Amoco Production Company (USA)

Houston Region–West
500 Jefferson Building
Post Office Box 3092
Houston, Texas 77001

NSL — 1590
104 F
due 10/11
Oct. 11

R. G. Smith
Regional Engineering
Manager-West

September 15, 1982

File: JCA-986.51NM-3301

Case 7718

Re: Request for Administrative Approval
Unorthodox Location
Federal "CW" Com No. 1
S/2 Section 3, T-23-S, R-34-E
Lea County, New Mexico

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

Attention: Mr. Joe D. Ramey (3)

Gentlemen:

Amoco Production Company (USA) hereby makes application for administrative approval of an unorthodox gas well location under the provisions stipulated in Statewide Rule 104(F). The following is presented in support thereof:

(1) Amoco seeks approval of this unorthodox gas well location for its Federal "CW" Com No. 1 (i.e., "the subject well") which is proposed to be drilled 660' FSL x 990' FEL of Section 3, Township-23-South, Range-34-East in Lea County, New Mexico (i.e., "the subject location").

(2) The subject well is proposed to test the Morrow Formation at ± 13,600' in the Antelope Ridge Field, along with other possible gas bearing zones in the Strawn and Atoka.

(3) Amoco proposes to dedicate the S/2 of Section 3 to the subject well in order to form a 320 acre (horizontal 1/2 section) proration unit (i.e., "the subject spacing unit").

(4) The necessity of the subject location is due to geological conditions which are presented in the exhibits attached hereto.

Penn'y/Ivanian formation
Antelope Ridge Field

(5) In support of this application, it is accompanied by the following exhibits:

(a) Exhibit No. 1 is a plat depicting the ownership of all leases and the wells completed thereon offsetting the subject spacing unit.

(b) Exhibit No. 2 is a certified Form C-102 (i.e., "Well Location and Acreage Dedication Plat") showing the surveyed well location, proposed spacing unit and diversity of lease ownership within that spacing unit. Dow Chemical Company and Belco Petroleum Corporation each own an undivided 1/2 interest in the 160 acres in SW/4 of Section 3 while Amoco holds the lease on the 160 acres in the SE/4. The United States of America is the lessor.

(c) Exhibit No. 3 is a discussion of the reservoir characteristics and geological interpretation which justify the necessity of the subject unorthodox location.

(d) Exhibit No. 4 is a geological structural map contoured on top of the Strawn.

(e) Exhibit No. 5 is a geological structure map contoured on top of the Atoka and an isopach map of the Atoka productive interval.

(f) Exhibit No. 6 is a geological structure map contoured on top of the Morrow and an isopach map of the Morrow productive interval.

(g) Exhibit No. 7 is a list of all the operators of proration or spacing units offsetting the subject unit.

(6) Amoco, as Applicant, certifies that as of the date of this application, a copy of the same was forwarded by certified mail to each offset operator listed in Exhibit No. 7. Therefore, the Applicant requests that action be taken on this application if no objection is entered by said offset operators within 20 days of the receipt of the same.

In summary, Amoco Production Company (USA) as Applicant in this case hereby requests administrative approval for an unorthodox gas well location in the S/2 of Section 3, Township-23-South, Range-34-East of Lea County, New Mexico. This proposed location will facilitate the drilling of a $\pm$ 13,600' Morrow Formation test and thereby afford the Applicant the opportunity to produce its just and equitable share of hydrocarbons from the Antelope Ridge Morrow Gas Pool and/or any other

Pennsylvanian formations underlying its property. The necessity of the unorthodox location results from geological conditions which are documented in the geological discussion contained herein. It is imperative the subject well be drilled as close to the east lease line as possible in order to assure the maximum probability of encountering productive intervals in all the Pennsylvanian horizons. Therefore, approval of this application will prevent the economic loss caused by drilling unnecessary wells and is otherwise in the interest of conservation by the prevention of waste and protection of correlative rights.

If there are any questions concerning this matter please contact either Larry Sheppard (713/652-5473) or Jim Allen (713/652-5497) of our Houston Region-West Proration Group.

R. G. Smith

LWS/jlt
873/B

cc: Belco Petroleum Corporation
411 Petroleum Building
Midland, TX 79701

The Dow Chemical Company
Oil and Gas Division
1123 Wilco Building
Midland, TX 79701

AA. Mins. Corp
& W. Newkumer
??

J. C. Williamson
#1 Midland National Bank Center
Suite 890
Midland, TX 79701

State of New Mexico
Energy and Mineral Department
Oil Conservation Division
P. O. Box 1980
Hobbs, NM 88240

B.T.A. Oil Producers
104 South Pecos
Midland, TX 79701

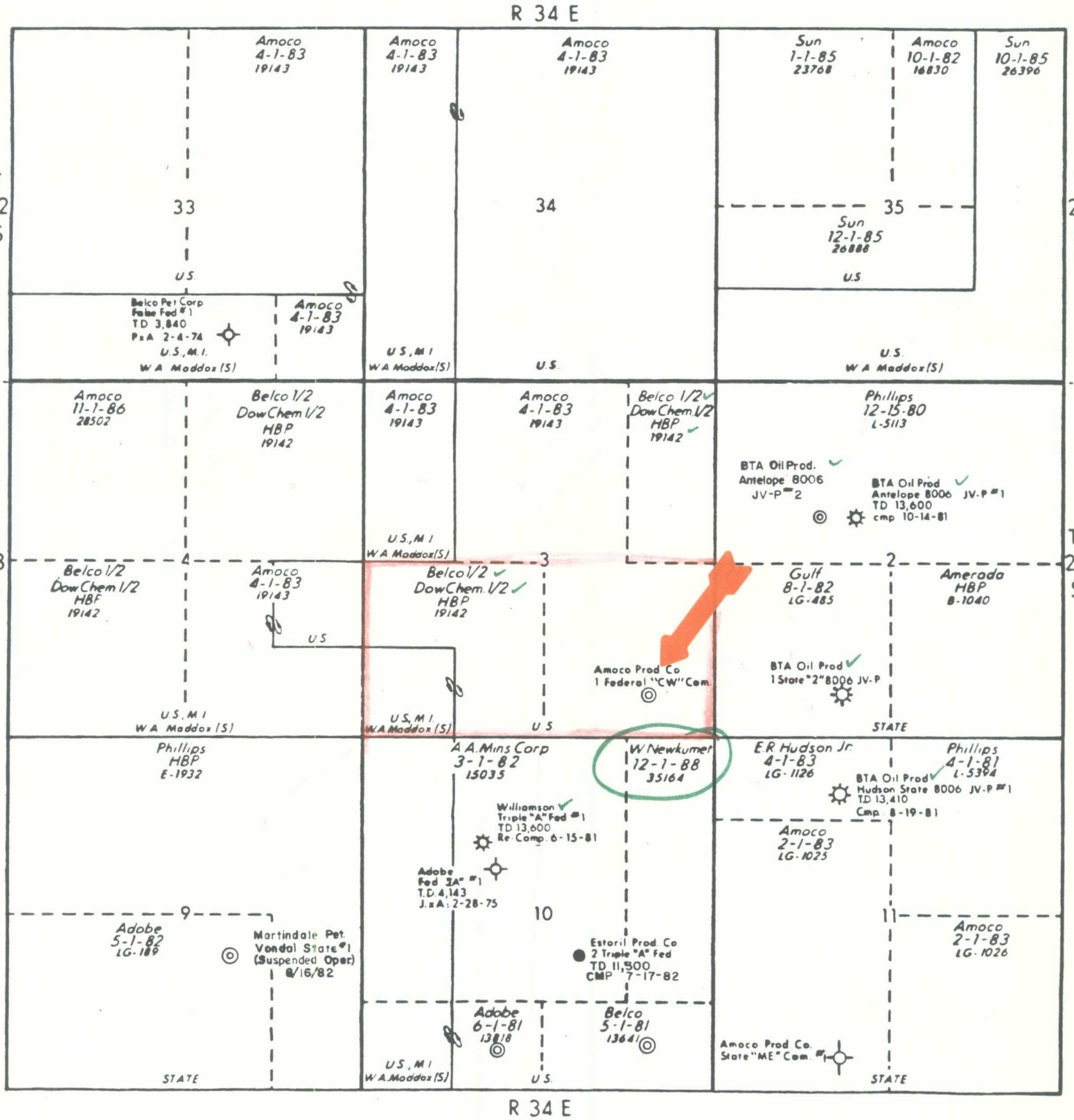
Phillips Petroleum Company
Exploration & Production Division
4001 Penbrook
Odessa, TX 78762

Mineral Management Services
505 Marquette Avenue NW #815
Albuquerque, NM 87102
Attn: Mr. Gene F. Daniel

Mineral Management Services
P. O. Drawer 1857
Roswell, NM 88201

Proposed Federal "CW" Well No.1

Lea County, New Mexico



KEY:

- PRODUCING WELL
- DRY HOLE
- PROPOSED LOCATION
- DRILLING WELL

0' 2,000' 4,000'

SCALE: 1"= 2,000'

Amoco Production Company

EXHIBIT NO. 1

NEW MEXICO OIL CONSERVATION COMMISSION

WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section.

Operator	Lease	Well No.
AMOCO PRODUCTION COMPANY	FEDERAL C.W. COM.	1

Unit Letter	Section	Township	Range	County
P	3	23 SOUTH	34 EAST	LEA

Actual Footage Location of Well:
660 feet from the SOUTH line and 990 feet from the EAST line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
3376.6	Morrow	Antelope Ridge (Morrow)	320 Acres

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

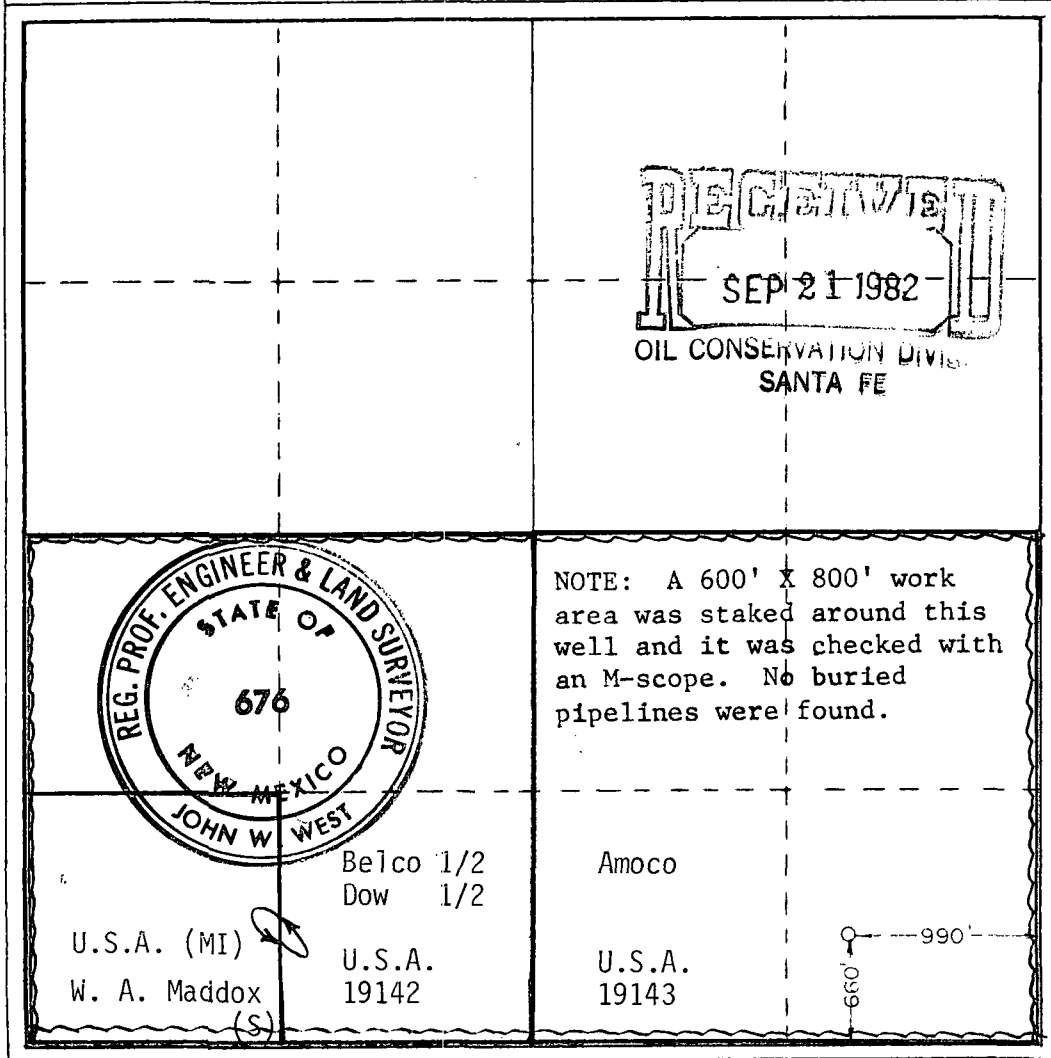
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling. etc?

☐ Yes ☐ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

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

Larry W Sheppard

Name: Larry W. Sheppard

Position: Staff Petroleum Engr.

Company: Amoco Production Co. (USA)

Date: 9-13-82

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

Date Surveyed: 8/27/82

Registered Professional Engineer and/or Land Surveyor

John W West

Certificate No. JOHN W. WEST 676
PATRICK A. ROMERO 6668
Ronald J. Eidson 3239

EXHIBIT NO. 2
Amoco Production Company

Amoco Production Company (USA)
Houston, Texas

September 15, 1982

Re: Justification of Location
Federal "CW" Com No. 1
660' FSL x 990' FEL, Section 3, T-23-S, R-34-E
Antelope Ridge Pennsylvanian Fields
Lea County, New Mexico

Memorandum To File

The structural configuration of the Permian (Wolfcamp) and Pennsylvanian formations of the Antelope Ridge Field is shown by Exhibit 5, a map contoured on top of the Atoka formation. A large, elongated anticlinal structure is depicted with the apex of the structure centered near the proposed well location. The structure shown on top of the Atoka is representative of the structural configuration obtained when contouring on the top of the Wolfcamp, Strawn, and Morrow formations.

The major producing horizons of the Antelope Ridge Field are the Morrow, Atoka, and Strawn. Production from this field is predominantly structurally controlled and discussion of each formation follows:

Morrow: The Morrow formation in this field produces from numerous sand bodies which can be correlated across the field. The best production, however, is from a thick, continuous sandstone which occurs in the Lower Morrow section. An isopach of net clean (i.e., GR less than 50 API units) sands is shown on Exhibit 6. The western-most limit of this sand body is not known. It is recommended that a well location projected to the Morrow sands be located off the structural high toward the east where Morrow sands are most likely to be encountered. A standard location would lie at the up-dip pinch-out of the sand body.

Atoka: The Atoka formation in this field produces from a well-developed, clean limestone unit known as the Bell Lake Lime. Deposition of this limestone unit appears to be largely confined again to the eastern portion of the large anticlinal feature shown on Exhibit 5, the Atoka structure contour map. For this reason, it is recommended that the proposed well be located closest to the east line to ensure penetration of this limestone unit.

Amoco Production Company

EXHIBIT NO. 3

Strawn: The Strawn formation produces from a thick, clean limestone section which appears to be continuous throughout the field. Wells to the south of the proposed well location (Secs. 15, 22) are found at approximately the same structural position as the proposed well location. For this reason, the best location for a well would be at a position closest to the east line of the section. Reference Exhibit 4, the Strawn structure map.

Conclusions

An unorthodox well location of 660' FSL x 990' FEL would ensure that the best structural position was obtained and ensure penetration of the Morrow sands as the western-most limit of the sandstone is ill-defined. This proposed well location would also ensure encountering the Atoka Bell Lake Lime which is known to be missing over the crest of the anticline and help define the northern limit of Strawn production.

Curtis Conrad

Curtis Conrad

CC/lep
1071/C