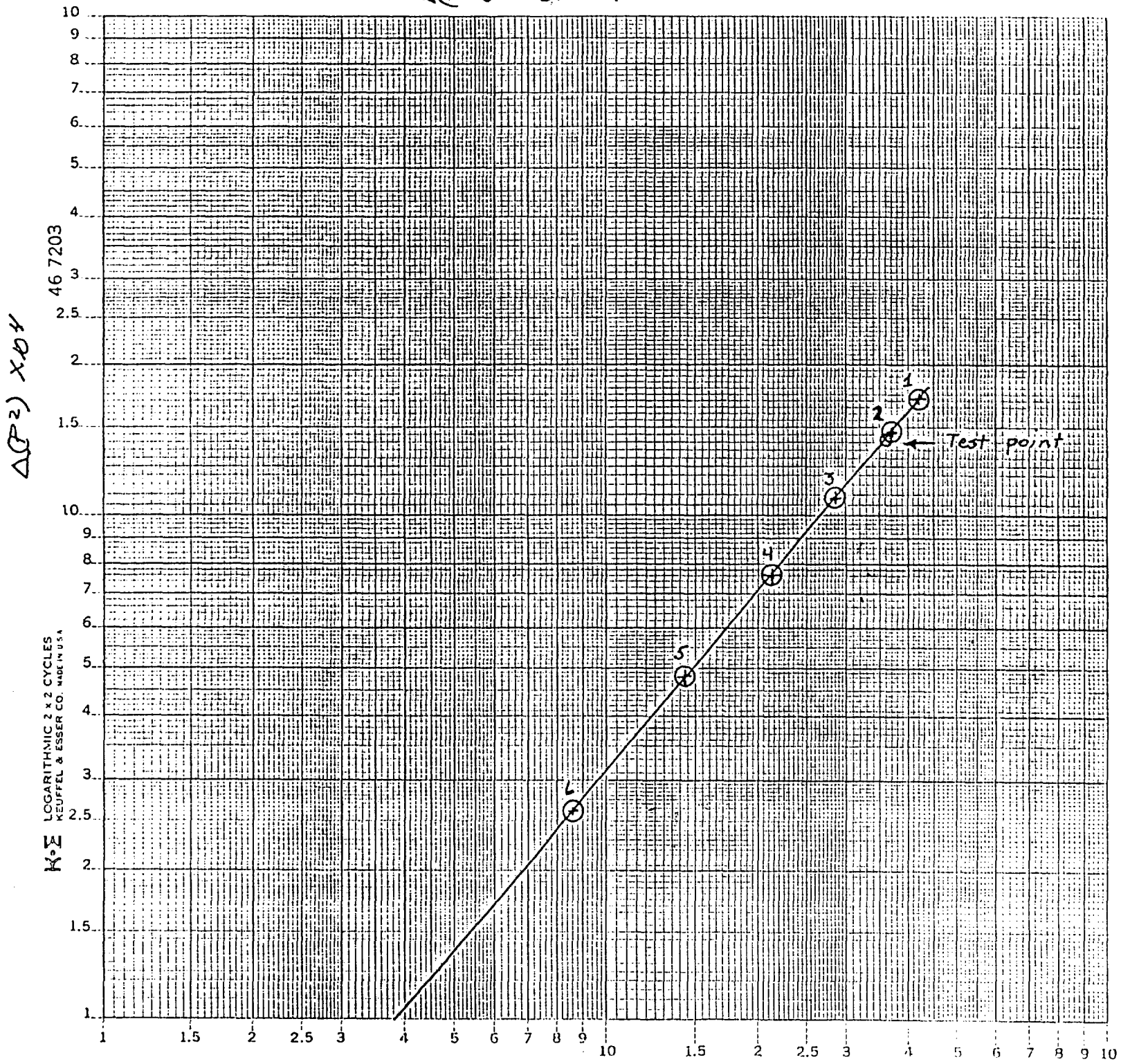
TABLE III -ECONOMICS

YEAR	AVG. PROD. RATE (MCFD)	YEARLY PROD. (MCF)	WORKING INTEREST				DISCOUNT FACTOR	DISCOUNT VALUE (\$)	W.I. COST PAYOUT
			YEARLY PROD. (MCF)	VALUE (\$)	LESS TAXES	LESS OPER. COST & PROFIT			
1	270	98,550	86,231	305,258	277,785	274,605	0.8926	245,112	195,712

\$49,400

Gallegos Canyon Unit #344

$\Delta(P^2)$ vs. Q



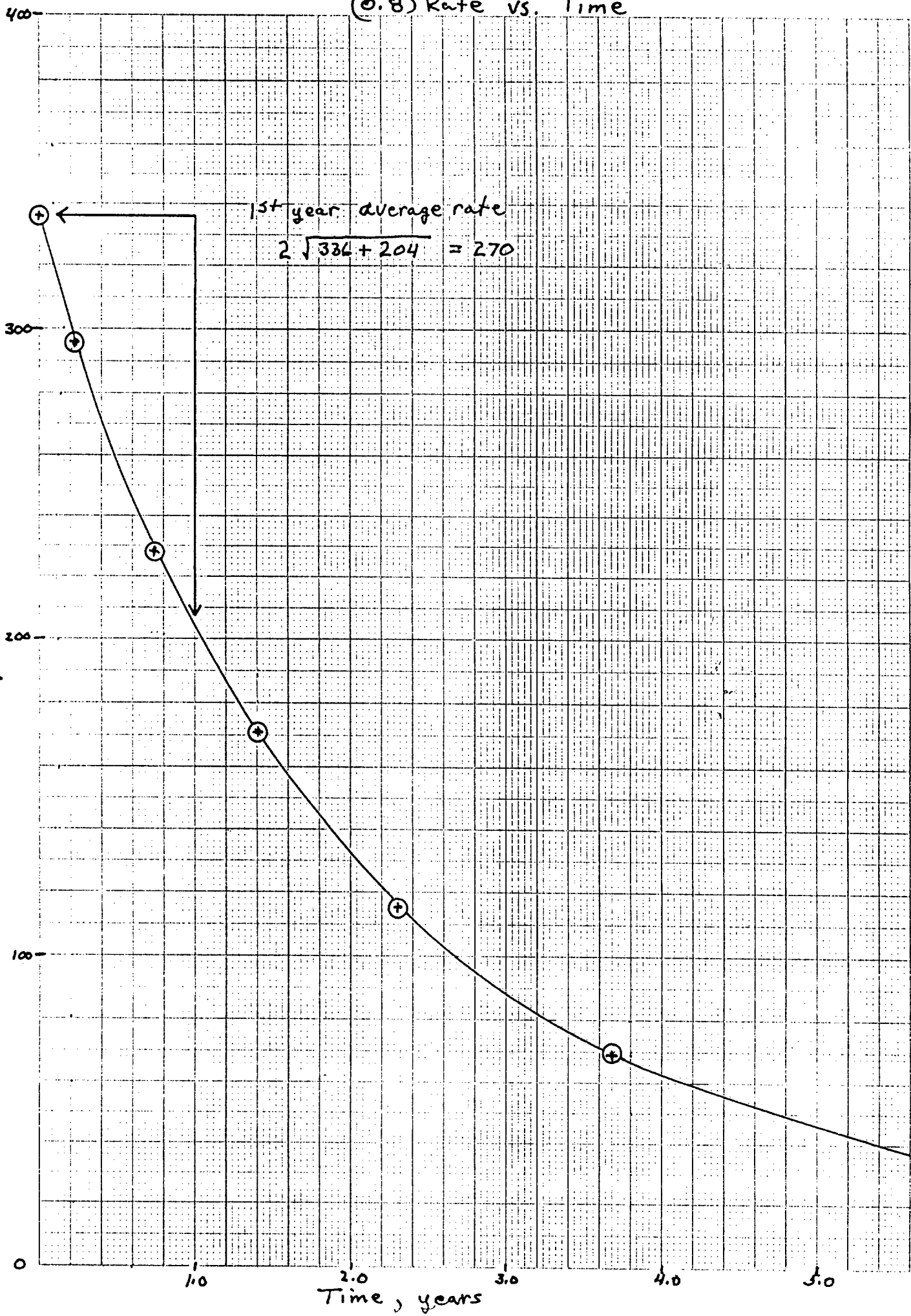
$Q \times 10^1, \text{mCFD}$

Gallegos Canyon Unit No. 344
 (0.8) Rate vs. Time

46 1320

K&E 10 X 10 TO 1/4 INCH
 KEUFFEL & ESSER CO. MADE IN U.S.A.

(0.8) Rate, mCFD



SUMMARY

GALLEGOS CANYON UNIT #346
SW NW SECTION 15 T28N-R12W
SAN JUAN COUNTY, NEW MEXICO

The Gallegos Canyon Unit #346 was spudded on January 8, 1985, and drilled to a total depth of 1178' on January 10, 1985. 8 5/8" 20#/ft surface casing was set at 144' and cemented to the surface with 90 sx Class "B" cement, 4 1/2" 10.5#/ft production casing was set at 1175' and cemented to the surface with 175 sx 50-50 pozmix. The well was drilled through the Fruitland Formation.

LOGGING PROGRAM

Gamma Ray-Induction Electric- Compensated Density-Compensated Neutron logs were run to evaluate this well. Formations tops from these logs are:

Ojo Alamo - 129'
Kirtland - 216'
Fruitland - 964'

CORES AND DST's

No cores were cut and no DST's were run on this well.

COMPLETION

Perforated the Fruitland Formation at 1113'-17', 1108'-10', and 1100'-05' with 1 JSPF. Broke down perfs with 1000 gals 2% KCL water and ball sealers. Frac'd with 22,000 gals 70 Q Foam with 30,000 pounds 10-20 sand. The well was tested 2-11-85 at a rate of 415 MCFD with a FTP of 110 psig.

CONCLUSION

Using the economic parameters outlined in the following tables, this well will payout in less than four months. Therefore, it is concluded the Gallegos Canyon Unit #346 well is productive in paying quantities according to the unit agreement and should be classified as a paying well.

GALLEGOS CANYON UNIT NO. 346
TABLE I - DATA AND ASSUMPTIONS
UNIT PAY ANALYSIS

1. Net pay - 19 ft.
2. Average Porosity - 20.0%
3. Average waters saturation - 42.6%
4. Well spacing - 160 acres
5. Reservoir Temperature - 85°F
- *6. Measured Initial BHP - 495 psi
7. Line Pressure - 115 psig
8. Calculated Flowing BHP - 118 psi
9. Gas Price - \$3.54/mcf
10. Operating Costs - \$250/month
11. Taxes - 9.0%
12. Discount Rate - 12.0%
13. Royalty - 12.5%
14. Well Cost - \$47,000
15. Gas Gravity - 0.655
- *16. Stabilized Test Flow Rate - 208 MCFD
17. Calculated Stabilized Test Flowing BHP - 114 psi
18. n (assumed) - 0.85

* 50% of initial flow rate was used throughout this evaluation to account for the quick drop in production common to these wells.

GALLEGOS CANYON UNIT NO. #346
TABLE II-PRODUCTION AND RESERVES

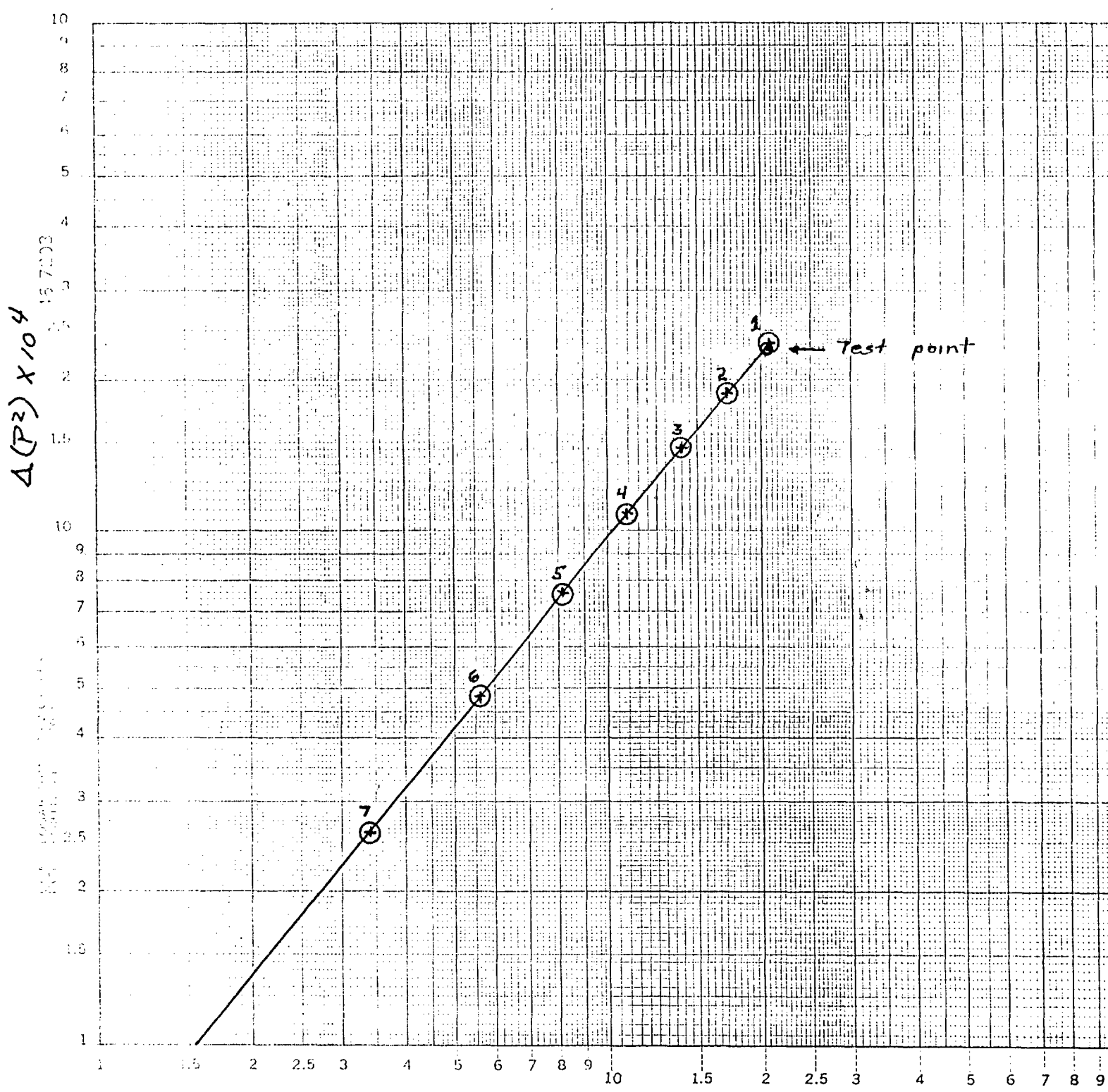
POINT	STATIC BHP	Z	$\Delta(P^2) \times 10^3$	Q, MCFD	0.8 Q, MCFD		Q, Avg MCFD	GIP MMCF	PROD. MMCF	Cum. Prod. MMCF	TIME	
					MCFD	MCFD					Days	YRS
TEST	495	0.920	232.029	208								
1	495	0.920	231.101	205	164			535				
2	450	0.923	188.576	172	138			484	50	50	333	0.9
3	400	0.931	146.076	140	112			427	58	108	461	1.3
4	350	0.940	108.565	109	87			370	57	165	572	1.6
5	300	0.948	76.076	81	65			314	56	220	731	2.0
6	250	0.957	48.576	56	45			260	55	275	1001	2.7
7	200	0.966	26.076	34	27			206	54	329	1496	4.1

TABLE III -ECONOMICS

YEAR	AVG. PROD. RATE (MCFD)	YEARLY PROD. (MCF)	WORKING INTEREST				DISCOUNT FACTOR	DISCOUNT VALUE(\$)	\$47,000 W.I. COST PAYOUT
			YEARLY PROD. (MCF)	VALUE (\$)	LESS TAXES	LESS OPER. COST & PROFIT			
1	151	55,115	48,226	170,719	155,354	152,174	0.8926	135,831	88,831

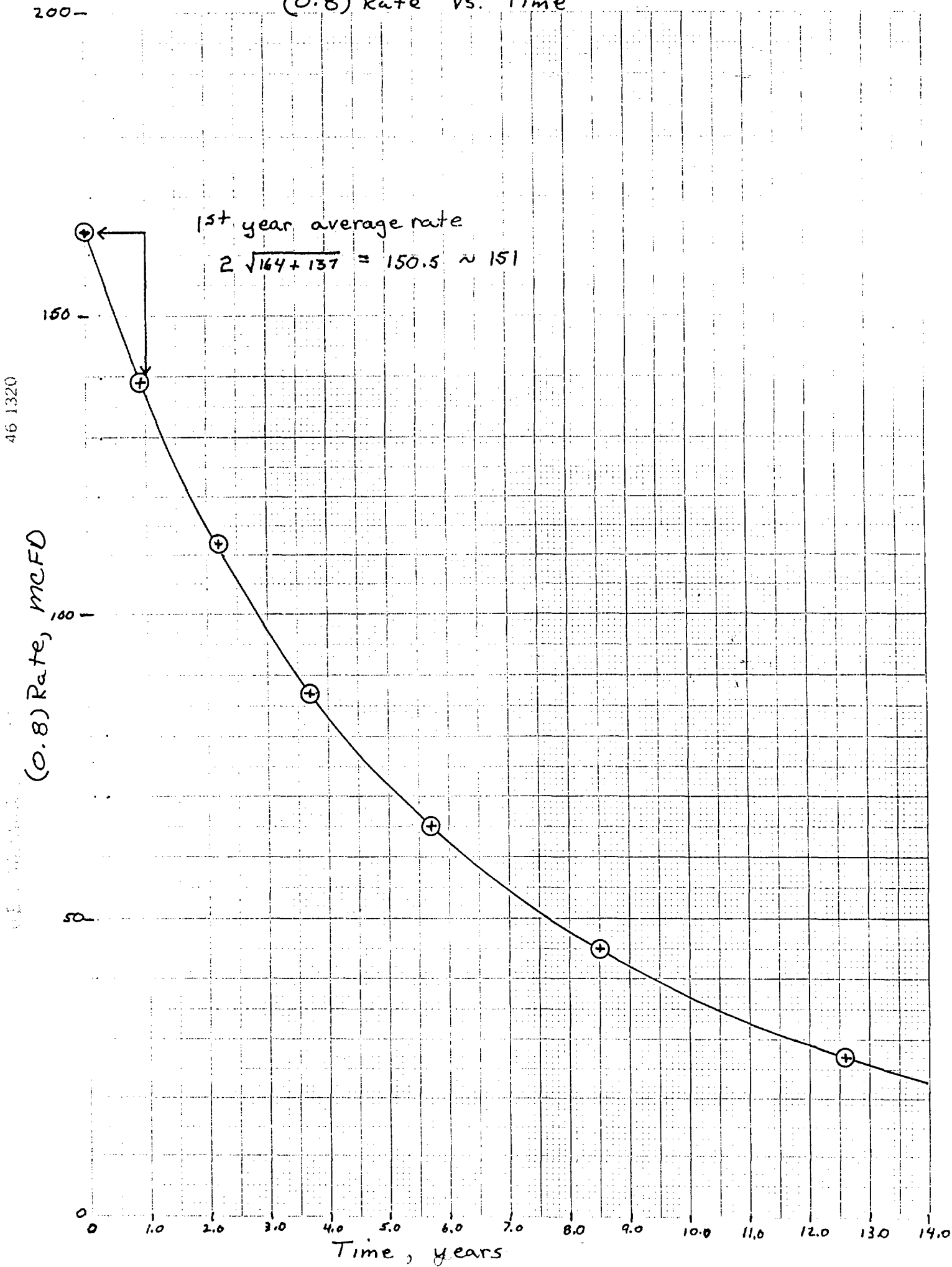
Gallegos Canyon Unit #346

$\Delta(P^2)$ vs. Q



$Q \times 10^4, \text{ mCFD}$

Gallegos Canyon Unit #346
(0.8) Rate vs. Time



46 1320

1st year average rate
 $2 \sqrt{164 + 137} = 150.5 \approx 151$

(0.8) Rate, mCFD

Time, years

SUMMARY

GALLEGOS CANYON UNIT #347
NW SE SECTION 15 T28N-R12W
SAN JUAN COUNTY, NEW MEXICO

The Gallegos Canyon Unit #347 was spudded on December 10, 1984 and drilled to a total depth of 1358' on December 12, 1984. 8 5/8" 20#/ft surface casing was set at 141' and cemented to the surface with 100 sx Class "B" cement, 4 1/2" 10.5#/ft production casing was set at 1351' and cemented to the surface with 175 sx 50-50 pozmix. The well was drilled through the Fruitland Formation.

LOGGING PROGRAM

Gamma Ray-Induction Electric- Compensated Density-Compensated Neutron logs were run to evaluate this well. Formations tops from these logs are:

Ojo Alamo - 253'
Kirtland - 361'
Fruitland -1097'

CORES AND DST's

No cores were cut and no DST's were run on this well.

COMPLETION

Perforated the Fruitland Formation at 1279', 1277', 1275', 1273', 1241', 1239', 1237', 1235', 1229', 1227', 1225', 1223', 1220', and 1218' with 1 JSPF. Broke down perfs with 1000 gals 2% KCL water and ball sealers. Frac'd with 40,800 gals 70 Q Foam with 52,000 pounds 12-20 sand. The well was tested 12-27-84 at a rate of 2936 MCFD with a FTP of 115 psig. This well first sold gas to EPNG on 1-17-85.

CONCLUSION

Using the economic parameters outlined in the following tables, this well will payout in less than one month. Therefore, it is concluded the Gallegos Canyon Unit #347 well is productive in paying quantities according to the unit agreement and should be classified as a paying well.

GALLEGOS CANYON UNIT NO. 347
TABLE I - DATA AND ASSUMPTIONS
UNIT PAY ANALYSIS

1. Net pay - 36 ft.
2. Average Porosity - 19.4%
3. Average water saturation - 36.0%
4. Well spacing - 160 acres
5. Reservoir Temperature - 85°F
- *6. Measured Initial BHP - 469 psi
7. Line Pressure - 115 psig
8. Calculated Flowing BHP - 118 psi
9. Gas Price - \$3.54/mcf
10. Operating Costs - \$250/month
11. Taxes - 9.0%
12. Discount Rate - 12.0%
13. Royalty - 12.5%
14. Well Cost - \$61,400
15. Gas Gravity - 0.655
- **16. Stabilized Test Flow Rate - 1468 MCFD
17. Calculated Stabilized Test Flowing BHP - 240 psi
18. n (assumed) - 0.85

* Well pressure was not completely build-up.

** 50% of initial flow rate was used throughout this evaluation to account for the quick drop in production common to these wells.

GALLEGOS CANYON UNIT NO. #347
TABLE II-PRODUCTION AND RESERVES

POINT	STATIC BHP	Z	$\Delta(P^2) \times 10^3$	Q, MCFD	0.8 Q, MCFD	Q, Avg MCFD	GIP MMCF	PROD. MMCF	Cum. Prod. MMCF	Days	TIME YRS	CUM YRS
TEST	469	0.920	162.361	1468								
1	469	0.920	206.037	1800	1440		1038					
2	450	0.923	188.576	1660	1328	1384	993	45	45	33	0.1	0.1
3	400	0.931	146.076	1350	1080	1204	875	118	163	98	0.3	0.4
4	350	0.940	108.565	1040	832	956	758	117	280	112	0.3	0.7
5	300	0.948	76.076	775	620	726	644	114	394	157	0.4	1.1
6	250	0.957	48.576	530	424	522	532	112	506	215	0.6	1.7
7	200	0.966	26.076	315	252	338	421	110	616	326	0.9	2.6

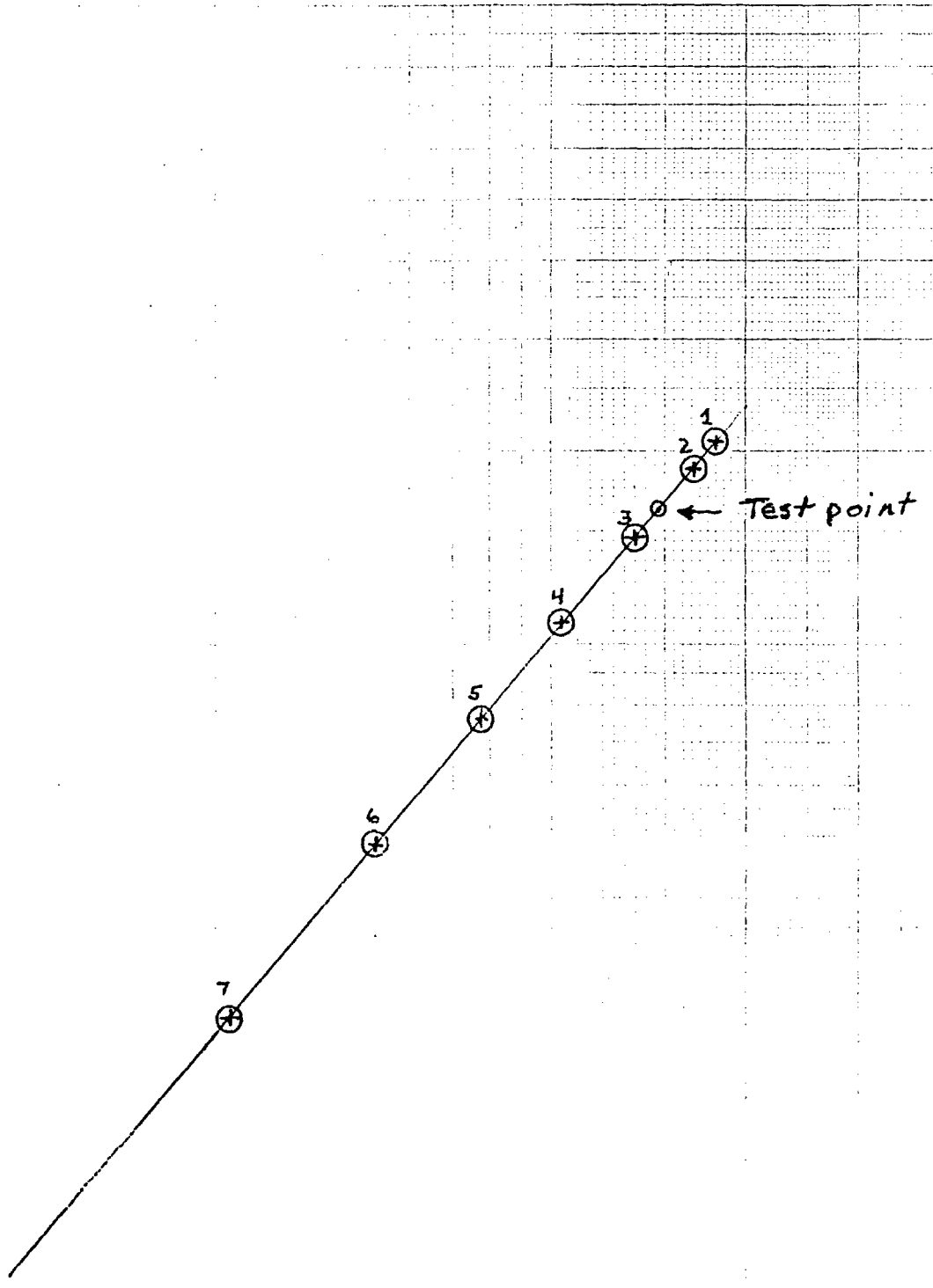
TABLE III -ECONOMICS

YEAR	AVG. PROD. RATE (MCFD)	YEARLY PROD. (MCF)	WORKING INTEREST				DISCOUNT FACTOR	DISCOUNT VALUE (\$)	\$61,400 W.I. COST PAYOUT
			YEARLY PROD. (MCF)	VALUE (\$)	LESS TAXES	LESS OPER. COST & PROFIT			
1	1054	384,710	336,621	1,191,639	1,084,392	1,081,211	0.8926	965,090	903,690

Gallegos Canyon Unit #347

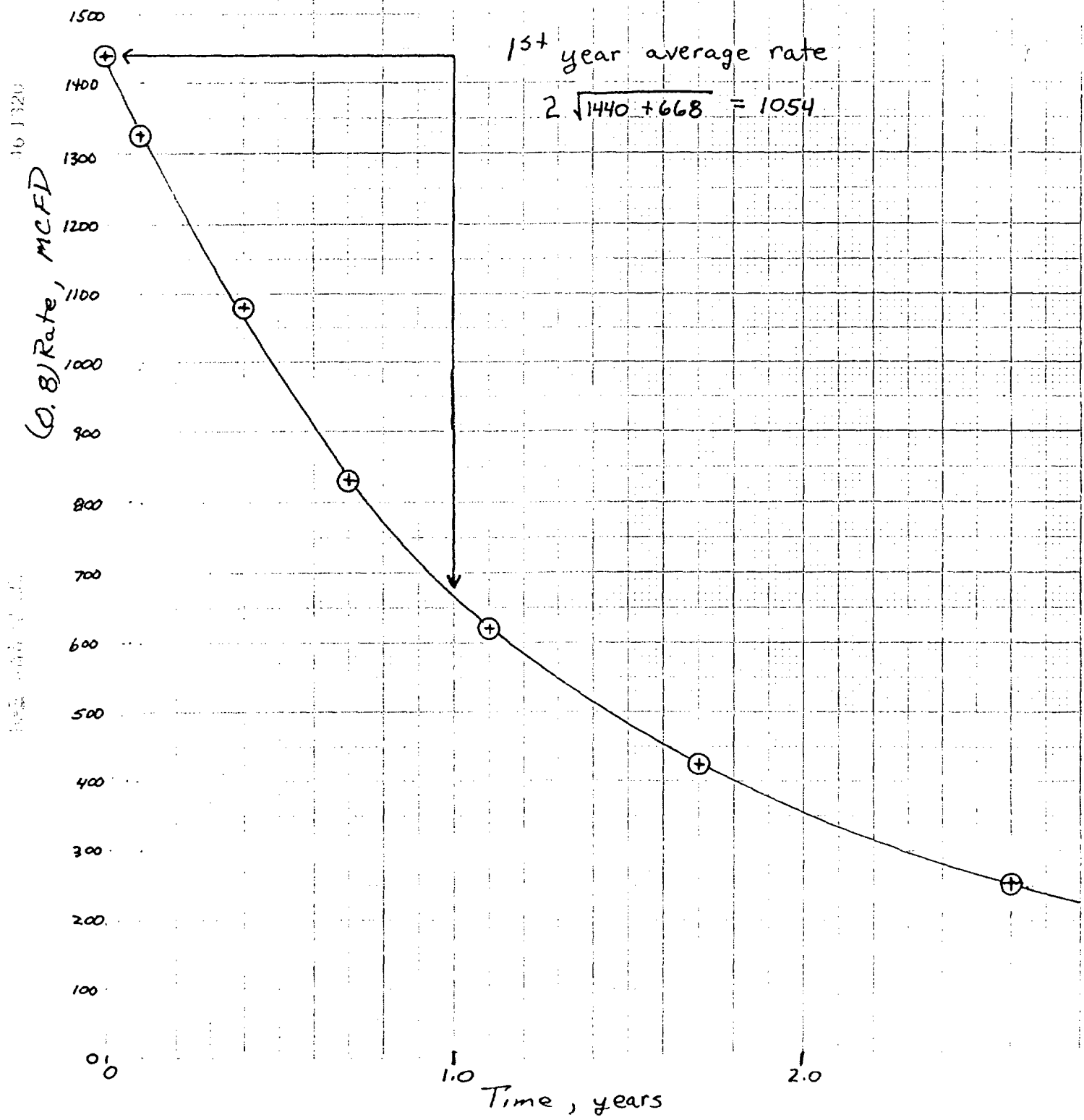
$\Delta(P^2)$ vs. Q .

$\Delta(P^2) \times 10^4$



$Q \times 10^2, \text{ MCFD}$

Gallegos Canyon Unit #34
(0.8) Rate vs. Q



SUMMARY

GALLEGOS CANYON UNIT #351
SE SE SECTION 10 T28N-R12W
SAN JUAN COUNTY, NEW MEXICO

The Gallegos Canyon Unit #351 was spudded on June 20, 1985, and drilled to a total depth of 1670' on June 22, 1985. 8 5/8" 20#/ft surface casing was set at 133' and cemented to the surface with 100 sx Class "B" cement, 4 1/2" 10.5#/ft production casing was set at 1668' and cemented to the surface with 250 sx 50-50 pozmix. The well was drilled through the Pictured Cliffs Formation.

LOGGING PROGRAM

Gamma Ray-Induction Electric- Compensated Density-Compensated Neutron logs were run to evaluate this well. Formations tops from these logs are:

Ojo Alamo - 293'
Kirtland - 389'
Fruitland -1140'
Pictured Cliffs - 1530'

CORES AND DST's

No cores were cut and no DST's were run on this well.

COMPLETION

Perforated and frac'd Pictured Cliffs. Tested 100%. Set CIBP at 1530'. Perforated the Fruitland Formation at 1283'-1285', 1278'-1281', 1270'-1272', and 1263'-1267' with 1 JSPF. Broke down perfs with 1000 gals 2% KCL water and ball sealers. Frac'd with 22,000 gals 70 Q Foam with 30,000 pounds 10-20 sand. The well was tested September 20, 1985 at a rate of 160 MCFD with a FTP of 32 psig.

CONCLUSION

Using the economic parameters outlined in the following tables, this well will payout in less than 2 years. Therefore, it is concluded the Gallegos Canyon Unit #351 well is productive in paying quantities according to the unit agreement and should be classified as a paying well.

GALLEGOS CANYON UNIT NO. 351
TABLE I - DATA AND ASSUMPTIONS
UNIT PAY ANALYSIS

1. Net pay - 27 ft.
2. Average Porosity - 19.8%
3. Average water saturation - 46.0%
4. Well spacing - 160 acres
5. Reservoir Temperature - 80°F
6. Measured Initial BHP - 515 psig
7. Line Pressure - 115 psig
8. Calculated Flowing BHP - 118 psig
9. Gas Price - \$3.64/mcf
10. Operating Costs - \$300/month
11. Taxes - 11.5%
12. Discount Rate - 12%
13. Royalty - 13.2%
14. Well Cost - \$78,100
15. Gas Gravity - 0.65
- *16. Stabilized Test Flow Rate - 80 MCFD
17. Calculated Stabilized Test Flowing BHP - 34 psig
18. n (assumed) - 0.85
- *19. Gas-in-place - 371.731 MMF

* The stabilized test flow rate and gas-in-place are risked 50%.

GALLEGOS CANYON UNIT NO. #351
TABLE II-PRODUCTION AND RESERVES

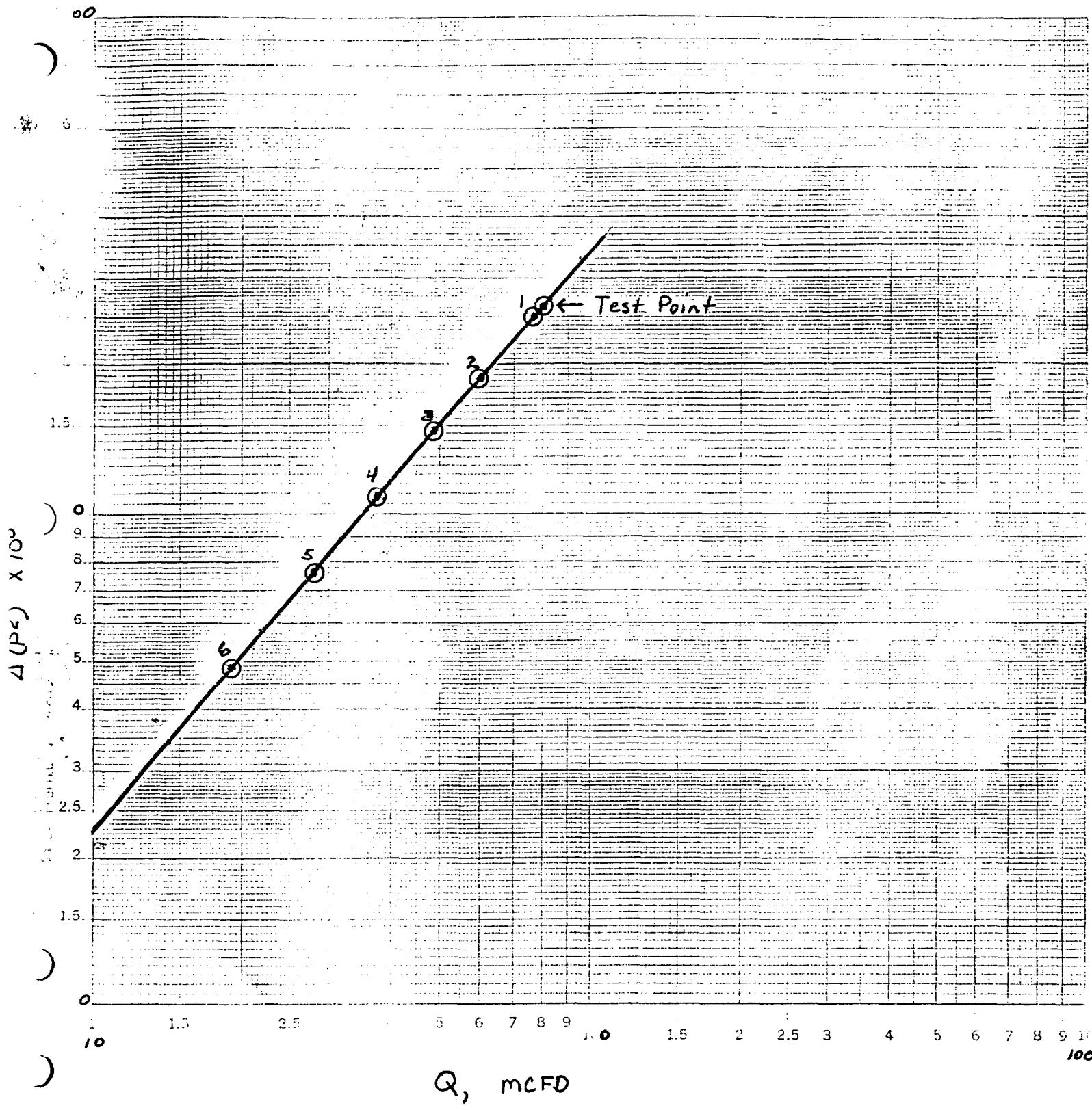
POINT	STATIC BHP	Z	$\Delta(P^2) \times 10^3$	Q, MCFD	0.8 Q, MCFD		GIP, MMCF	PROD. MMCF	Cum. Prod. MMCF	TIME		
					Q, Avg MCFD	Q, MCFD				Days	YRS	CUM YRS
TEST	515	0.913	264.069	80								
1	515	0.913	251.301	77	61.6		371.731					
2	450	0.924	188.576	60	48.0	54.8	320.947	50.784	50.784	927	2.54	2.54
3	400	0.932	146.076	48.5	38.8	43.4	282.837	38.110	88.884	878	2.41	4.95
4	350	0.940	108.576	37	29.6	34.2	245.377	37.460	126.354	1095	3.00	7.95
5	300	0.948	76.076	28	22.4	26.0	208.548	36.829	163.183	1417	3.88	11.83
6	250	0.956	48.576	19	15.2	18.8	172.336	36.212	199.395	1926	5.28	17.11

TABLE III -ECONOMICS

YEAR	AVG. PROD. RATE (MCFD)	YEARLY PROD. (MCF)	WORKING INTEREST						
			YEARLY PROD. (MCF)	YEARLY VALUE (\$)	LESS TAXES	LESS OPER. COST & PROFIT	DISCOUNT FACTOR	DISCOUNT VALUE (\$)	W.I. COST PAYOUT
1	58.7	21,426	18,598	67,696	59,911	56,095	0.8929	50,087	-28,013
2	53.2	19,418	16,855	61,351	54,296	50,480	0.7972	40,243	12,230

\$78,100

Gallegos Canyon Unit #351
 $\Delta(P^2)$ vs. Q

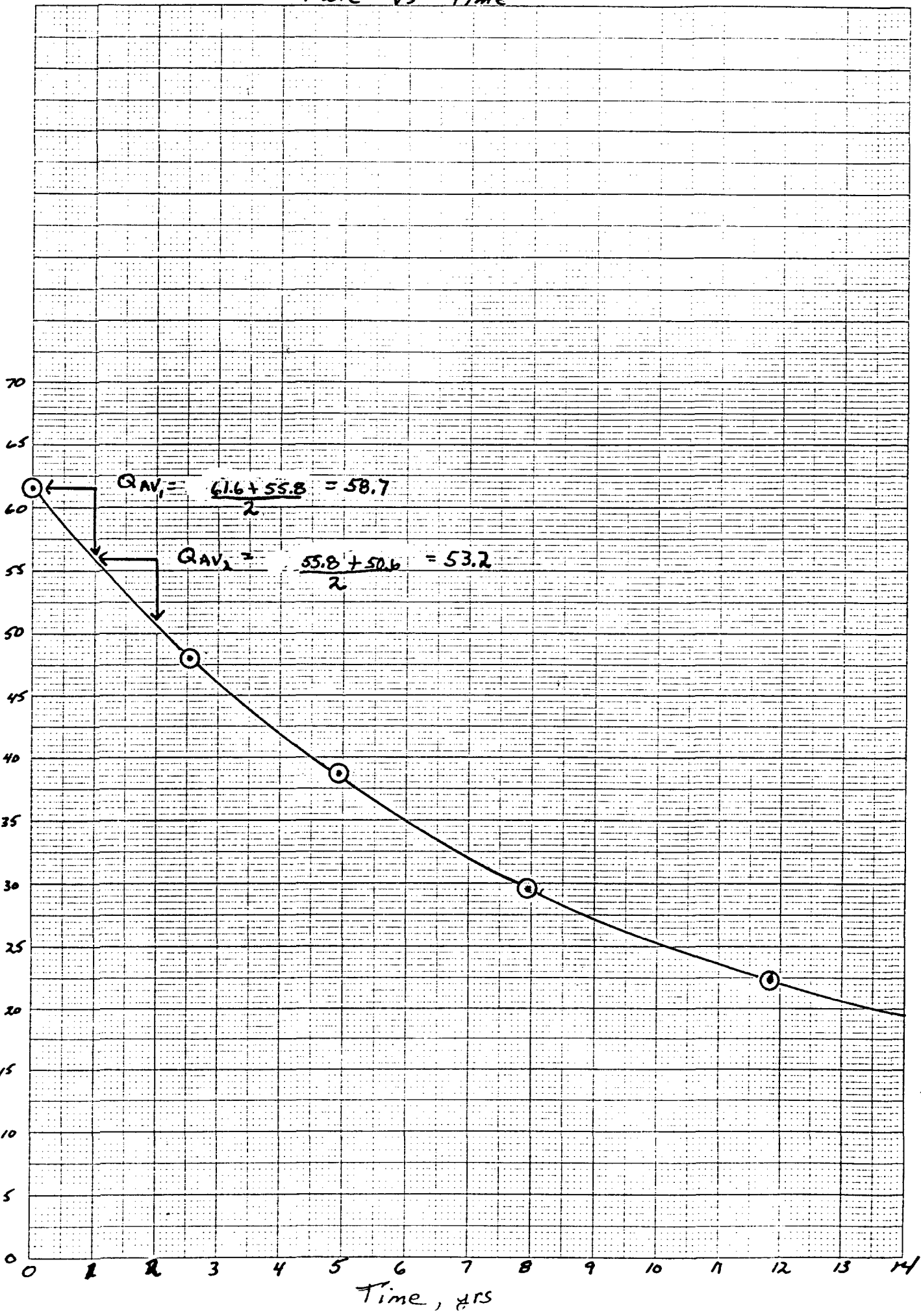


Gallegos Canyon Unit No. 351
Rate vs Time

46 1320

KE 10 X 10 TO 3/4 INCH 7 X 10 PLOTTER
KEUFFEL & ESSER CO. MADE IN U.S.A.

Q, mcfD



SUMMARY

GALLEGOS CANYON UNIT #356
SW NE SECTION 19 T29N-R12W
SAN JUAN COUNTY, NEW MEXICO

The Gallegos Canyon Unit #356 was spudded on June 10, 1985, and drilled to a total depth of 1215' on June 11, 1985. 7" 20#/ft surface casing was set at 136' and cemented to the surface with 70 sx Class "B" cement, 4 1/2" 10.5#/ft production casing was set at 1215' and cemented to the surface with 175 sx 50-50 pozmix. The well was drilled through the Fruitland Formation.

LOGGING PROGRAM

Gamma Ray-Induction Electric- Compensated Density-Compensated Neutron logs were run to evaluate this well. Formations tops from these logs are:

Kirtland - Surface
Fruitland - 975'

CORES AND DST's

No cores were cut and no DST's were run on this well.

COMPLETION

Perforated the Fruitland Formation at 1066', 1068', 1094', 1096', 1098', 1100', 1102', 1104', 1106', 1108', 1100', 1112', 1114', and 1122'-1125' with 1 JSPF. Frac'd with 40,000 gals 70 Q Foam with 52,000 pounds 10-20 sand. The well was tested July 19, 1985 at a rate of 633 MCFD with a FTP of 174 psig.

CONCLUSION

Using the economic parameters outlined in the following tables, this well will payout in less than 3 months. Therefore, it is concluded the Gallegos Canyon Unit #356 well is productive in paying quantities according to the unit agreement and should be classified as a paying well.

GALLEGOS CANYON UNIT NO. 356
TABLE I - DATA AND ASSUMPTIONS
UNIT PAY ANALYSIS

1. Net pay - 28 ft.
2. Average Porosity - 17.3%
3. Average water saturation - 33.0%
4. Well spacing - 160 acres
5. Reservoir Temperature - 80°F
6. Measured Initial BHP - 345 psig
7. Line Pressure - 115 psig
8. Calculated Flowing BHP - 118 psig
9. Gas Price - \$3.64/mcf
10. Operating Costs - \$300/month
11. Taxes - 11.5%
12. Discount Rate - 12.0%
13. Royalty - 13.2%
14. Well Cost - \$58,200
15. Gas Gravity - 0.65
- *16. Stabilized Test Flow Rate - 317 MCFD
17. Calculated Stabilized Test Flowing BHP - 180 psig
18. n (assumed) - 0.85
- *19. Gas-in-place - 271.630 MMF

* The stabilized test flow rate and gas-in-place were risked 50%.

GALLEGOS CANYON UNIT NO. #356
TABLE II-PRODUCTION AND RESERVES

POINT	STATIC BHP	Z	$\Delta(P^2) \times 10^3$	Q, MCFD	0.8 Q, MCFD		Q, Avg MCFD		GIP MMCF	PROD. MMCF	Cum. Prod. MMCF	TIME	
					Days	YRS	CUM						
TEST	345	0.941	86.625	317									
1	345	0.941	105.101	370	296				271.630				
2	300	0.948	76.076	280	224		260	234.456	37.174	37.174	143	0.39	0.39
3	250	0.956	48.576	192	154		189	193.745	40.711	77.885	215	0.59	0.98
4	200	0.965	26.076	113	90		122	153.551	40.194	118.079	329	0.90	1.88
5	175	0.974	16.701	79	63		76	133.115	20.436	138.515	268	0.74	2.62

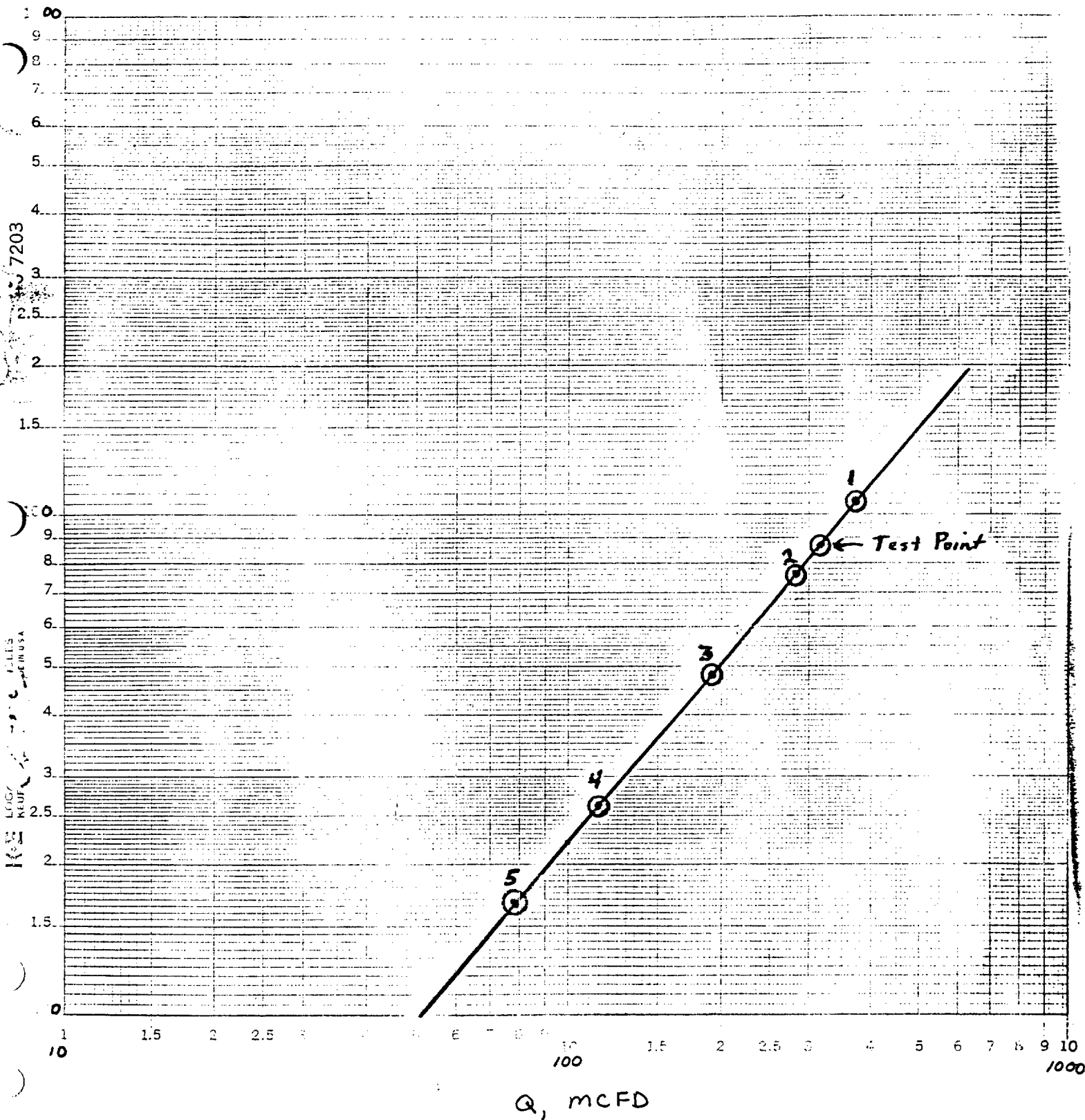
TABLE III -ECONOMICS

YEAR	AVG. PROD. RATE (MCFD)	YEARLY PROD. (MCF)	WORKING INTEREST							DISCOUNT FACTOR	DISCOUNT VALUE (\$)	W.I. COST PAYOUT
			YEARLY PROD. (MCF)	VALUE (\$)	LESS TAXES	LESS OPER. COST & PROFIT	DISCOUNT VALUE (\$)					
1	224	81,760	70,968	258,324	228,616	224,800	0.8929	200,724	142,524			

\$58,200

Gallegos Canyon Unit #356

$\Delta(P^2)$ vs Q



Gallegos Canyon Unit #356
Rate vs Time

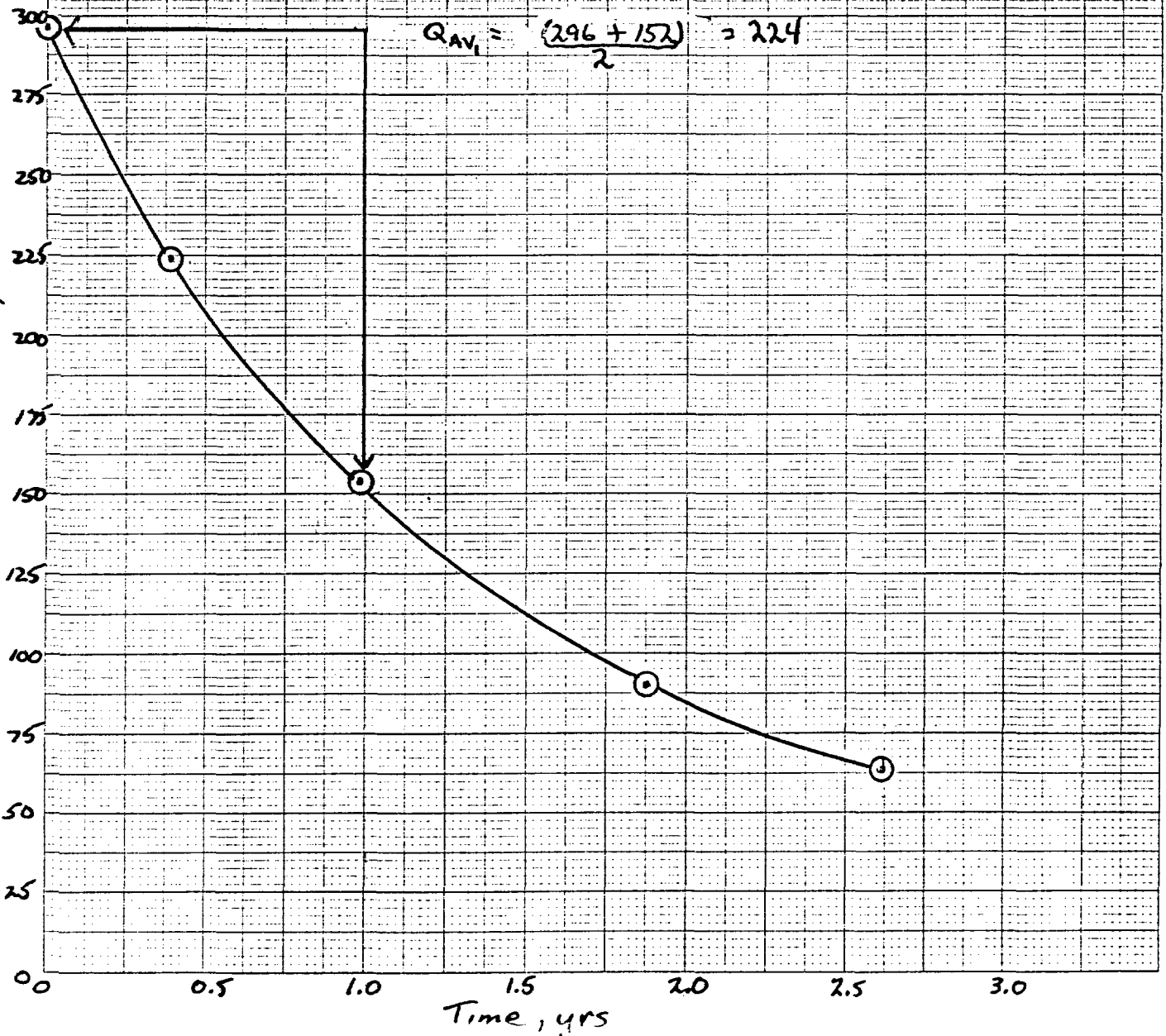
W

)

46 1320

K&E 10 X 10 TO 1 1/2 INCH 7 X 10 BICHES
KEUFFEL & ESSER CO. MADE IN U.S.A.

Rate, mcf/d



)

)

SUMMARY

GALLEGOS CANYON UNIT #357
NE NE SECTION 29 T29N-R12W
SAN JUAN COUNTY, NEW MEXICO

The Gallegos Canyon Unit #357 was spudded on June 12, 1985, and drilled to a total depth of 1078' on June 14, 1985. 7" 20#/ft surface casing was set at 136' and cemented to the surface with 70 sx Class "B" cement; 4 1/2" 10.5#/ft production casing was set at 1078' and cemented to the surface with 175 sx 50-50 pozviz. The well was drilled through the Fruitland Formation.

LOGGING PROGRAM

Gamma Ray-Induction Electric- Compensated Density-Compensated Neutron logs were run to evaluate this well. Formations tops from these logs are:

Kirtland - Surface
Fruitland - 839'

CORES AND DST's

No cores were cut and no DST's were run on this well.

COMPLETION

Perforated the Fruitland Formation at 1003'-1005', 997'-1001', 984'-986', 962'-966' and 952'-954' with 1 JSPF. Frac'd with 36,000 gals 70 Q Foam with 28,000 pounds 10-20 sand. The well was tested July 27, 1985 at a rate of 1027 MCFD with a FTP of 290 psig.

CONCLUSION

Using the economic parameters outlined in the following tables, this well will payout in less than 2 months. Therefore, it is concluded the Gallegos Canyon Unit #357 well is productive in paying quantities according to the unit agreement and should be classified as a paying well.

GALLEGOS CANYON UNIT NO. 357
TABLE I - DATA AND ASSUMPTIONS
UNIT PAY ANALYSIS

1. Net pay - 26 ft.
2. Average Porosity - 18.0%
3. Average water saturation - 27.1%
4. Well spacing - 160 acres
5. Reservoir Temperature - 80°F
6. Measured Initial BHP - 425 psig
7. Line Pressure - 115 psig
8. Calculated Flowing BHP - 118 psig
9. Gas Price - \$3.64/mcf
10. Operating Costs - \$300/month
11. Taxes - 11.5%
12. Discount Rate - 12.0%
13. Royalty - 13.2%
14. Well Cost - \$56,100
15. Gas Gravity - 0.65
- *16. Stabilized Test Flow Rate - 514 MCFD
17. Calculated Stabilized Test Flowing BHP - 299 psig
18. n (assumed) - 0.85
- *19. Gas-in-place - 357.069 MMF

* The stabilized test flow rate and gas-in-place were risked 50%.

GALLAGOS CANYON UNIT NO. #357
TABLE II-PRODUCTION AND RESERVES

POINT	STATIC BHP	Z	$\Delta(P^2) \times 10^3$	Q, MCFD	0.8 Q, MCFD		GIP MMCF	PROD. MMCF	Cum. Prod. MMCF	TIME		
					MCFD	Q, Avg MCFD				Days	YRS	CUM YRS
TEST	425	0.927	91.224	395								
1	425	0.927	166.701	650	520		357.069					
2	400	0.932	146.076	585	468	494	334.262	22.807	22.807	46	0.13	0.13
3	350	0.940	108.576	455	364	416	289.990	44.272	67.079	106	0.29	0.42
4	300	0.948	76.076	340	272	318	246.466	43.525	110.603	137	0.38	0.80
5	250	0.956	48.576	230	184	228	203.669	42.796	153.400	188	0.51	1.31
6	200	0.965	26.076	135	108	146	161.416	42.253	195.653	289	0.79	2.10

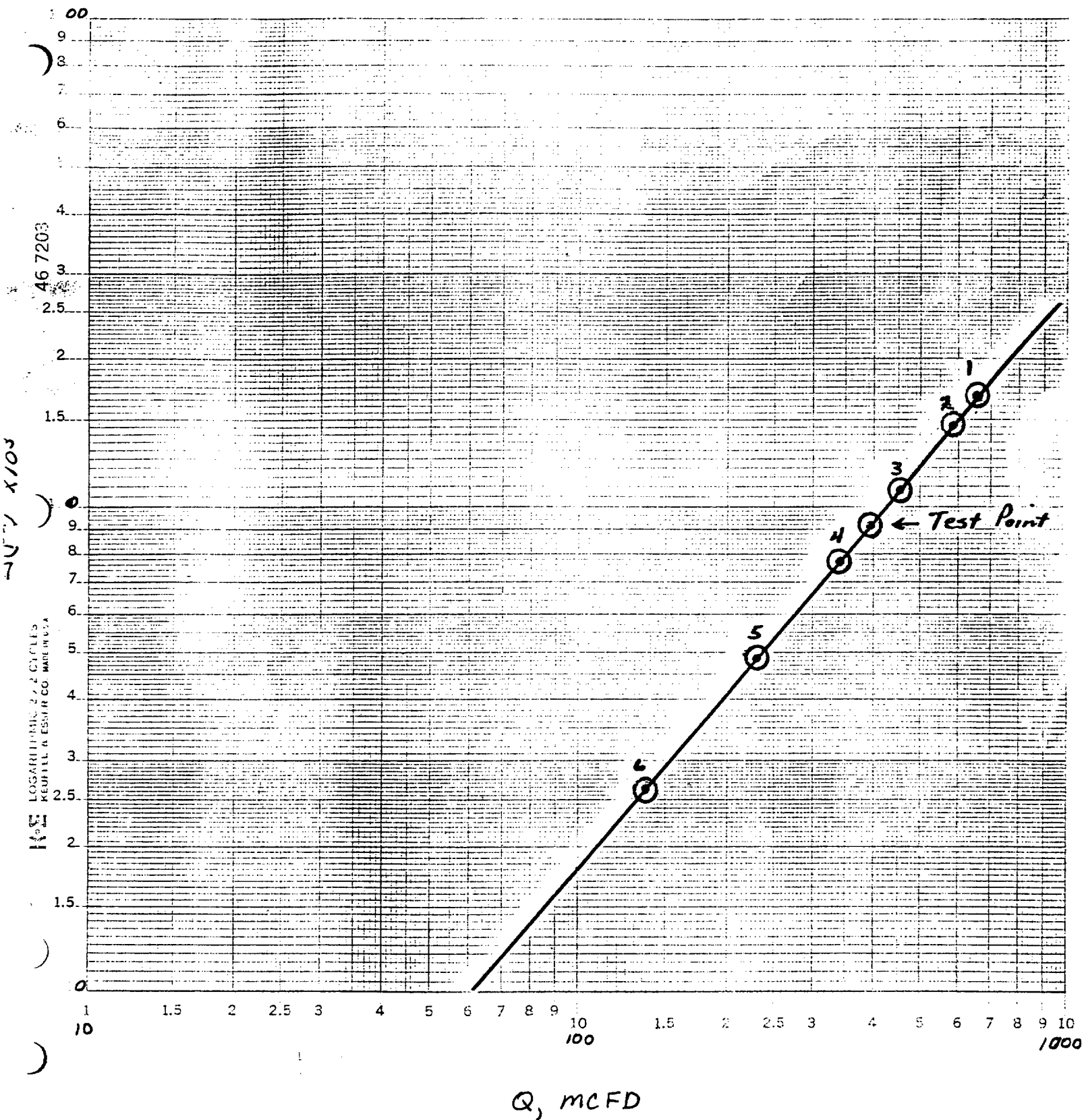
TABLE III -ECONOMICS

YEAR	AVG. PROD. RATE (MCFD)	YEARLY PROD. (MCF)	WORKING INTEREST		DISCOUNT FACTOR	DISCOUNT VALUE(\$)	W.I. COST PAYOUT		
			YEARLY PROD. (MCF)	VALUE (\$)				LESS TAXES	LESS OPER. COST & PROFIT
1	376	137,240	119,124	433,613	383,747	379,931	0.8929	339,240	283,140

\$57,200

Gallegos Canyon Unit #357

$\Delta(P^2)$ vs Q

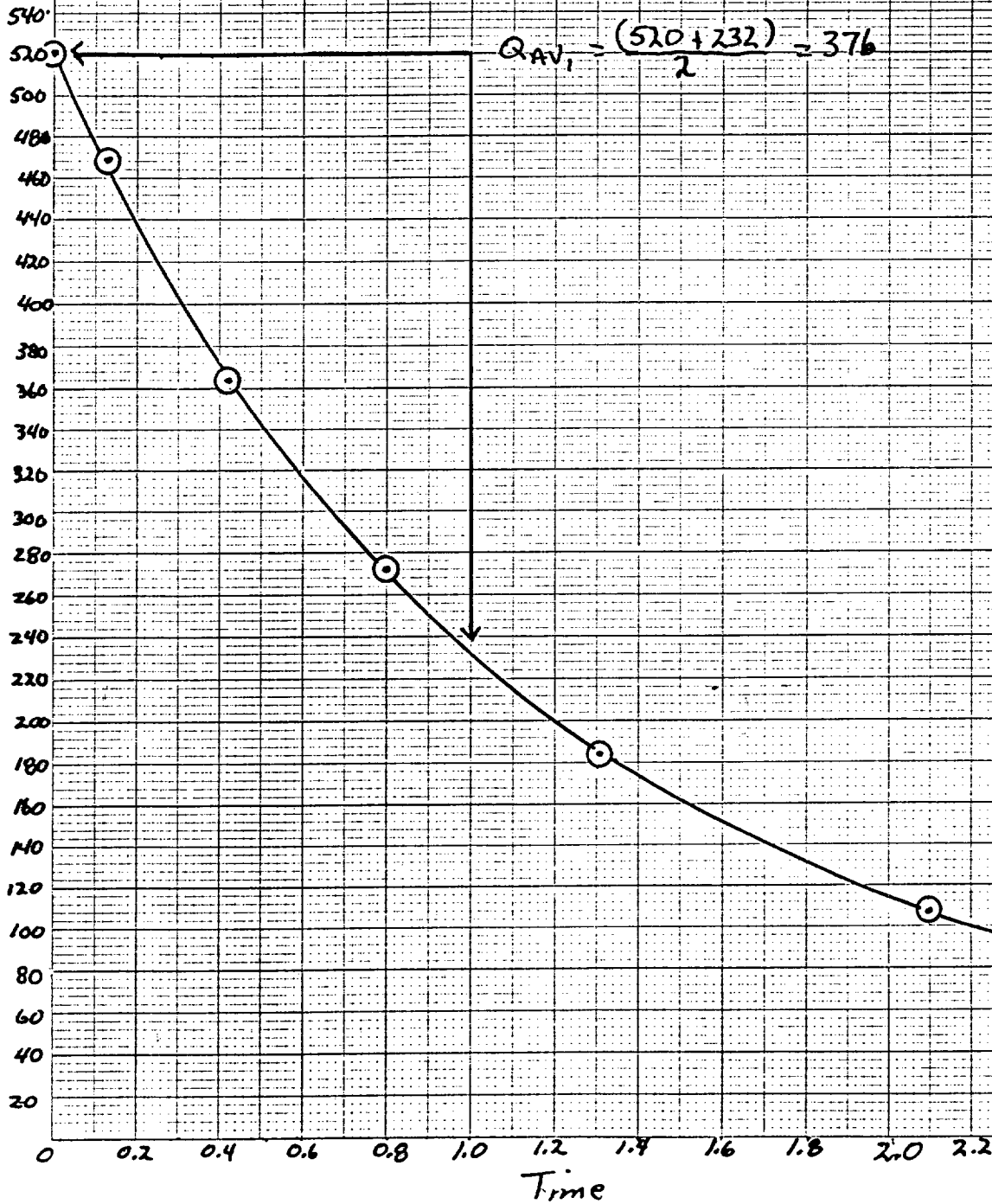


Gallegos Lanyon Unit #331
Rate vs Time

46 1320

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Rate, McFD



SUMMARY

GALLEGOS CANYON UNIT #358
SW SE SECTION 29 T29N-R12W
SAN JUAN COUNTY, NEW MEXICO

The Gallegos Canyon Unit #358 was spudded on June 15, 1985, and drilled to a total depth of 1168' on June 16, 1985. 7" 20#/ft surface casing was set at 136' and cemented to the surface with 100 sx Class "B" cement, 4 1/2" 10.5#/ft production casing was set at 1168' and cemented to the surface with 175 sx 50-50 pozviz. The well was drilled through the Fruitland Formation.

LOGGING PROGRAM

Gamma Ray-Induction Electric- Compensated Density-Compensated Neutron logs were run to evaluate this well. Formations tops from these logs are:

Kirtland - Surface
Fruitland - 913'

CORES AND DST's

No cores were cut and no DST's were run on this well.

COMPLETION

Perforated the Fruitland Formation at 973'-976', 981'-984', 1058'-1061' and 1064'-1070' with 1 JSPF. Frac'd with 40,000 gals 70 Q Foam with 52,000 pounds 10-20 sand. The well was tested July 24, 1985 at a rate of 789 MCFD with a FTP of 220 psig.

CONCLUSION

Using the economic parameters outlined in the following tables, this well will payout in less than 3 months. Therefore, it is concluded the Gallegos Canyon Unit #358 well is productive in paying quantities according to the unit agreement and should be classified as a paying well.

GALLEGOS CANYON UNIT NO. 358
TABLE I - DATA AND ASSUMPTIONS
UNIT PAY ANALYSIS

1. Net pay - 29 ft.
2. Average Porosity - 18.6%
3. Average water saturation - 31.6%
4. Well spacing - 160 acres
5. Reservoir Temperature - 80°F
6. Measured Initial BHP - 400 psig
7. Line Pressure - 115 psig
8. Calculated Flowing BHP - 118 psig
9. Gas Price - \$3.64/mcf
10. Operating Costs - \$300/month
11. Taxes - 11.5%
12. Discount Rate - 12.0%
13. Royalty - 13.2%
14. Well Cost - \$61,400
15. Gas Gravity - 0.65
- *16. Stabilized Test Flow Rate - 395 MCFD
17. Calculated Stabilized Test Flowing BHP - 227 psig
18. n (assumed) - 0.85
- *19. Gas-in-place - 361.477 MMF

* The stabilized test flow rate and gas-in-place were risked 50%.

GALLIGOS CANYON UNIT NO. #358
TABLE II--PRODUCTION AND RESERVES

POINT	STATIC BHP	Z	$\Delta(P^2) \times 10^3$	Q, MCFD	0.8 Q, MCFD		GIP MMCF	PROD. MMCF	Cum. Prod. MMCF	TIME	
					Q, Avg MCFD	Q, MCFD				Days	YRS
TEST	400	0.932	108.471	395							
1	400	0.932	146.076	510	408		361.477				
2	350	0.940	108.576	395	316	362	313.601	47.876	47.876	132	0.36
3	300	0.948	76.076	292	234	275	266.532	47.068	94.945	171	0.47
4	250	0.956	48.576	197	158	196	220.252	46.281	141.225	236	0.65
5	200	0.956	26.076	117	94	126	174.558	45.694	186.919	363	0.99
6	175	0.974	16.701	81	65	80	151.327	23.231	210.150	290	0.80

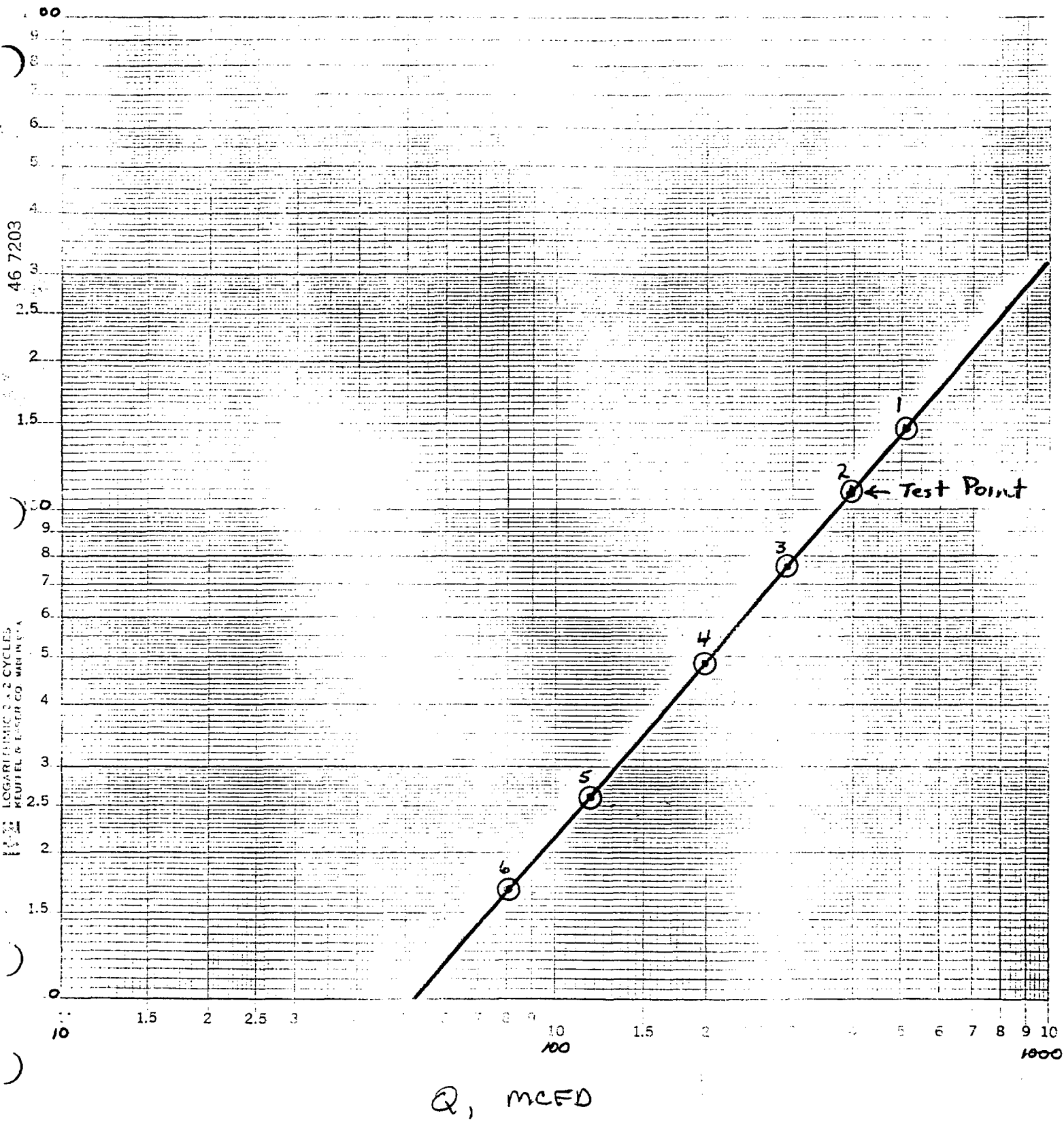
TABLE III -ECONOMICS

YEAR	AVG. PROD. RATE (MCFD)	YEARLY PROD. (MCF)	WORKING INTEREST				DISCOUNT FACTOR	DISCOUNT VALUE (\$)	W.I. COST PAYOUT
			YEARLY PROD. (MCF)	VALUE (\$)	LESS TAXES	LESS OPER. COST & PROFIT			
1	309	112,785	97,897	356,346	315,367	311,551	0.8929	278,184	216,784

WORKING INTEREST

\$61,400

Gallegos Canyon Unit #358
 $\Delta(P^2)$ vs Q



Gallegos Canyon Unit # 538
Rate vs Time

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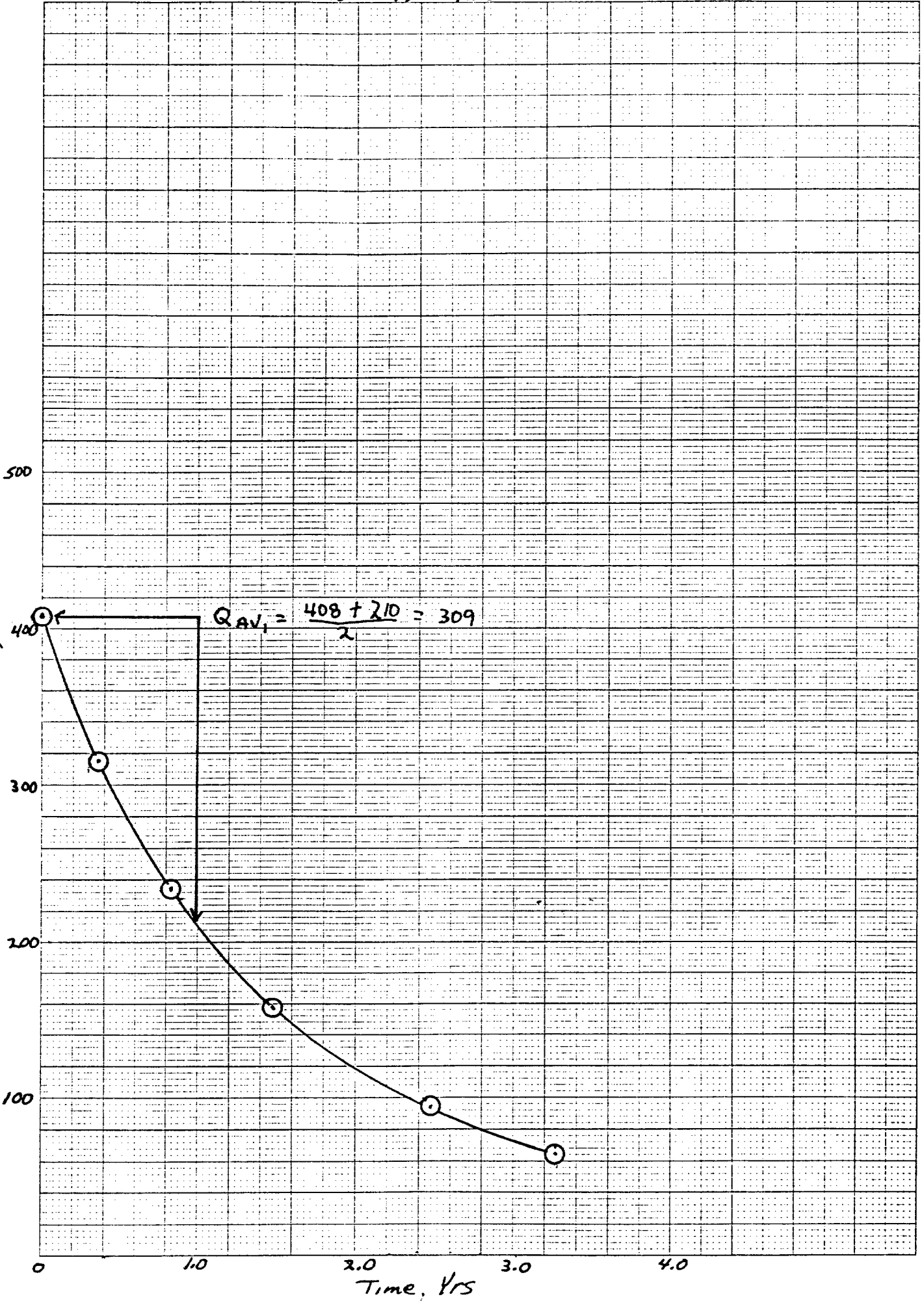
46 1320

Rate, mCFD

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SUMMARY

GALLEGOS CANYON UNIT #359
SW SW SECTION 10 T28N, R12W
SAN JUAN COUNTY, NEW MEXICO

The Gallegos Canyon Unit #359 was spudded on June 27, 1985, and drilled to a total depth of 1245' on June 28, 1985. 8 5/8" 24#/ft surface casing was set at 132' and cemented to the surface with 110 sx Class "B" cement, 4 1/2" 10.5#/ft production casing was set at 1238' and cemented to the surface with 200 sx 50-50 pozviz. The well was drilled through the Fruitland Formation.

LOGGING PROGRAM

Gamma Ray-Induction Electric- Compensated Density-Compensated Neutron logs were run to evaluate this well. Formations tops from these logs are:

Ojo Alamo - 128'
Kirtland - 246'
Fruitland - 988'

CORES AND DST's

No cores were cut and no DST's were run on this well.

COMPLETION

Perforated the Fruitland Formation at 1158', 1156', 1154', 1152', 1150', 1138', 1136', 1134', 1132', 1130', 1128', 1126', 1122', 1120', and 1118', with 1 JSPPF. Frac'd with 40,000 gals 70 Q Foam with 52,000 pounds 10-20 sand. The well was tested August 14, 1985 at a rate of 1214 MCFD with a FTP of 345 psig.

CONCLUSION

Using the economic parameters outlined in the following tables, this well will payout in less than one months. Therefore, it is concluded the Gallegos Canyon Unit #359 well is productive in paying quantities according to the unit agreement and should be classified as a paying well.

GALLEGOS CANYON UNIT NO. 359
TABLE I - DATA AND ASSUMPTIONS
UNIT PAY ANALYSIS

1. Net pay - 27 ft.
 2. Average Porosity - 20.4%
 3. Average water saturation - 33.3%
 4. Well spacing - 160 acres
 5. Reservoir Temperature - 80°F
 6. Measured Initial BHP - 521 psig
 7. Line Pressure - 115 psig
 8. Calculated Flowing BHP - 118 psig
 9. Gas Price - \$3.64/mcf
 10. Operating Costs - \$300/month
 11. Taxes - 11.5%
 12. Discount Rate - 12.0%
 13. Royalty - 13.2%
 14. Well Cost - \$57,700
 15. Gas Gravity - 0.65
 - *16. Stabilized Test Flow Rate - 607 MCFD
 17. Calculated Stabilized Test Flowing BHP - 357 psig
 18. n (assumed) - 0.85
 - *19. Gas-in-place - 478.583 MMF
- * The stabilized test flow rate and gas-in-place were risked 50%.

GALLEGOS CANYON UNIT NO. #359
TABLE II-PRODUCTION AND RESERVES

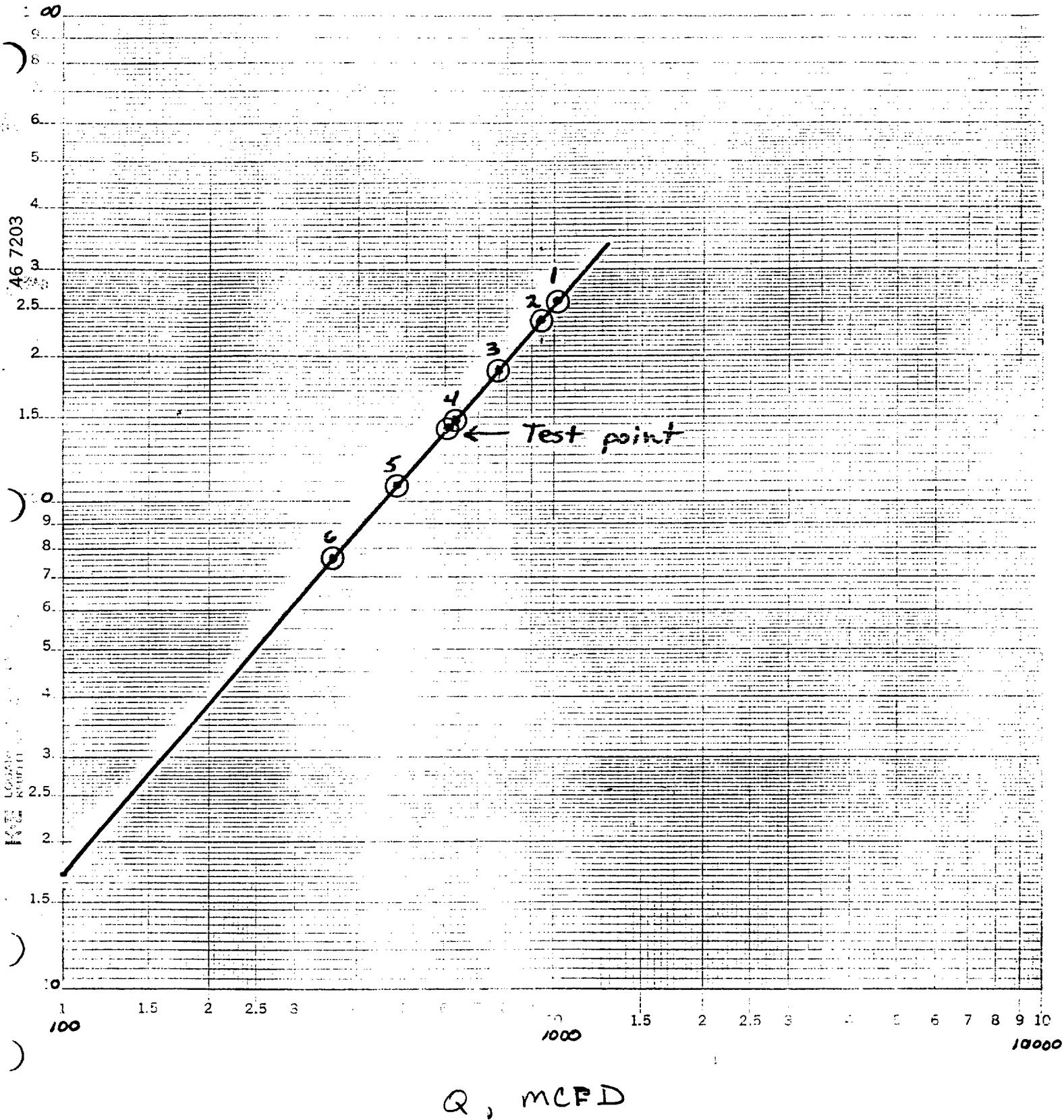
POINT	STATIC BHP	Z	$\Delta(P^2) \times 10^3$	Q, MCFD	0.8 Q, MCFD		Q, Avg MCFD	GIP MMCF	PROD. MMCF	Cum. Prod. MMCF	TIME		
					Q, MCFD	Q, Avg MCFD					Days	YRS	CUM YRS
TEST	521	0.913	143.992	607									
1	521	0.913	257.517	1025	820			478.583					
2	500	0.916	236.075	940	752			457.788	20.795	20.795	26	0.07	0.07
3	450	0.924	188.576	770	616			408.442	49.346	70.141	72	0.20	0.27
4	400	0.932	146.076	625	500			359.943	48.499	118.640	87	0.24	0.51
5	350	0.940	108.576	480	384			312.270	47.673	166.313	108	0.30	0.81
6	300	0.948	76.076	355	284			265.401	46.869	213.182	140	0.38	1.19

TABLE III -ECONOMICS

YEAR	AVG. PROD. RATE (MCFD)	YEARLY PROD. (MCF)	WORKING INTEREST					DISCOUNT FACTOR	DISCOUNT VALUE (\$)	W.I. COST PAYOUT
			YEARLY PROD. (MCF)	VALUE (\$)	LESS TAXES	LESS OPER. COST & PROFIT	DISCOUNT VALUE (\$)			
1	575	209,875	182,172	663,104	586,847	583,031	0.8929	520,589	462,889	

\$57,700

Gallegos Canyon Unit #359
 $\Delta(P^2)$ vs Q



Gallegos Canyon Unit #359
Rate vs. Time

W

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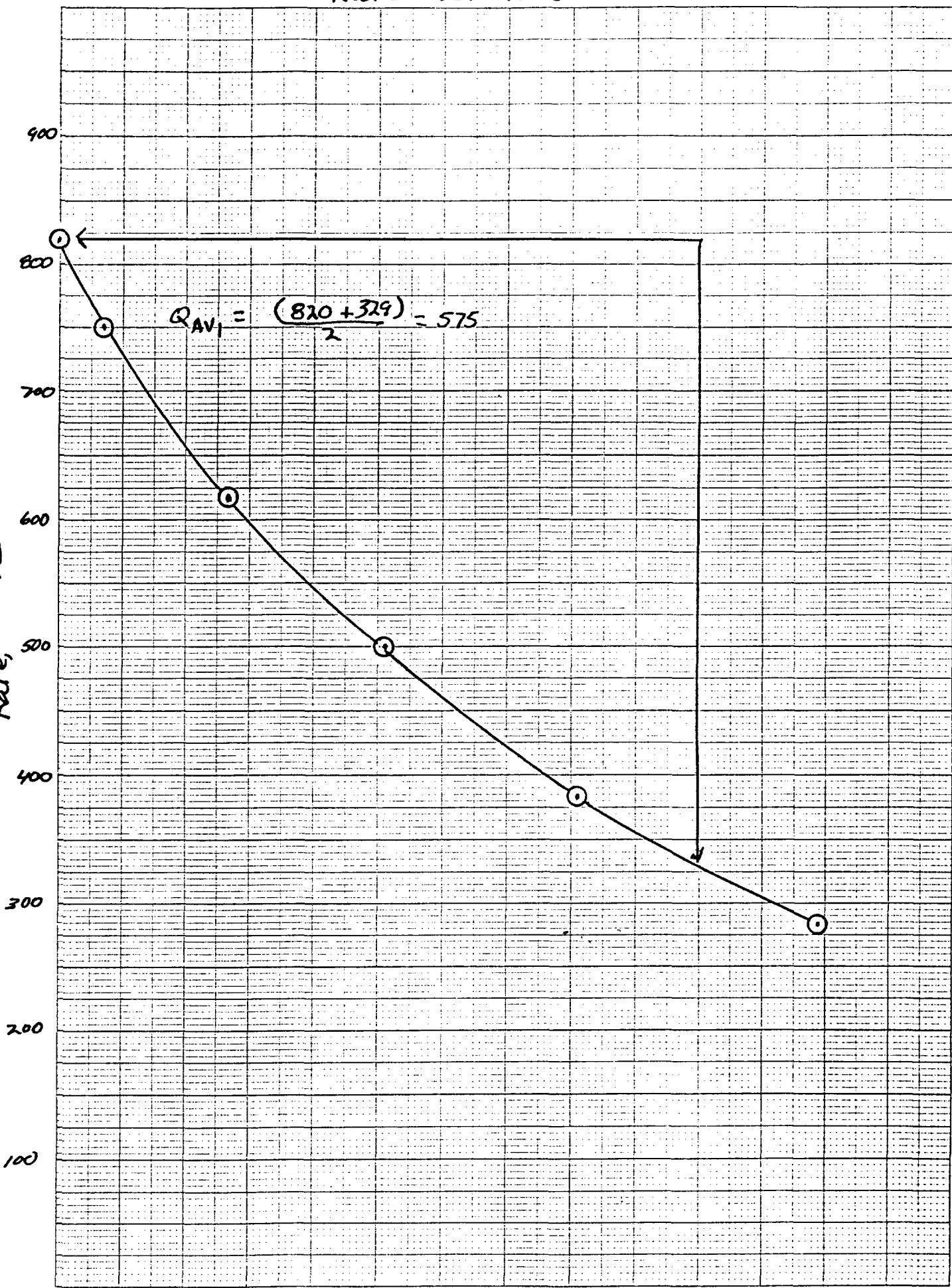
46 1320

Rate, MCFD

K&E 10 X 10 TO 1/2 INCH 7 X 10 INCHES
KEUFFEL & ESSER CO. MADE IN U.S.A.

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$$Q_{AV1} = \frac{(820 + 329)}{2} = 575$$

0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2

Time hrs

SUMMARY

GALLEGOS CANYON UNIT #360
NW NW SECTION 14 T28N-R12W
SAN JUAN COUNTY, NEW MEXICO

The Gallegos Canyon Unit #360 was spudded on June 22, 1985, and drilled to a total depth of 1420' on June 24, 1985. 8 5/8" 24#/ft surface casing was set at 130' and cemented to the surface with 110 sx Class "B" cement, 4 1/2" 10.5#/ft production casing was set at 1420' and cemented to the surface with 200 sx 50-50 pozmix. The well was drilled through the Fruitland Formation.

LOGGING PROGRAM

Gamma Ray-Induction Electric- Compensated Density-Compensated Neutron logs were run to evaluate this well. Formations tops from these logs are:

Ojo Alamo - 383'
Kirtland - 459'
Fruitland - 1201'

CORES AND DST's

No cores were cut and no DST's were run on this well.

COMPLETION

Perforated the Fruitland Formation at 1313'-1315' and 1320'-1328' with 1 JSPF. Frac'd with 22,000 gals 70 Q Foam with 30,000 pounds 10-20 sand. The well was tested July 25, 1985 at a rate of 925 MCFD with a FTP of 260 psig.

CONCLUSION

Using the economic parameters outlined in the following tables, this well will payout in less than 3 months. Therefore, it is concluded the Gallegos Canyon Unit #360 well is productive in paying quantities according to the unit agreement and should be classified as a paying well.

GALLEGOS CANYON UNIT NO. 360
TABLE I - DATA AND ASSUMPTIONS
UNIT PAY ANALYSIS

1. Net pay - 11 ft.
 2. Average Porosity - 15.1%
 3. Average water saturation - 34.5%
 4. Well spacing - 160 acres
 5. Reservoir Temperature - 80°F
 6. Measured Initial BHP - 410 psig
 7. Line Pressure - 115 psig
 8. Calculated Flowing BHP - 118 psig
 9. Gas Price - \$3.64/mcf
 10. Operating Costs - \$300/month
 11. Taxes - 11.5%
 12. Discount Rate - 12.0%
 13. Royalty - 13.2%
 14. Well Cost - \$56,300
 15. Gas Gravity - 0.65
 - *16. Stabilized Test Flow Rate - 463 MCFD
 17. Calculated Stabilized Test Flowing BHP - 271 psig
 18. n (assumed) - 0.85
 - *19. Gas-in-place - 109.492 MMF
- * The stabilized test flow rate and gas-in-place were risked 50%.

GALLIagos CANYON UNIT NO. #360
TABLE II-PRODUCTION AND RESERVES

POINT	STATIC BHP	Z	$\Delta (P^2) \times 10^3$	Q, MCFD	0.8 Q, MCFD			GIP MMCF	PROD. MMCF	Cum. Prod. MMCF	TIME	
					Q, Avg MCFD	Q, MCFD	Q, Avg MCFD				Days	YRS
TEST	410	0.930	94.659	463								
1	410	0.930	154.176	710	568		109.492					
2	400	0.932	146.076	675	540	554	106.592	2.900	2.900	5.2	0.01	0.01
3	350	0.940	108.576	525	420	480	92.474	14.118	17.018	29.4	0.08	0.09
4	300	0.948	76.076	385	308	364	78.595	13.879	30.897	38.1	0.11	0.20
5	250	0.956	48.576	262	210	259	64.948	13.647	44.544	52.7	0.14	0.34
6	200	0.965	26.076	155	124	167	51.474	13.474	58.018	80.7	0.22	0.56

TABLE III -ECONOMICS

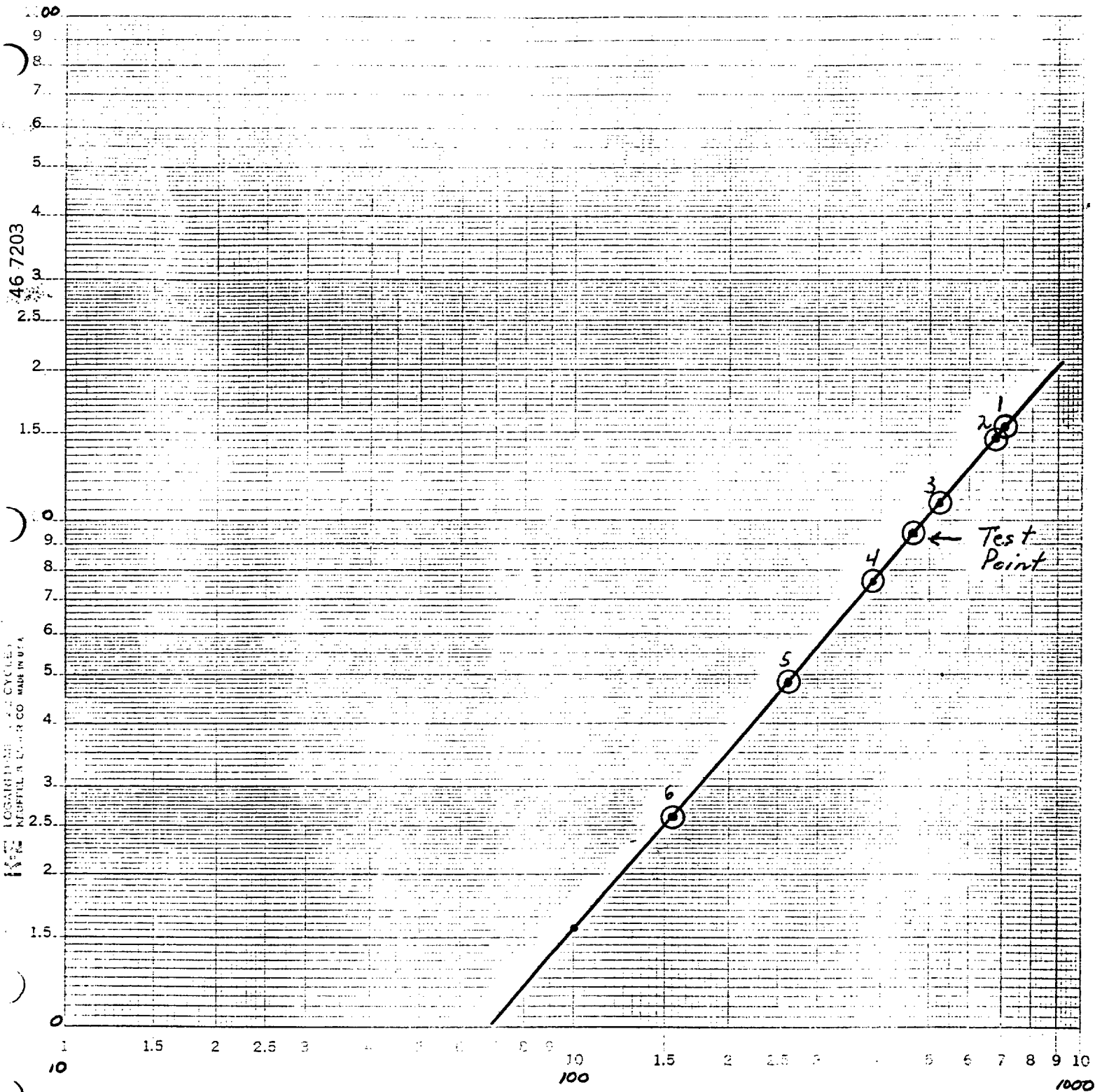
YEAR	AVG. PROD. RATE (MCFD)	PROD. (MCF)	WORKING INTEREST			DISCOUNT FACTOR	DISCOUNT VALUE(\$)	W.I. COST PAYOUT	
			PROD. (MCF)	VALUE (\$)	LESS TAXES				LESS OPER. COST & PROFIT
0.5	355	64,788	56,236	204,699	181,159	179,250	0.9449	169,376	113,076

WORKING INTEREST

\$56,300

Gallegos Canyon Unit #360

$\Delta(P^2)$ vs Q



Q, mcfD

46 7203

LOGARITHMIC SCALE
RESERVED BY L. H. CO. MADE IN U.S.A.

46 1320

K&E 10 X 10 TO 1/2 INCH 7 X 10 INCHES
KEUFFEL & ESSER CO. MADE IN U.S.A.

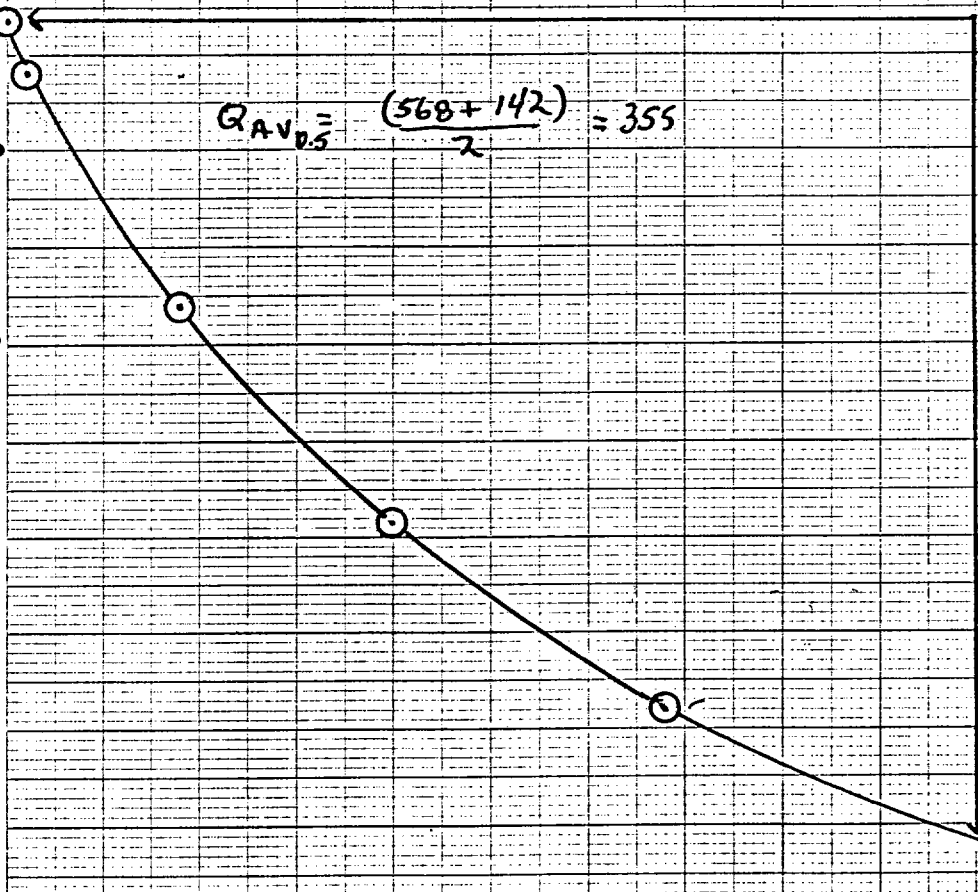
Rate, m.c.F.D

600
500
400
300
200
100

0 0.1 0.2 0.3 0.4 0.5 0.6 0.7

Time, yrs

$$Q_{AVG.5} = \frac{(568 + 142)}{2} = 355$$



SUMMARY

GALLEGOS CANYON UNIT #361
NW NE SECTION 15 T28N-R12W
SAN JUAN COUNTY, NEW MEXICO

The Gallegos Canyon Unit #361 was spudded on June 6, 1985, and drilled to a total depth of 1300' on June 26, 1985. 8 5/8" 24#/ft surface casing was set at 134' and cemented to the surface with 110 sx Class "B" cement; 4 1/2" 10.5#/ft production casing was set at 1296' and cemented to the surface with 200 sx 50-50 pozmix. The well was drilled through the Fruitland Formation.

LOGGING PROGRAM

Gamma Ray-Induction Electric- Compensated Density-Compensated Neutron logs were run to evaluate this well. Formations tops from these logs are:

Ojo Alamo - 199'
Kirtland - 302'
Fruitland - 1060'

CORES AND DST's

No cores were cut and no DST's were run on this well.

COMPLETION

Perforated the Fruitland Formation at 1183'-1188' and 1190'-1200' with 1 JSPF. Frac'd with 22,000 gals 70 Q Foam with 30,000 pounds 10-20 sand. The well was tested July 31, 1985 at a rate of 415 MCFD with a FTP of 110 psig.

CONCLUSION

Using the economic parameters outlined in the following tables, this well will payout in less than 6 months. Therefore, it is concluded the Gallegos Canyon Unit #361 well is productive in paying quantities according to the unit agreement and should be classified as a paying well.

GALLEGOS CANYON UNIT NO. 361
TABLE I - DATA AND ASSUMPTIONS
UNIT PAY ANALYSIS

1. Net pay - 15 ft.
 2. Average Porosity - 18.7%
 3. Average water saturation - 39.5%
 4. Well spacing - 160 acres
 5. Reservoir Temperature - 80°F
 6. Measured Initial BHP - 505 psig
 7. Line Pressure - 115 psig
 8. Calculated Flowing BHP - 118 psig
 9. Gas Price - \$3.64/mcf
 10. Operating Costs - \$300/month
 11. Taxes - 11.5%
 12. Discount Rate - 12.0%
 13. Royalty - 13.2%
 14. Well Cost - \$57,200
 15. Gas Gravity - 0.65
 - *16. Stabilized Test Flow Rate - 208 MCFD
 17. Calculated Stabilized Test Flowing BHP - 114 psig
 18. n (assumed) - 0.85
 - *19. Gas-in-place - 213.810 MMF
- * The stabilized test flow rate and gas-in-place were risked 50%.

GALLEGOS CANYON UNIT NO. #361
TABLE II-PRODUCTION AND RESERVES

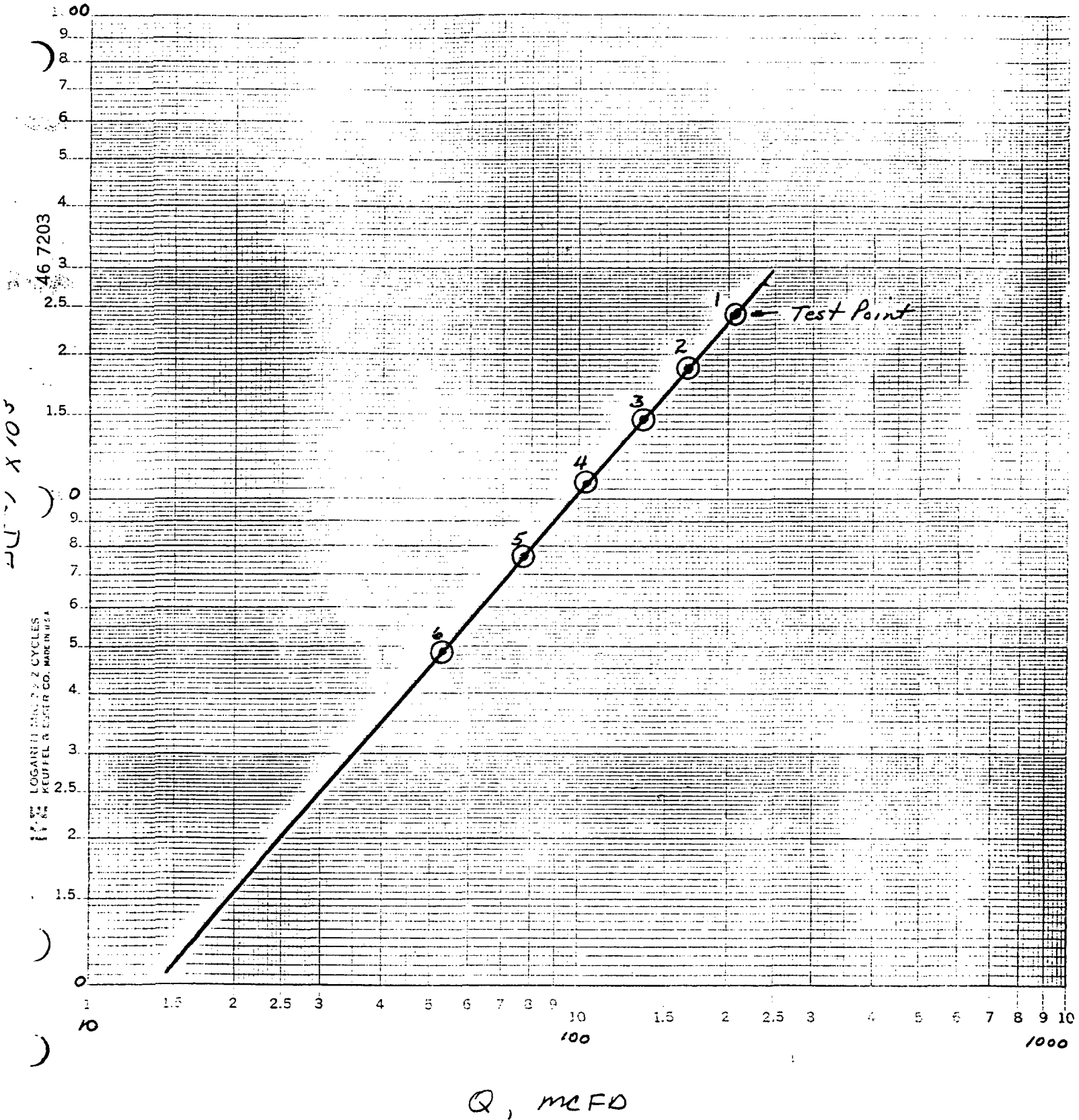
POINT	STATIC BHP	Z	$\Delta(P^2) \times 10^3$	Q, MCFD	0.8 Q, MCFD		GIP MMCF	PROD. MMCF	Cum. Prod. MMCF	TIME	
					Q, Avg MCFD	Q, Avg MCFD				Days	YRS
TEST	505	0.915	242.029	208							
1	505	0.915	241.101	205	164.0		213.810				
2	450	0.924	188.576	167	133.6	148.8	188.688	25.142	25.142	169	0.46
3	400	0.932	146.076	135	108.0	120.8	166.266	22.402	47.544	185	0.51
4	350	0.940	108.576	103	82.4	95.2	144.244	22.022	69.566	231	0.63
5	300	0.948	76.076	78	62.4	72.4	122.594	21.650	91.216	299	0.82
6	250	0.956	48.576	53	42.4	52.4	101.307	21.287	112.503	406	1.11

TABLE III -ECONOMICS

YEAR	AVG. PROD. RATE (MCFD)	YEARLY PROD. (MCF)	WORKING INTEREST				DISCOUNT FACTOR	DISCOUNT VALUE(\$)	W.I. COST PAYOUT
			YEARLY PROD. (MCF)	VALUE (\$)	LESS TAXES	LESS OPER. COST & PROFIT			
1	235	85,775	74,453	271,009	239,843	236,027	0.8929	210,748	153,548

\$57,200

Gallegos Canyon Unit #361
 $\Delta(P^2)$ vs Q



Dallegos Canyon Unit #361
Rate vs Time

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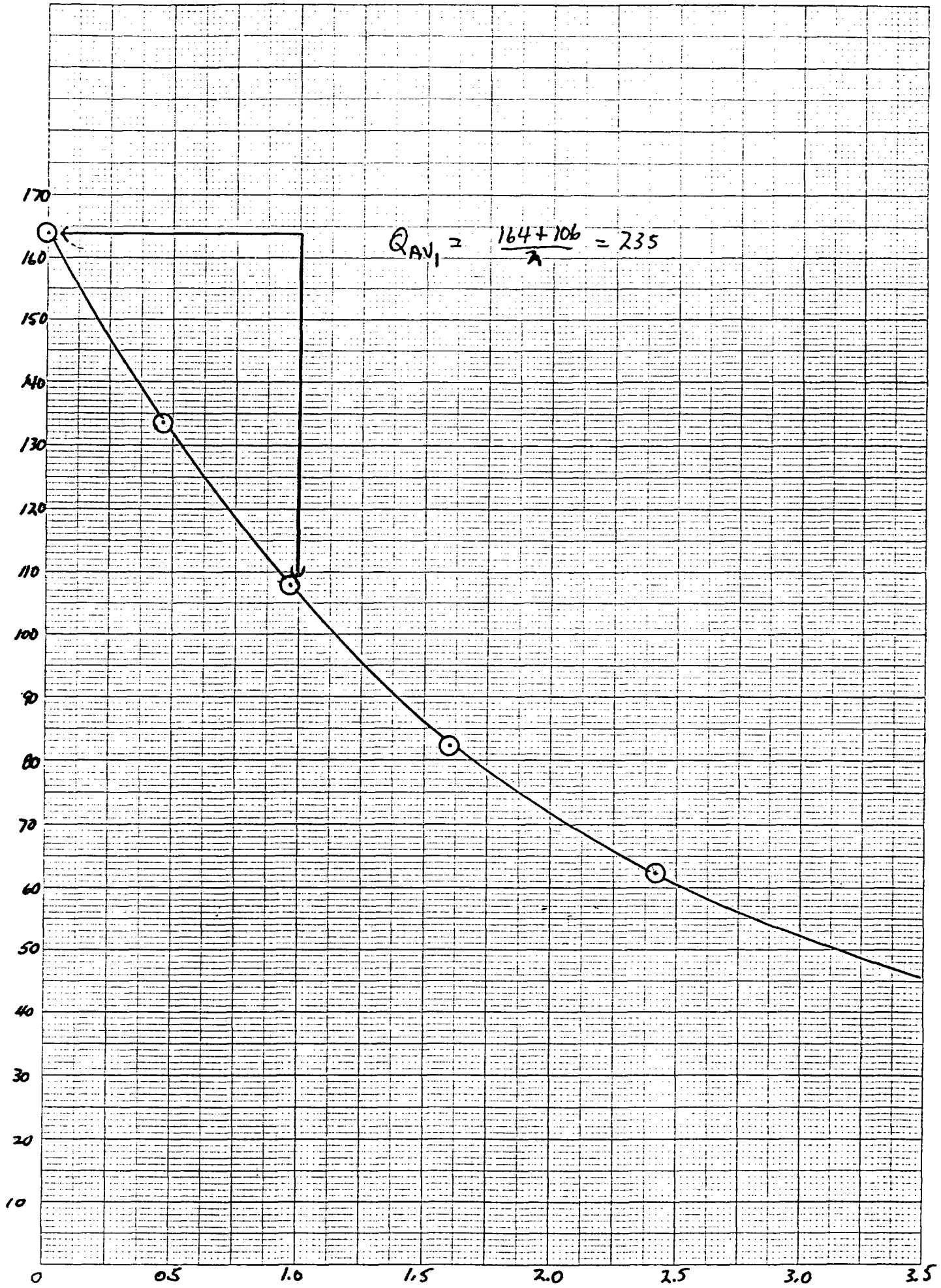
46 1320

Rate mCFD

10 X 10 TO 1/2 INCH
KEUFEL & ESSER CO. MADE IN U.S.A.

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Time, hrs