BEFORE EXAMINER CATANACH
OIL CONSERVATION DIVISION
CHEVRON EXHIBIT NO. 5
CASE NO. 10059-61

Proposed
Eunice Monument West Unit
Technical Committee Addendum
February 19, 1988

West Division
Production Department

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Introduction

This addendum is an update to the Technical Committee report completed March 17, 1987, and documents the progress to date and the current status of the unitization efforts of the proposed Eunice Monument West Unit. The purpose is to (1) supply EMWU technical committee members and working interest owners with current data to properly evaluate past recommendations and (2) recommend a two tract participation in lieu of an 18.2% participation for an expansion of the Eunice Monument South Unit.

Proposed Expansion Area

The eastern boundary of the proposed development area was previously defined as a result of Amerada Hess and Texaco declining to include the State M and the State K leases, respectively. When the proposed expansion of the Eunice Monument South Unit (EMSU) to include the EMWU was presented in preliminary reviews by Chevron, both the Bureau of Land Management and the Commissioner of Public Lands of New Mexico indicated the State K lease should be included as a logical portion of the expansion. This was previously incorporated as Recommendation No. 4 of the Eunice Monument West Unit (EMWU) Technical Committee report. With the State K lease included, the area proposed for development consists of approximately 3000 acres. There are seven properties totalling 2280 acres (76% of the total) which are federal leases, four properties totalling 400 acres (13% of the total) are state leases, and two properties totalling 320 acres (11% of the total) are fee leases. The EMWU area which includes the State K lease is shown in Attachment No. 1.

Two Tract Participation

The recommendation to negotiate toward a participation of 18.2% in an expanded unit for the combined EMSU and EMWU has been reviewed with Chevron, as EMSU operator. Chevron's legal interpretation of Section 70-7-10 of the New Mexico Statutory Unitization Act indicates the existing unit should be treated as a fixed entity. The expansion area would constitute its own separate entity, with the two areas being operated under a common plan of operation.

This would require the expanded unit to consist of two "tracts", with each "tract", the EMSU and the EMWU, having its production metered separately. Participation factors would be calculated for the expansion area

alone, with no change to the current EMSU working interest owner's participation.

The two "tract" participation is a viable alternative to the 18.2% participation previously recommended for several reasons:

(1) Separate metering will alleviate any concerns the state/federal agencies and the EMSU working owners may have regarding production and reserve equity, and

(2) Expansion is the quickest method to obtain approvals and initiate waterflood operations, as the EMSU will be a precedent for justification.

The scenarios for the expansion cases and the stand alone unit cases were again compared in order to determine the most economical option for EMWU working interest owners. These comparisons are discussed in the following sections.

Development

Secondary development of the EMWU area could begin as early as the fourth quarter of 1988, with injection to commence as early as January, 1989. This is based on Chevron's schedule for an EMSU expansion. The stand alone unit option would be achievable approximately one year later (January, 1990).

A change in the pattern development was made in the northern portion of the expansion area, in order to accommodate Amerada Hess' waterflood pattern configuration in their proposed Monument Unit. This is indicated on Attachment No. 2. Also, the inclusion of the State K lease is noted. The development will initially consist of converting 23 producing wells to injection wells, drilling 3 injection wells and two producers, and reconditioning 47 producers. An additional 12 producers should be converted to injection as leaseline injection agreements are negotiated with offset operators.

EMWU secondary reserve estimates were modified to include the State K lease. Cumulative production for each forty acre proration area is indicated in Attachment Nos. 3A and B.

Development factors were again calculated on an individual well basis, reflecting the number of injectors supporting each producer. If a producer was supported by four injection wells, the secondary

development was considered 100%. Conversely, if a producer was not immediately offset by any injection wells, it was considered to have 0% secondary development. This method also was applied to determine the value of the designated injection wells. Using this method, approximately 64% of the potential secondary reserve base will be developed without leaseline agreements. Should 100% of the leaseline agreements become effective after initial development, 98% of the reserve base will be exploited.

Secondary Potential

Evaluation of secondary potential for the expansion area essentially remains the same as previously reported. However, the magnitude of incremental production was adjusted to reflect the inclusion of the State K Lease. Timing of the incremental increase due to waterflood operations was also adjusted to reflect an additional year to implement injection. A first quarter 1988 startup was previously anticipated, with initial response in 1992. A first quarter 1989 startup is now projected for an EMSU expansion to include the study area.

For a stand alone unit, injection could be expected to commence in early 1990, with initial response expected in 1994.

Development Costs

Costs to develop the study area are based on Chevron's estimates using actual values noted in the development of the EMSU. Costs were provided for the four basic scenarios in developing the EMWU: (1) EMSU expansion with the Texaco State K lease included, (2) EMSU expansion without the State K lease, (3) EMWU stand alone with the State K lease included, and (4) EMWU stand alone without the State K lease. Summaries of each cost breakdown are given as Attachment Nos. 4A-D.

In the previous analysis, drilling of producing wells or injection wells was not anticipated. A review of wells which produce Eumont gas indicated two wells may be required to be drilled in order to provide usable wellbores for the development of an expansion or a stand alone unit. This would include Amoco's Gillully Federal Gas Com No. 7 (Unit O, Section 24) and Chevron's R.R. Bell NCT C Com No. 1 (Unit P, Section 13). It is anticipated that current production of Eumont gas from these two wells will be retained by the operators.

An injection well has been projected to be drilled as part of the development in Unit M, Section 14. An

injector in this undeveloped location will provide injection support to three producers. Based on primary production from the three producers and a secondary to primary ratio (S/P) of 0.47, secondary reserves of 51 MBO were estimated. However, it is noted in the reserve listing of Attachment No. 3B, no primary (or secondary) reserves were attributed to this undeveloped forty acre location. Upside to development of this location includes undrained primary reserves and secondary reserves.

With the inclusion of the State K lease, two wellbores may be needed. A replacement for Well No. 2 will eventually receive injection support from four injectors once leaseline agreements are obtained. The State K Well No. 1 is currently producing Eumont gas and may be retained by Texaco. As a downside case, two wells were projected to be drilled. The costs associated with drilling new wells as part of the development are shown in Attachment No. 5A-B.

It is expected that all producing wells (including wells which will remain on production pending leaseline agreements) will require remedial work. Chevron has estimated an average of $63M per workover ($24M-tangible, $39M-intangible). This average includes the assumption that 50% of the wells will require new pumping equipment. This includes both surface (i.e. pumping unit replacement) and downhole lift equipment. Total costs for remedial work is estimated to be $2,961,000 for the 47 producing wells remaining after initial development.

The conversion of 23 producing wells to injection wells as part of the initial development is projected to cost $1,656,000 ($72,000/conversion). Again, these cost estimates were based on Chevron's experience in the recent EMSU development. The tangible and intangible portion of the costs is $25,000 and $47,000, respectively, per conversion. This same cost per conversion is projected for the 12 leaseline injectors once leaseline agreements are made. The surface facilities costs are estimated at $3,524,000 and are shown in Attachment No. 6. These are preliminary cost estimates provided by Chevron, based on their assessment of the costs which will be incurred as a result of expanding the EMSU facilities. Additional surface facility costs are projected with the leaseline conversions. These costs are estimated from items 1.4 - 1.10 of the surface facility cost estimate. The average cost for surface facilities associated with each conversion was calculated by summing items 1.4 through 1.10 and dividing by the initial 23 conversions. This

average of $27,800 per conversion was applied to the later development of leaseline injectors.

In order to determine a value for the surface facilities costs of a stand alone unit, Item 1.1 of the detailed cost estimate was eliminated. This is the 8" trunkline required to transport water to the expansion area. All other costs were assumed to remain the same. For a stand alone unit, injection facilities are outlined in Attachment No. 7. Total cost is estimated to be $896,000, with the majority of the costs ($831,000) associated with the injection station. Two water supply wells and one disposal well will be required for a stand alone unit. The water supply wells are expected to cost $391,000 each to drill and complete, and the water disposal well is anticipated to cost $309,000 to drill and complete.

The EMSU currently has an adequate water supply to handle an expansion of the unit. Therefore, no additional costs associated with water source wells are expected for the expansion case.

Chevron has proposed an investment adjustment (with and without the State K lease) in the event the EMSU is expanded to include the study area. The investment adjustment is based only on facility costs incurred during the development of the EMSU which would benefit injection into the expansion area. Attachment No.8A and B indicates the investment adjustment calculations for the expansion cases. The value of the equipment installed as part of the EMSU development has been adjusted by a multiplier of 0.9652 in order to account for the depreciation of the equipment since initial injection began in November, 1986. An investment adjustment of $1,090,171 was calculated for an expansion with the State K lease included.

Economics

Economics for the development of the EMWU were rerun in order to reflect:

- 1/1/89 water injection startup for the expansion case,
- 1/1/90 startup for the stand alone case,
- the addition of the State K lease,
- revised investment costs,
- the proposed investment adjustment, and
- revised operating costs

Operating costs for each development scenario was based on the previous criteria of $1100 per month per primary producer and $2000 per month per secondary producer. A producing well was considered a secondary producer if offset by two or more injection wells.

An economic analysis was completed on each of five different production and spending profiles. The first case is the base case primary production and operating cost profile for the study area. Two cases are expansion scenarios for secondary development of the study area. One assumes leaseline injection in 1990, which is analogous to Chevron's EMSU leaseline injection development spending projection. The second case assumes no leaseline injection agreements can be negotiated. These are the best and worst case scenarios, which will bracket actual development of the expansion area. Two cases were stand alone scenarios which correspond to the two expansion cases. The stand alone cases assume a one year development delay to the anticipated EMSU expansion cases.

Economics were evaluated on a yet to spend basis as of 1-1-88. The profiles were analazed using Amoco's economic program with a constant oil price of $18/BO and the gas price held at $1.50/MCF. The program adds 20% to all investments and expenses as an overhead charge. Operating costs are escalated by 5.5% per year.

Incremental discounted cash flows for each project scenario are summarized in Attachment No. 9. The incremental values were determined by subtracting the base case continued primary operations discounted cash flows from the discounted cash flows of each development scenario. For comparison, a discount factor of 10% will be used on each incremental case.

The production profiles and operating costs for the continued primary operations of all leases in the EMWU study area are shown in Attachment No. 10.

Attachment No. 11A andB are production and spending profiles for the expansion and stand alone cases which include negotiating leaseline injection agreements within two years after initial injection. A comparison of the incremental cash flows for each indicates the expansion case is more economic. Attachment No. 12A and B are production and spending profiles for the expansion and stand alone cases which assume no leaseline agreements can be made. Again, the expansion case is more economic.

Texaco State K Lease

When the original study area was defined, both Texaco and Amerada Hess declined to include their State K and State M leases, respectively. Amerada Hess indicated their lease would be included in their proposed Monument Unit. It is apparent Texaco would obtain a low participation (approximately 0.11%) in the EMWU development by contributing the State K lease, based on the 1982 EMSU participation formula. Cumulative production for the two wells is 306.1 MBO, with last production from the Eunice Monument (G-SA) before 1970.

The inclusion of the Texaco lease will initially allow two additional conversions of producing wells to injection wells. The state and federal agencies have reviewed the preliminary proposal to expand the EMSU and have indicated that the State K lease should be included in any development plans. The inclusion of the State K lease has been incorporated in the economic analysis of the EMWU development.

As a group, the EMWU working interest owners could attempt to acquire rights in the State K lease, as previously recommended. Costs and benefits would be proportioned to each WIO's participation. Two alternatives are available in order to determine a value for the lease:

(1) Attempt to acquire all producing rights, including the current producing interval (Eumont Gas), or

(2) Attempt to acquire only rights to the unitized interval.

Current production for the lease is from the Eumont Yates, Seven Rivers, Queen (Pro Gas) Field in Well No. 1 (Unit K, Section 13). Average production for October, 1987 was 140 MCFD. The advantage of acquiring the existing wellbores is possibly reducing the number of wells required to be drilled in the development of the lease acreage. It is assumed that a replacement for Well No. 2 will be necessary; however, Well No. 1 could possibly be recompleted to the Eunice Monument (G-SA). This would reduce the cost of development of the forty acre tract by the drilling cost of $225,000 less the cost to recomplete. No data is available to accurately determine recompletion cost. This estimate will vary depending on the plugging procedure and the condition of the wellbore at that time.

The second alternative is to acquire only rights as defined by the unitized interval. This option will

require drilling two wells for development. This assumption was used in developing the economic analysis of each development scenario (expansion or stand alone). This alternative would be the most beneficial for unit development for several reasons:

(1) EMWU would not acquire reserves outside the unitized interval,

(2) legal complications regarding royalties if gas reserves are shut-in to allow waterflood development, and

(3) cost to abandon gas zone and recomplete to unitized zone is unknown, which may equal cost to drill a new producer.

In order to determine a value for the State K lease, the lease was evaluated on a stand alone basis. It was projected the conversions from producers to injectors of wells in Unit M, Section 13 and Unit C, Section 24 would be completed, and a replacement for the State K Well No. 2 would be drilled. No development was associated with Well No. 1. The development is shown in Attachment No. 13. Secondary reserves associated with this development are estimated to be 95 MBO, using primary reserve values in Attachment No. 3B and an S/P of 0.47. The production profile for this evaluation is shown in Attachment No. 14. An economic analysis using costs previously noted for unit development and assuming the same economic parameters was completed. Using a 10% discount rate, as in the earlier economic analysis, the State K lease would have a value of $16,000. The negotiations toward acquiring rights in the State K lease should consider the value the lease would have if developed on a stand alone basis.

ATTACHMENTS

1) Base Map

2) Development Map

3A) Percentage of Reserve Base Developed (Map)

3B) Percentage of Reserve Base Developed (Table)

4A-D) Development Costs

5A) Drilling Well Costs (With State K Lease)

5B) Drilling Well Costs (Without State K Lease)

6) Surface Facility Cost Estimate

7) Injection Facility Cost Estimate

8A) Investment Adjustment Calculation (With State K Lease)

8B) Investment Adjustment Calculation (Without State K Lease)

9) Economic Summary - Incremental Discounted Cash Flows

10) Study Area Base Case Production and Spending Profile

11A) Production & Spending Profile - Expansion Case - 1990 Leaseline Injection

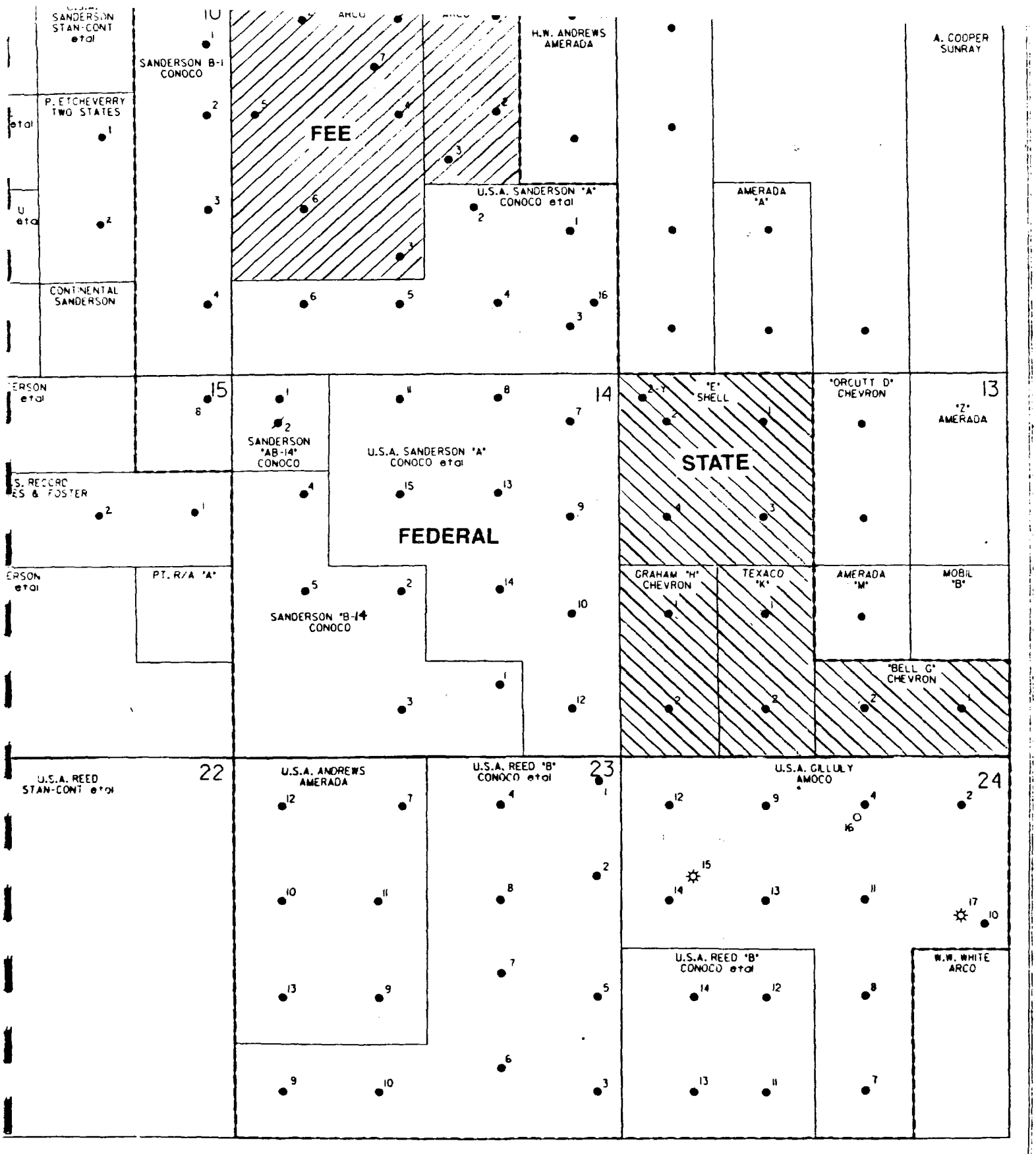
11B) Production & Spending Profile - Stand Alone Case - 1991 Leaseline Injection

12A) Production & Spending Profile - Expansion Case - No Leaseline Injection

12B) Production & Spending Profile - Stand Alone Case - No Leaseline Injection

13) State K Lease Development (Map)

14) State K Lease Production Profile

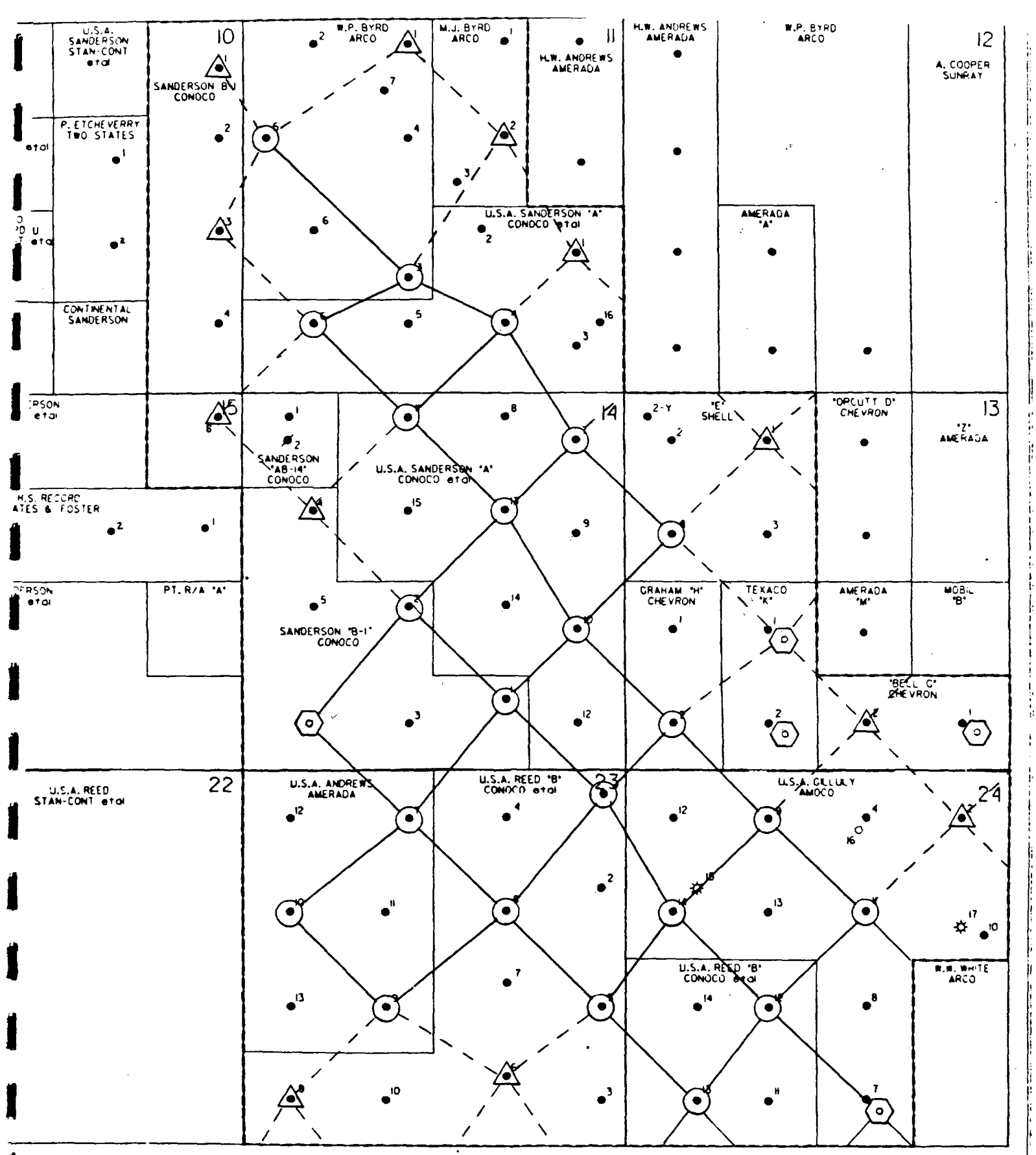


Legend

Amoco Production Company
EUNICE MONUMENT WEST UNIT
LEA COUNTY, N.M.

0 500 1000 1500 2000
graphic scale

ATTACHMENT NO. 1



CONVERT FROM PROD TO INJECTION

LEASELINE CONVERSION

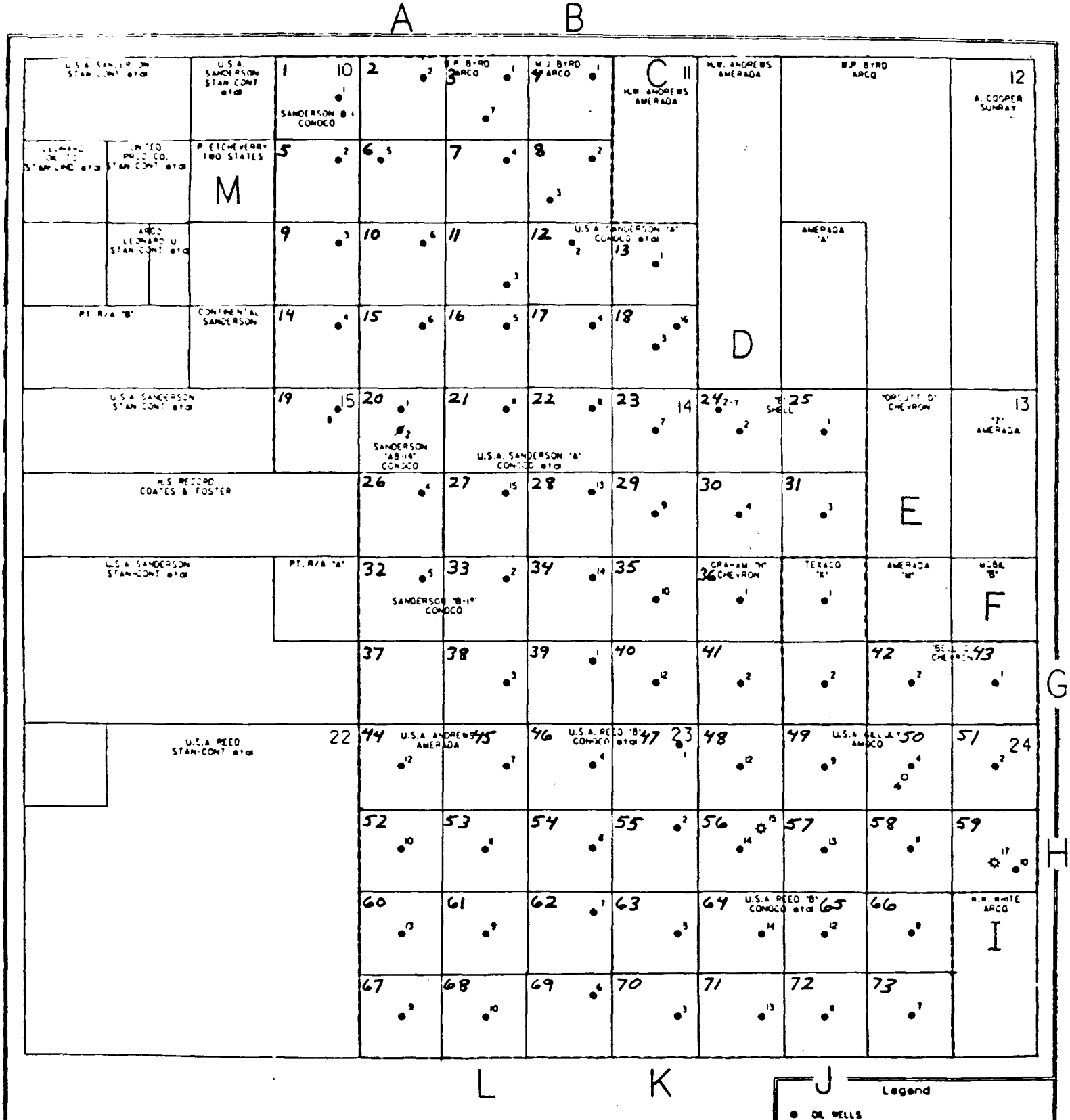
DRILL

Legend

Amoco Production Company
EUNICE MONUMENT WEST UNIT
LEA COUNTY, N.M.

0 500 1000 1500 2000
graphic scale

ATTACHMENT NO.2



ATTACHMENT NO.3A

EUNICE MONUMENT WEST UNIT
INITIALLY AND DELAYED DEVELOPED SECONDARY RESERVES
BASED ON ACTUAL PORTION OF AREA DEVELOPED
RATIOED TO CUMULATIVE OIL PRODUCTION AS OF JUNE 30, 1986
INCLUDES TEXACO STATE K LEASE

40 ACRE AREA	CUM OIL	INITIAL FACTOR	FULL DEV FACTOR	DELAYED FACTOR	INITIALLY DEV SECONDARY RESERVES	FULLY DEV SECONDARY RESERVES	DELAYED DEVELOPED SECONDARY RESERVES
1	276,085	0.000	0.500	0.500	0	138043	138043
2	508,419	0.250	1.000	0.750	127105	508419	381314
3	613,819	0.000	0.750	0.750	0	460364	460364
4	581,343	0.000	1.000	1.000	0	581343	581343
5	231,977	0.250	1.000	0.750	57994	231977	173983
6	409,749	1.000	1.000	0.000	409749	409749	0
7	611,117	0.500	1.000	0.500	305559	611117	305559
8	506,001	0.000	0.750	0.750	0	379501	379501
9	226,047	0.000	0.750	0.750	0	169535	169535
10	393,571	0.750	1.000	0.250	295178	393571	98393
11	545,770	1.000	1.000	0.000	545770	545770	0
12	569,244	0.500	1.000	0.500	284622	569244	284622
13	616,021	0.000	0.500	0.500	0	308011	308011
14	189,734	0.250	0.750	0.500	47434	142301	94867
15	427,763	1.000	1.000	0.000	427763	427763	0
16	417,679	1.000	1.000	0.000	417679	417679	0
17	426,318	1.000	1.000	0.000	426318	426318	0
18	441,095	0.500	1.000	0.500	220548	441095	220548
19	79,154	0.000	0.500	0.500	0	39577	39577
20	377,183	0.500	1.000	0.500	188592	377183	188592
21	568,895	1.000	1.000	0.000	568895	568895	0
22	645,520	1.000	1.000	0.000	645520	645520	0
23	459,699	1.000	1.000	0.000	459699	459699	0
24	288,194	0.500	1.000	0.500	144097	288194	144097
25	350,842	0.000	0.500	0.500	0	175421	175421
26	257,390	0.000	0.750	0.750	0	193043	193043
27	265,234	0.750	1.000	0.250	198926	265234	66309
28	356,155	1.000	1.000	0.000	356155	356155	0
29	376,913	1.000	1.000	0.000	376913	376913	0
30	590,122	1.000	1.000	0.000	590122	590122	0
31	150,097	0.250	1.000	0.750	37524	150097	112573
32	200,652	0.500	0.750	0.250	100326	150489	50163
33	305,437	1.000	1.000	0.000	305437	305437	0
34	347,135	1.000	1.000	0.000	347135	347135	0
35	405,510	1.000	1.000	0.000	405510	405510	0
36	401,746	0.750	1.000	0.250	301310	401746	100437
37	0	0.000	0.000	0.000	0	0	0
38	210,250	1.000	1.000	0.000	210250	210250	0
39	438,359	1.000	1.000	0.000	438359	438359	0
40	294,238	1.000	1.000	0.000	294238	294238	0
41	257,780	1.000	1.000	0.000	257780	257780	0
42	325,027	0.000	0.750	0.750	0	243770	243770
43	435,921	0.000	1.000	1.000	0	435921	435921
44	19,845	0.750	0.750	0.000	14884	14884	0
45	240,338	1.000	1.000	0.000	240338	240338	0
46	375,777	1.000	1.000	0.000	375777	375777	0
47	450,951	1.000	1.000	0.000	450951	450951	0
48	459,673	1.000	1.000	0.000	459673	459673	0

ATTACHMENT NO.3B

49	242,824	1.000	1.000	0.000	242824	242824	0
50	56,486	0.500	1.000	0.500	28243	56486	28243
51	897,169	0.000	0.750	0.750	0	672877	672877
52	24,492	0.750	0.750	0.000	18369	18369	0
53	167,783	1.000	1.000	0.000	167783	167783	0
54	352,036	1.000	1.000	0.000	352036	352036	0
55	385,815	1.000	1.000	0.000	385815	385815	0
56	319,035	1.000	1.000	0.000	319035	319035	0
57	368,655	1.000	1.000	0.000	368655	368655	0
58	239,606	1.000	1.000	0.000	239606	239606	0
59	482,385	0.250	1.000	0.750	120596	482385	361789
60	19,646	0.500	0.750	0.250	9823	14735	4912
61	56,151	1.000	1.000	0.000	56151	56151	0
62	330,359	0.750	1.000	0.250	247769	330359	82590
63	259,143	1.000	1.000	0.000	259143	259143	0
64	217,377	1.000	1.000	0.000	217377	217377	0
65	234,255	1.000	1.000	0.000	234255	234255	0
66	459,408	0.750	1.000	0.250	344556	459408	114852
67	19,875	0.000	0.500	0.500	0	9938	9938
68	46,285	0.250	1.000	0.750	11571	46285	34714
69	134,440	0.000	0.750	0.750	0	100830	100830
70	241,405	0.500	1.000	0.500	120703	241405	120703
71	239,191	0.750	0.750	0.000	179393	179393	0
72	367,552	1.000	1.000	0.000	367552	367552	0
73	208,605	0.500	0.500	0.000	104303	104303	0
K1	151,289	0.000	0.750	0.750	0	113467	113467
K2	154,825	0.500	1.000	0.500	77413	154825	77413
TOTAL	24,601,881				15807098	22875405	7068307
PERCENT	100				64.25158	92.98234	28.73076

A(2)	707,826	0.000	0.250	0.250	0	176957	176957
B(4)	695,786	0.000	0.250	0.250	0	173947	173947
C(4)	720,983	0.000	0.250	0.250	0	180246	180246
D(18,24)	145,429	0.000	0.500	0.500	0	72715	72715
E(31)	398,534	0.000	0.250	0.250	0	99634	99634
F(43)	575,220	0.000	0.250	0.250	0	143805	143805
G(43)	655,308	0.000	0.250	0.250	0	163827	163827
H(59)	199,633	0.000	0.250	0.250	0	49908	49908
I(59,66)	147,910	0.000	0.500	0.500	0	73955	73955
J(72)	272,608	0.000	0.250	0.250	0	68152	68152
K(70)	244,696	0.000	0.250	0.250	0	61174	61174
L(68)	101,922	0.000	0.250	0.250	0	25481	25481
M(5)	79,753	0.000	0.250	0.250	0	19938	19938
	4,945,608						

TOTAL RESERVES DEVELOPED	15807098	24185141	8378043
PERCENTAGE OF AREA RESERVES DEVELOPED	64.25158	98.30607	34.05448

EMSU EXPANSION CASE W/ LEASELINE INJECTION IN 1990

W/ STATE K LEASE

DRILL AND COMPLETE 2 PRODUCERS	$ 350,000
DRILL AND COMPLETE 3 INJECTORS	515,000
WORKOVER 47 PRODUCERS	2,961,000
CONVERT 23 PRODUCERS TO INJECTION	1,656,000
SURFACE FACILITIES	3,524,000
INVESTMENT ADJUSTMENT	1,090,171
INJECTION FACILITIES	-
DRILL AND COMPLETE WTR SOURCE WELLS	-
DRILL AND COMPLETE SWD WELL	-
	$10,096,171

1990

CONVERT 12 PRODUCERS TO INJECTION	$ 864,000
SURFACE FACILITIES	333,600
	$1,197,600

TOTAL	$11,293,771

ATTACHMENT NO.4A

EMSU EXPANSION CASE W/ LEASELINE INJECTION IN 1990

W/O STATE K LEASE

DRILL AND COMPLETE 1 PRODUCER	$ 125,000
DRILL AND COMPLETE 2 INJECTORS	310,000
WORKOVER 49 PRODUCERS	3,087,000
CONVERT 21 PRODUCERS TO INJECTION	1,512,000
SURFACE FACILITIES	3,524,000
INVESTMENT ADJUSTMENT	1,018,893
INJECTION FACILITIES	-
DRILL AND COMPLETE WTR SOURCE WELLS	-
DRILL AND COMPLETE SWD WELL	-
	$9,576,893

1990

CONVERT 13 PRODUCERS TO INJECTION	$ 936,000
SURFACE FACILITIES	361,400
	$1,297,400

TOTAL	$10,874,293

ATTACHMENT NO.4B

STAND ALONE CASE W/ LEASELINE INJECTION IN 1991

W/ STATE K LEASE

DRILL AND COMPLETE 2 PRODUCERS	$ 350,000
DRILL AND COMPLETE 3 INJECTORS	515,000
WORKOVER 47 PRODUCERS	2,961,000
CONVERT 23 PRODUCERS TO INJECTION	1,656,000
SURFACE FACILITIES	3,315,000
INVESTMENT ADJUSTMENT	-
INJECTION FACILITIES	896,000
DRILL AND COMPLETE 2 WTR SOURCE WELLS	782,000
DRILL AND COMPLETE 1 SWD WELL	309,000
	$10,784,000

1991

CONVERT 12 PRODUCERS TO INJECTION	$ 864,000
SURFACE FACILITIES	333,600
	$1,197,600

TOTAL	$11,981,600

STAND ALONE CASE W/ LEASELINE INJECTION IN 1991

W/O STATE K LEASE

DRILL AND COMPLETE 1 PRODUCER	$ 125,000
DRILL AND COMPLETE 2 INJECTORS	310,000
WORKOVER 49 PRODUCERS	3,087,000
CONVERT 21 PRODUCERS TO INJECTION	1,512,000
SURFACE FACILITIES	3,315,000
INVESTMENT ADJUSTMENT	-
INJECTION FACILITIES	896,000
DRILL AND COMPLETE 2 WTR SOURCE WELLS	782,000
DRILL AND COMPLETE 1 SWD WELL	309,000
	$10,336,000

1991

CONVERT 13 PRODUCERS TO INJECTION	$ 936,000
SURFACE FACILITIES	361,400
	$1,297,400

TOTAL	$11,633,400

ATTACHMENT NO.4[

WELLS TO DRILL FOR DEVELOPMENT OF EMWU
(WITH TEXACO STATE "K" LEASE)

PRODUCING WELLS	WELLBORE PENALTY	TANGIBLE COSTS	INTANGIBLE COSTS	TOTAL COSTS
R. R. Bell NCT G Com No. 1 (Unit P, Section 13)	Yes	$ 63,750	$ 61,250	$125,000
State 'K' No. 2 (Unit N, Section 13)	No	110,000	115,000	225,000
SUBTOTAL		$173,750	$176,250	$350,000
INJECTION WELLS				
Gillully Fed Gas Com No. 7 (Unit O, Section 24)	Yes	$ 66,600	$ 38,400	$105,000
Sanderson B-14 (Unit M, Section 23)	No	75,000	130,000	205,000
State 'K' No. 1 (Unit K, Section 13)	No	75,000	130,000	205,000
SUBTOTAL		$216,600	$298,400	$515,000
TOTAL		$390,350	$474,650	$865,000

ATTACHMENT NO.5A

WELLS TO DRILL FOR DEVELOPMENT OF EMWU
(WITHOUT TEXACO STATE "K" LEASE)

PRODUCING WELLS	WELLBORE PENALTY	TANGIBLE COSTS	INTANGIBLE COSTS	TOTAL COSTS
R. R. Bell NCT G Com No. 1 (Unit P, Section 13)	Yes	$ 63,750	$ 61,250	$125,000
INJECTION WELLS				
Gillully Fed Gas Com No. 7 (Unit O, Section 24)	Yes	$ 66,600	$ 38,400	$105,000
Sanderson B-14 (Unit M, Section 23)	No	75,000	130,000	205,000
TOTAL		$205,350	$229,650	$435,000

ATTACHMENT NO.5B

EMWU SURFACE FACILITY
COST ESTIMATE

	CONTRACT ($M)	MATERIAL ($M)	TOTAL ($M)
1.0 Injection Distribution System			
1.1 8" Trunkline - 11,000'	55	154	209
1.2 6" Trunkline - 9,000'	38	110	148
1.3 4" Injection lines - 8,000'	16	80	96
1.4 3" Injection lines - 4,000'	7	24	31
1.5 2" Injection lines -50,000'	80	163	243
1.6 Meter runs, manifolds	45	127	172
1.7 Misc. valves, fittings	10	30	40
1.8 Wellhead hookups	14	42	56
1.9 RTUs	6	42	48
1.10 ROW, damages	50		50
SUBTOTAL 1.0	321	772	1093
2.0 Satellites(2), Central Battery			
2.1 Two satellite batteries	100	300	400
2.2 Central battery	100	400	500
2.3 Damages	10		10
SUBTOTAL 2.0	210	700	910
3.0 Production Gathering System			
3.1 2" Flowlines - 168,000'	235	210	445
3.2 6" Gathering lines - 11,000'	20	50	70
3.3 Misc. valves, fittings	5	10	15
3.4 Well hookups	15	40	55
3.5 ROW, damages	80		80
SUBTOTAL 3.0	355	310	665
4.0 Electrical Distribution System			
4.1 Primary and secondary	80	165	245
4.2 Motor services	40	90	130
4.3 Transformers, reclosers		55	55
4.4 ROW, damages	36		36
SUBTOTAL 4.0	156	310	466
5.0 Miscellaneous			
5.1 Roads	250		250
5.2 Abandonment of facilities	125		125
5.3 Remove old EDs	15		15
SUBTOTAL 5.0	390		390
TOTAL	1,432	2,092	3,524

ATTACHMENT NO.6

EMWU INJECTION FACILITIES
(STAND ALONE)

1.0	Injection Plant	$831,000
2.0	Water Supply Wells (Surface facilities)	55,000
3.0	Water Disposal Well (Surface facilities)	10,000
	TOTAL	$896,000

ATTACHMENT NO.7

EMSU INJECTION FACILITIES SUMMARY
CALCULATION OF INVESTMENT ADJUSTMENT
(WITH TEXACO STATE K LEASE)

ITEM	EMSU COST	DEPRICIATED COST	* FACTOR	EMWU COST
Main trunk lines	$ 328,098	$ 316,680	25/56	$141,375
Water injection plant	2,229,298	2,151,718	25/159	338,320
Water supply wells (Surface facilities)	403,974	389,916	25/159	61,308
Water disposal well (Surface facilities)	20,591	19,874	25/159	3,125
Water source wells (Drill,complete,equip)	3,511,044	3,388,860	25/159	532,840
Water disposal well	87,000	83,972	25/159	13,203
INVESTMENT ADJUSTMENT				$1,090,171

* Number of WIWs in expansion area / total number of WIWs served

ATTACHMENT NO. 8A

EMSU INJECTION FACILITIES SUMMARY
CALCULATION OF INVESTMENT ADJUSTMENT
(WITHOUT TEXACO STATE K LEASE)

ITEM	EMSU COST	DEPRICIATED COST	* FACTOR	EMWU COST
Main trunk lines	$ 328,098	$ 316,680	23/54	$134,882
Water injection plant	2,229,298	2,151,718	23/157	315,220
Water supply wells (Surface facilities)	403,974	389,916	23/157	57,121
Water disposal well (Surface facilities)	20,591	19,874	23/157	2,911
Water source wells (Drill,complete,equip)	3,511,044	3,388,860	23/157	496,457
Water disposal well	87,000	83,972	23/157	12,302
INVESTMENT ADJUSTMENT				$1,018,893

* Number of WIWs in expansion area / total number of WIWs served

ATTACHMENT NO.8B

PROPOSED EUNICE MONUMENT UNIT
ECONOMIC EVALUATION
INCREMENTAL DISCOUNTED CASH FLOWS
AT VARIOUS DISCOUNT RATES
WITH THE STATE K LEASE

SCENARIO	INJECTION AGREEMENTS	INCREMENTAL CASH FLOW AT VARIOUS DISCOUNT RATES ($MM)				
		PV(0)	PV(8)	PV(10)	PV(13)	PV(15)
EMSU EXPANSION	1990	91.203	26.501	18.671	10.191	6.120
EMWU STAND ALONE	1991	88.046	22.854	15.455	7.695	4.106
EMWU EXPANSION	NONE	51.277	13.075	8.365	3.236	0.763
EMWU STAND ALONE	NONE	48.734	10.787	6.427	1.853	-0.256

ATTACHMENT N

STUDY AREA BASE CASE
CONTINUED PRIMARY OPERATIONS
SPENDING AND PRODUCTION PROFILE

YEAR	PRIMARY BOPD	PRIMARY GOR	*TOTAL MCFD	OP COSTS $M/YEAR
1988	526	3700	1946	673
1989	499	3700	1845	673
1990	473	3700	1749	673
1991	448	3700	1658	673
1992	425	3700	1572	673
1993	403	3700	1490	673
1994	382	3700	1413	673
1995	362	3700	1340	673
1996	343	3700	1270	673
1997	325	3700	1204	673
1998	309	3700	1142	673
1999	293	3700	1083	673
2000	277	3700	1026	673
2001	263	3700	973	673
2002	249	3700	923	673
2003	236	3700	875	673
2004	224	3700	829	673
2005	212	3700	786	673
2006	201	3700	745	673
2007	191	3700	707	673
2008	181	3700	670	673
2009	172	3700	635	673
2010	163	3700	602	673
2011	154	3700	571	673
2012	146	3700	541	673
2013	139	3700	513	673
2014	132	3700	487	673
2015	125	3700	461	673
2016	118	3700	437	673
2017	112	3700	415	673
2018	106	3700	393	673
2019	101	3700	373	673

ATTACHMENT NO.10

EMWU ANALOGY TO CHEVRON ESTIMATE
ASSUMING LEASELINE INJECTION IN 1990
ANALOGOUS TO CHEVRON ASSUMPTION
WITH STATE K

YEAR	TOTAL PRIMARY BOPD	98% PRIMARY INITIALLY DEVELOPED	2% PRIMARY NEVER DEVELOPED	INCREM. BOPD	PRIMARY GOR	DEVELOPED GOR	TOTAL BOPD	TOTAL MCFD	AVERAGE WEIGHTED GOR	OP COSTS $M/YEAR	DEVELOPMENT COSTS TANGIBLE $M/YEAR	DEVELOPMENT COSTS INTANGIBLE $M/YEAR
1988	526	515	11	0	3700	3700	526	1946	3700	781	4,185	4,821
1989	499	489	10	0	3700	3700	499	1845	3700	888	0	0
1990	473	463	9	0	3700	3700	473	1749	3700	888	523	675
1991	448	439	9	0	3700	3000	448	1351	3014	888	0	0
1992	425	416	8	0	3700	2600	425	1114	2622	888	0	0
1993	403	395	8	6	3700	2050	408	850	2083	888	0	0
1994	382	374	8	135	3700	1700	517	894	1730	888	0	0
1995	362	355	7	641	3700	1400	1003	1421	1417	888	0	0
1996	343	336	7	1436	3700	1100	1779	1975	1110	888	0	0
1997	325	319	7	3075	3700	900	3400	3079	905	888	0	0
1998	309	302	6	3845	3700	730	4154	3050	734	888	0	0
1999	293	287	6	3855	3700	610	4148	2548	614	888	0	0
2000	277	272	6	3864	3700	500	4141	2088	504	888	0	0
2001	263	258	5	3281	3700	440	3544	1577	445	888	0	0
2002	249	244	5	2783	3700	440	3032	1350	445	888	0	0
2003	236	232	5	2359	3700	440	2595	1157	446	888	0	0
2004	224	220	4	1997	3700	440	2221	992	447	888	0	0
2005	212	208	4	1688	3700	440	1900	850	447	888	0	0
2006	201	197	4	1425	3700	440	1626	729	448	888	0	0
2007	191	187	4	1201	3700	440	1392	625	449	888	0	0
2008	181	177	4	1009	3700	440	1190	535	450	888	0	0
2009	172	168	3	847	3700	440	1019	459	451	888	0	0
2010	163	160	3	708	3700	440	871	394	452	888	0	0
2011	154	151	3	591	3700	440	745	338	454	888	0	0
2012	146	143	3	491	3700	440	637	290	455	888	0	0
2013	139	136	3	406	3700	440	545	249	457	888	0	0
2014	132	129	3	334	3700	440	466	213	458	888	0	0
2015	125	122	2	273	3700	440	398	183	460	888	0	0
2016	118	116	2	221	3700	440	339	157	463	888	0	0
2017	112	110	2	177	3700	440	289	135	465	888	0	0
2018	106	104	2	140	3700	440	246	115	468	888	0	0
2019	101	99	2	109	3700	440	210	99	471	888	0	0

ATTACHMENT NO.11

STAND ALONE CASE ONE YEAR DELAY
ASSUMING LEASELINE INJECTION IN 1991
ANALOGOUS TO CHEVRON ASSUMPTION
WITH STATE K

YEAR	TOTAL PRIMARY BOPD	98% PRIMARY INITIALLY DEVELOPED	2% PRIMARY NEVER DEVELOPED	INCREM. BOPD	PRIMARY GOR	DEVELOPED GOR	TOTAL BOPD	TOTAL MCFD	AVERAGE WEIGHTED GOR	OP COSTS $M/YEAR	DEVELOPMENT COSTS TANGIBLE $M/YEAR	DEVELOPMENT COSTS INTANGIBLE $M/YEAR
1988	526	515	11	0	3700	3700	526	1946	3700	673	0	0
1989	499	489	10	0	3700	3700	499	1845	3700	781	4,959	5,825
1990	473	463	9	0	3700	3700	473	1749	3700	888	0	0
1991	448	439	9	0	3700	3000	448	1351	3014	888	523	675
1992	425	416	8	0	3700	2600	425	1114	2622	888	0	0
1993	403	395	8	0	3700	2050	403	839	2083	888	0	0
1994	382	374	8	6	3700	1700	387	674	1739	888	0	0
1995	362	355	7	135	3700	1400	497	713	1434	888	0	0
1996	343	336	7	641	3700	1100	984	1101	1118	888	0	0
1997	325	319	7	1436	3700	900	1761	1604	910	888	0	0
1998	309	302	6	3075	3700	730	3384	2488	735	888	0	0
1999	293	287	6	3845	3700	610	4138	2542	614	888	0	0
2000	277	272	6	3855	3700	500	4132	2084	504	888	0	0
2001	263	258	5	3864	3700	440	4127	1833	444	888	0	0
2002	249	244	5	3281	3700	440	3530	1570	445	888	0	0
2003	236	232	5	2783	3700	440	3019	1344	445	888	0	0
2004	224	220	4	2359	3700	440	2583	1151	446	888	0	0
2005	212	208	4	1997	3700	440	2209	986	446	888	0	0
2006	201	197	4	1688	3700	440	1889	844	447	888	0	0
2007	191	187	4	1425	3700	440	1616	723	448	888	0	0
2008	181	177	4	1201	3700	440	1382	620	449	888	0	0
2009	172	168	3	1009	3700	440	1181	531	449	888	0	0
2010	163	160	3	847	3700	440	1010	455	451	888	0	0
2011	154	151	3	708	3700	440	862	389	452	888	0	0
2012	146	143	3	591	3700	440	737	334	453	888	0	0
2013	139	136	3	491	3700	440	630	286	454	888	0	0
2014	132	129	3	406	3700	440	538	245	456	888	0	0
2015	125	122	2	334	3700	440	459	210	458	888	0	0
2016	118	116	2	273	3700	440	391	180	460	888	0	0
2017	112	110	2	221	3700	440	333	154	462	888	0	0
2018	106	104	2	177	3700	440	283	132	464	888	0	0
2019	101	99	2	140	3700	440	241	113	467	888	0	0

ATTACHMENT NO.11

ANALOGY TO CHEVRON ESTIMATE
ASSUMING NO LEASELINE INJECTION AGREEMENTS
PESSIMISTIC CASE
WITH STATE K

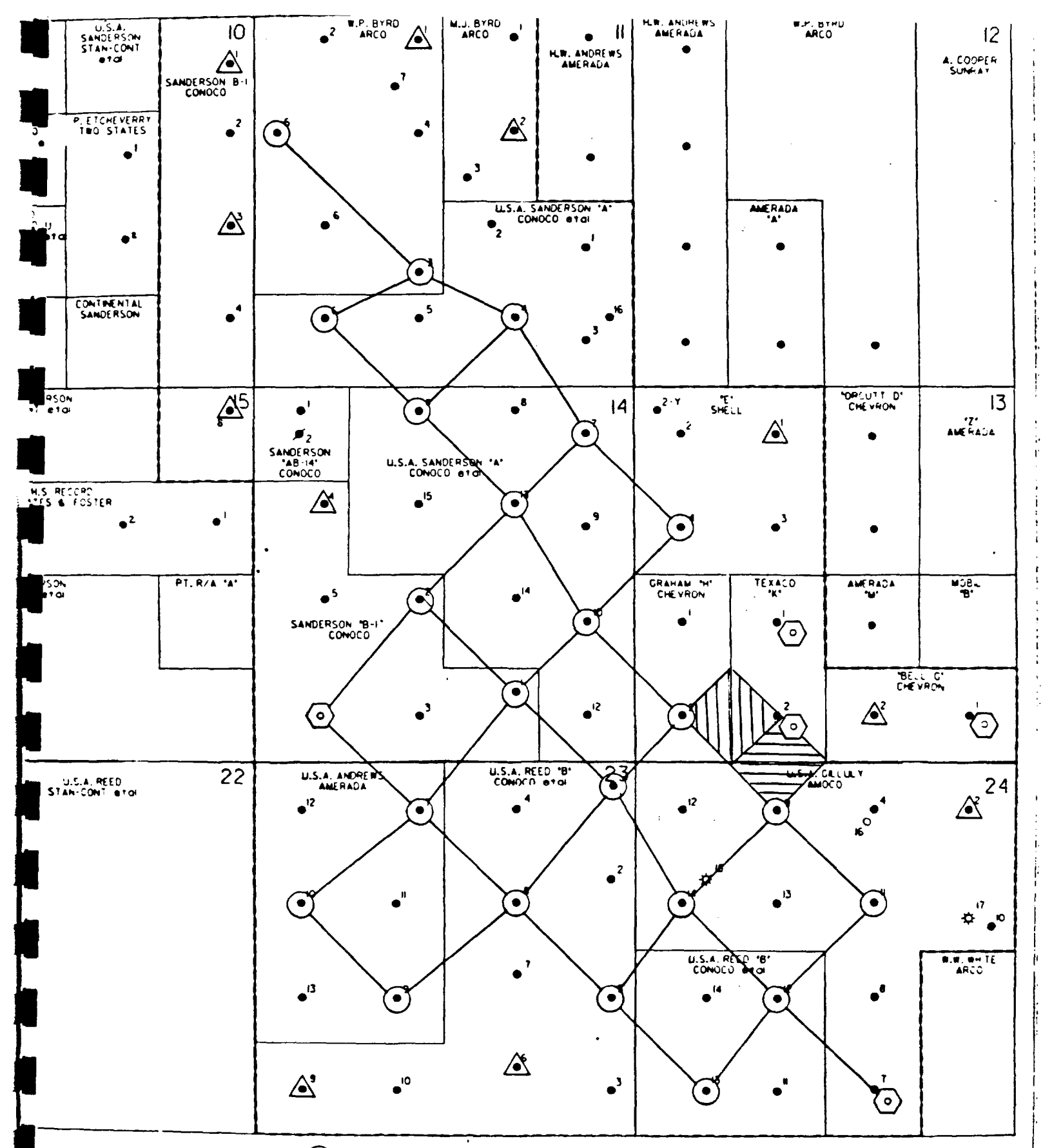
YEAR	TOTAL PRIMARY BOPD	64% DEVELOPED PRIMARY BOPD	36% UNDEVELOPED PRIMARY BOPD	INCREM. BOPD	GOR PRIMARY	DEVELOPED GOR	TOTAL BOPD	TOTAL MCFD	AVERAGE WEIGHTED GOR	OP COSTS $M/YEAR	DEVELOPMENT COSTS TANGIBLE $M/YEAR	DEVELOPMENT COSTS INTANGIBLE $M/YEAR
1988	526	337	189	0	3700	3700	526	1946	3700	823	4,185	4,821
1989	499	319	179	0	3700	3700	499	1845	3700	973	0	0
1990	473	303	170	0	3700	3700	473	1749	3700	973	0	0
1991	448	287	161	0	3700	3000	448	1457	3252	973	0	0
1992	425	272	153	0	3700	2600	425	1273	2996	973	0	0
1993	403	258	145	4	3700	2050	407	1073	2638	973	0	0
1994	382	244	137	88	3700	1700	470	1074	2285	973	0	0
1995	362	232	130	419	3700	1400	781	1393	1784	973	0	0
1996	343	220	124	939	3700	1100	1282	1732	1351	973	0	0
1997	325	208	117	2010	3700	900	2335	2430	1040	973	0	0
1998	309	197	111	2513	3700	730	2822	2390	847	973	0	0
1999	293	187	105	2520	3700	610	2813	2041	726	973	0	0
2000	277	178	100	2525	3700	500	2802	1721	614	973	0	0
2001	263	168	95	2144	3700	440	2407	1368	568	973	0	0
2002	249	160	90	1819	3700	440	2068	1203	581	973	0	0
2003	236	151	85	1542	3700	440	1778	1060	596	973	0	0
2004	224	143	81	1305	3700	440	1529	936	612	973	0	0
2005	212	136	76	1103	3700	440	1315	828	630	973	0	0
2006	201	129	73	931	3700	440	1132	735	649	973	0	0
2007	191	122	69	785	3700	440	976	654	670	973	0	0
2008	181	116	65	659	3700	440	840	582	693	973	0	0
2009	172	110	62	554	3700	440	726	521	718	973	0	0
2010	163	104	59	463	3700	440	626	466	745	973	0	0
2011	154	99	56	386	3700	440	540	419	775	973	0	0
2012	146	94	53	321	3700	440	467	377	807	973	0	0
2013	139	89	50	265	3700	440	404	340	843	973	0	0
2014	132	84	47	218	3700	440	350	308	882	973	0	0
2015	125	80	45	178	3700	440	303	280	923	973	0	0
2016	118	76	43	144	3700	440	262	254	969	973	0	0
2017	112	72	40	116	3700	440	228	232	1017	973	0	0
2018	106	68	38	92	3700	440	198	212	1069	973	0	0
2019	101	64	36	71	3700	440	172	194	1128	973	0	0

ATTACHMENT NO.12A

STAND ALONE CASE
ASSUMING NO LEASELINE INJECTION AGREEMENTS
PESSIMISTIC CASE
WITH STATE K

YEAR	TOTAL PRIMARY BOPD	64% DEVELOPED PRIMARY BOPD	36% UNDEVELOPED PRIMARY BOPD	INCREM. BOPD	GOR PRIMARY	DEVELOPED GOR	TOTAL BOPD	TOTAL MCFD	AVERAGE WEIGHTED GOR	OP COSTS $M/YEAR	DEVELOPMENT COSTS TANGIBLE $M/YEAR	DEVELOPMENT COSTS INTANGIBLE $M/YEAR
1988	526	337	189	0	3700	3700	526	1946	3700	673	0	0
1989	499	319	179	0	3700	3700	499	1845	3700	823	4,959	5,825
1990	473	303	170	0	3700	3700	473	1749	3700	973	0	0
1991	448	287	161	0	3700	3000	448	1457	3252	973	0	0
1992	425	272	153	0	3700	2600	425	1273	2996	973	0	0
1993	403	258	145	0	3700	2050	403	1065	2644	973	0	0
1994	382	244	137	4	3700	1700	386	931	2413	973	0	0
1995	362	232	130	88	3700	1400	450	930	2066	973	0	0
1996	343	220	124	419	3700	1100	762	1160	1522	973	0	0
1997	325	208	117	939	3700	900	1264	1466	1159	973	0	0
1998	309	197	111	2010	3700	730	2319	2023	872	973	0	0
1999	293	187	105	2513	3700	610	2806	2037	726	973	0	0
2000	277	178	100	2520	3700	500	2797	1718	614	973	0	0
2001	263	168	95	2525	3700	440	2788	1535	551	973	0	0
2002	249	160	90	2144	3700	440	2393	1346	562	973	0	0
2003	236	151	85	1819	3700	440	2055	1182	575	973	0	0
2004	224	143	81	1542	3700	440	1766	1040	589	973	0	0
2005	212	136	76	1305	3700	440	1517	917	604	973	0	0
2006	201	129	73	1103	3700	440	1304	810	621	973	0	0
2007	191	122	69	931	3700	440	1122	718	640	973	0	0
2008	181	116	65	785	3700	440	966	638	660	973	0	0
2009	172	110	62	659	3700	440	831	567	683	973	0	0
2010	163	104	59	554	3700	440	717	506	707	973	0	0
2011	154	99	56	463	3700	440	617	453	733	973	0	0
2012	146	94	53	386	3700	440	532	406	763	973	0	0
2013	139	89	50	321	3700	440	460	365	794	973	0	0
2014	132	84	47	265	3700	440	397	329	829	973	0	0
2015	125	80	45	218	3700	440	343	297	867	973	0	0
2016	118	76	43	178	3700	440	296	269	908	973	0	0
2017	112	72	40	144	3700	440	256	244	954	973	0	0
2018	106	68	38	116	3700	440	222	223	1001	973	0	0
2019	101	64	36	92	3700	440	193	203	1053	973	0	0

ATTACHMENT NO. 1



⊙ Convert From Prod To Injection

△ Leaseline Conversion

⬡ Drill

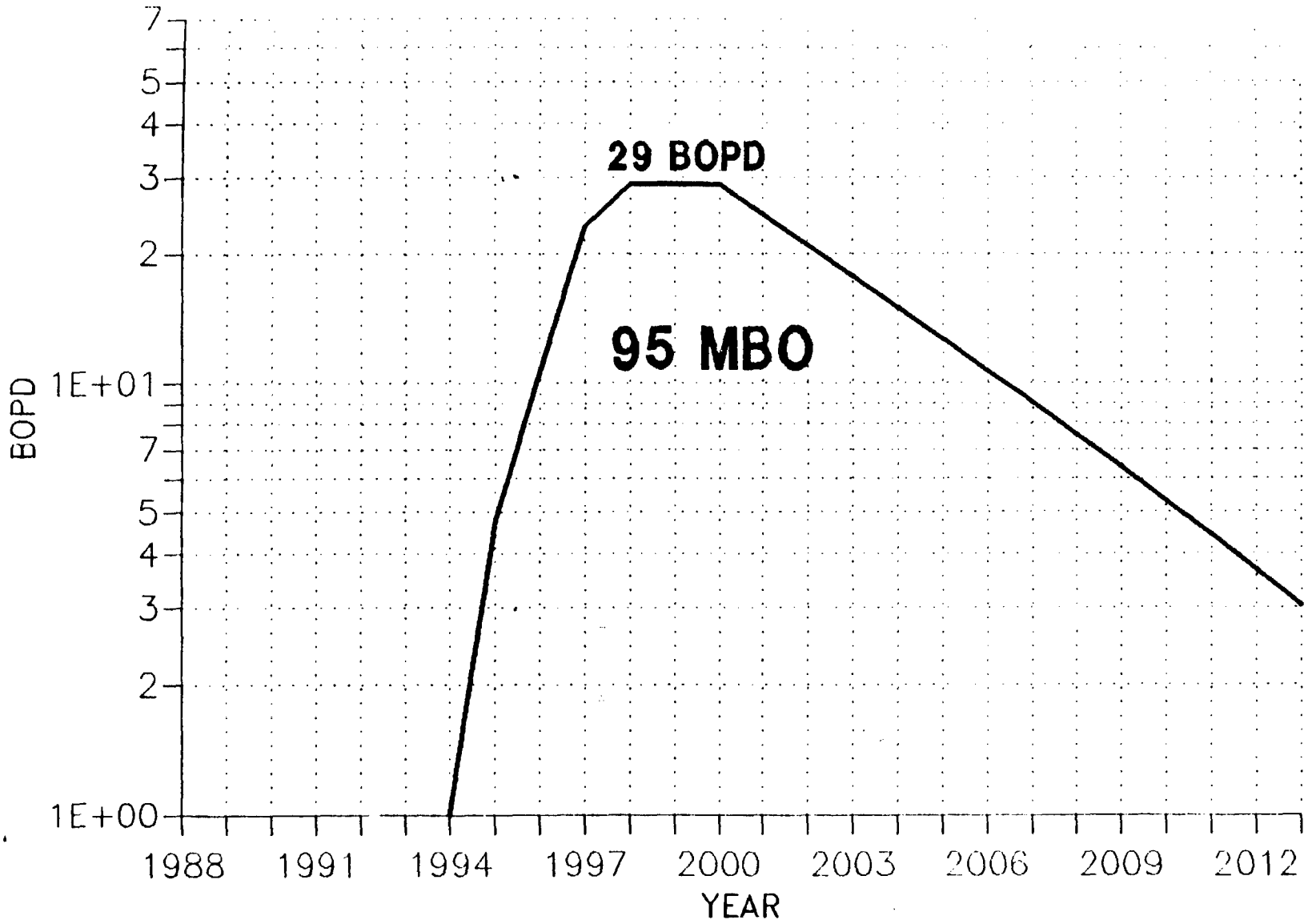
Legend

Amoco Production Company
EUNICE MONUMENT WEST UNIT
LEA COUNTY, N.M.

0 500 1000 1500 2000
graphic scale

ATTACHMENT NO. 13

TEXACO STATE K LEASE
UNIT N, SECTION 13 CONTRIBUTION



ATTACHMENT NO. 14