

MINUTE ITEM  
This Calendar Item No. 25  
was approved as Minute Item  
No. 25 by the State Lands  
Commission by a vote of 3  
to 0 at its 5/31/89  
meeting.

INFORMATIVE  
CALENDAR ITEM

25

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05/31/89

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W 17094

Naughton

FIRST TEN MONTHS STATUS REPORT  
1988-89 PLAN OF DEVELOPMENT AND OPERATIONS AND BUDGET  
LONG BEACH UNIT, WILMINGTON OIL FIELD  
LOS ANGELES COUNTY

At the end of the first ten months of the 1988-89 fiscal year (April 30, 1989) the Long Beach Unit Plan of Development and Operations and Budget had an adjusted budget of \$132,354,000 which includes administrative overhead costs and a \$3.4 million carry-over from fiscal year 1987-88. These latter amounts have remained unchanged from the eight months status report. The original Budget by the City of Long Beach, with carry-in, was \$136.4 million.

During the first ten months, the Commission approved four modifications to the Plan and Budget. The First Modification approved the expenditure of \$286,000 (including overhead) to settle, with the EPA, the Unit's share of the first phase of clean-up costs at a waste disposal site previously used by the Field Contractor for disposal of Unit waste material. No augmentation was required because funds were transferred within the existing budget.

The Second Modification revised Plan and Budget Exhibits C-3 and C-4 to reflect updated economic and production projections for the year as of the end of the first quarter.

The Third Modification added six months of drilling rig activity to the plan and transferred funds in the amount of \$6,251,000 from several accounts to the Drilling and Development Program to fund continued operation of a second drilling rig for the remainder of the budget year. In addition, the Third Modification reflected a budget reduction of \$10,261,000 from funding made surplus primarily by lower electrical energy costs and reduced mining rights taxes as a consequence of lower oil prices. The Third Modification resulted in a net budget reduction of \$4,010,000.

CALENDAR ITEM NO. 25 (CONT'D)

The Fourth Modification revised Plan and Budget Exhibits C-3 and C-4 to reflect updated economic and production projections for the year as of the end of the second quarter (December 31, 1988). Three requests by the Unit Operator (City of Long Beach) to transfer funds totalling \$585,000 between line item accounts within the existing budget were approved. Three plan supplements were approved. One transfer enabled emergency repairs to be made to a floating dock on Pier J. The second transfer involved the purchase and implementation of a computer software system (Unidata) for general petroleum management applications in the Unit. The third transfer provided emergency repairs to the barge landing facilities on Island Freeman.

Unit expenditures during the first ten months, (83.3%) were \$97.74 million or 73.8 per cent of the adjusted budget and 71.7 per cent of the original budget plus carry-over. A plot of these expenditures is included as Exhibit 1. Based on expenses to date and projections for the next two months, staff estimates a plan year expenditure of slightly over \$120 million, leaving a surplus of \$11,000,000 in the Budget for FY 88-89. Even so, the FY 88-89 expenditure level would be \$5 million higher than 1987-88 F.Y.

Oil production for the first ten-month period was 15.6 million barrels and gas production was 2.85 million cubic feet. A plot of Unit oil rates is shown in Exhibit 2 with City of Long Beach projected rates through 1989-90. At average values of \$11.44 per barrel (oil) and \$2.20 per thousand cubic feet (gas), the total value of Unit production for this period was \$185.2 million. This amount is \$8.4 million more than the revenue projections (\$176.8 million) at the beginning of the budget year.

The original projection used estimates of \$11.00 per barrel oil and \$2.25 per MCF gas. A plot of Unit oil prices is shown in Exhibit 3. Net income for the Unit during the ten-month period was \$87.5 million. This is approximately \$23.5 million more than projected due to increased oil prices and reduced expenditures (\$15.1 million). The relationship between oil prices and revenues to costs is shown in Exhibits 3 and 4. Oil prices increased over 70 per cent in the last five months from the low in November 1988. Net income for the year will, therefore, be above that projected.

CALENDAR ITEM NO. 25 (CONT'D)

Significant activities and accomplishments in each plan and budget program thus far are:

A. DRILLING AND DEVELOPMENT PROGRAM

Two drilling rigs were operated on Islands Grissom, White, Chaffee and Pier J. Ten new producing wells and one new injection well were drilled, four producers and eight injectors were redrilled, three producers were converted to injection, one injector was converted to production and two injectors and two producers were permanently abandoned. Drilling activity was in the Ranger, Terminal East, Upper Terminal and Lower Terminal Zones. Oil production of approximately 1800 B/D resulted from this work, reducing the unit's rate of production decline. Problems drilling and redrilling wells have been partially resolved.

The adjusted budget for the Drilling and Development Program on April 30, 1989 was \$18.59 million. Funds expended were \$12.56 million (67.6%). A plot of monthly expenditures is shown in Exhibit 5.

B. OIL AND GAS PRODUCTION PROGRAM

The Unit produced 15.63 million barrels of oil and 2.85 billion cubic feet of gas during the first ten months. Average rates were 51,427 barrels of oil per day and 9.366 million cubic feet of gas per day as compared to projected rates of 51,178 B/D oil and 9,725 MCF/D gas. Expenditures for the ten-month period plotted as \$ per barrel of oil produced are shown in Exhibit 6 along with the City's projected rates for 1989-90.

Gross production for the period averaged 468,361 B/D, compared to the City's projected rate of 472,152 B/D. The actual and proposed gross rates and program expenditures plotted as \$ per barrel of gross fluids are shown in Exhibit 7. The trend of that curve is upward following a period of reduced costs. The continuing decline in active producing wells, 623 during June 1988 and 605 in April is shown in Exhibit 8 and reflects a trend established over the last 18 months. Future production will depend on oil prices, well failure rates and water cut increase. The City of Long Beach anticipates an average of 510 active wells during the 1989-90 period.

CALENDAR ITEM NO. 25 (CONT'D)

Major non-routine projects in progress include the removal of oil storage tanks at the Pier J-6 site, replacement of deteriorated electrical solenoid cables to well cellars on Islands Grissom and Freeman, rebuilding of high voltage switchgear circuit breakers on all islands, replacement of the auxiliary motor control center which operates the decorative waterfall on Island Grissom, and repair of cracked well cellar walls on Pier J.

The adjusted budget for the Oil and Gas Production Program was reduced by \$4,338,000 to \$57,794,000 as a result of the Third Modification. of this amount, \$41.15 million (71.2%) were expended at the end of the first ten months. A plot of monthly expenditures is shown in Exhibit 9.

C. ENHANCED RECOVERY AND STIMULATION PROGRAM

No funds were budgeted for 1988-89 and no activity took place in this program.

D. WATER INJECTION PROGRAM

A total of 152.4 million barrels of water were injected during the first ten months. The average rate was 501,547 barrels per day which was lower than the 512,410 B/D projected. Gross produced fluids amounted to 142.38 million barrels; therefore, the injection/production fluids volume ratio averaged 107 percent for the ten month period. A plot of water injection rates and program expenditures as \$ per barrel of water injected are shown in Exhibit 10. This cost trend is increasing after a long period of decline.

Major non-routine projects in progress include the purchase of three high efficiency water injection pump motors and twelve replacement injection pump motor controllers. The installation of covers on all skim basins in compliance with regional air quality regulations was completed.

The adjusted budget for the Water Injection Program was \$23,907,000 of which \$17.64 million (73.8%) were expended at the end of the first ten months. A plot of monthly expenditures is shown in Exhibit 11.

CALENDAR ITEM NO. 25 (CONT'D)

E. MANAGEMENT PROGRAM

The majority of this program is expenditures for salaries, benefits and expenses of the Field Contractor's management and administrative personnel, engineering and consultant services, data processing equipment purchases and operating costs, office expenses including rental, supplies and services, and the Unit Operator's billable costs. Other significant items include Unit equity expense, special management projects, townlot participation administration and special studies related to Unit waste management and disposal. The up trending plot of the Management Program expenditures expressed as \$ per barrel of oil is shown in Exhibit 12.

Projects in progress during the first ten months include the purchases of computer equipment and software for reservoir modeling studies and the purchase and installation of a computerized maintenance system for the field contractor. Also, the Unit made a first phase settlement for site clean up at a waste disposal site previously used by the Field Contractor for Unit waste disposal. This was provided for in the First Modification.

The adjusted budget on April 30, 1989 was \$18,281,000 of which \$13.54 million (74.1%) were expended during the first ten months. A plot of monthly expenditures is shown in Exhibit 13.

F. TAXES, PERMITS AND LAND RENTAL PROGRAM

Adjusted budget funds for the Taxes, Permits and Land Rental Program on April 30, 1989 amounted to \$13,782,000 of which \$12.84 million (93.2%) were expended. The major cash outflow in this program occurs with mining rights tax payments in December and April of the budget year. Expenditures for the fiscal year in this program are currently projected to be slightly above the amount currently budgeted. A plot of program expenditures is shown in Exhibit 14.

CALENDAR ITEM NO. 25 (CONT'D)

A summary of Long Beach Unit 1988-89 Plan and Budget activity during the first ten months ending April 30, 1989 (in thousands of dollars) is:

<u>Program</u>	<u>Original Budget**</u>	<u>Adjusted Budget**</u>	<u>Expenditures*</u> <u>To 4/30/89 (83.3%)</u>	
A. Drilling and Development	\$ 12,339	\$ 18,590	\$12,559	(67.6%)
B. Oil and Gas Production	62,132	57,794	41,155	(71.2%)
C. Enhanced Recovery and Stimulation	-0-	-0-	-0-	
D. Water Injection	26,582	23,907	17,643	(73.8%)
E. Management	18,843	18,281	13,538	(74.1%)
F. Taxes, Permits and Land Rentals				
	<u>16,468</u>	<u>13,782</u>	<u>12,845</u>	<u>(93.2%)</u>
<b>Totals</b>	<b>\$136,364</b>	<b>\$132,354</b>	<b>\$97,739</b>	<b>(73.8%)</b>

\*Includes Administrative Overhead Costs

\*\*Includes Administrative Overhead Costs and \$3,394,000 1987-88 Carry-Over

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CALENDAR ITEM NO. 25 (CONT'D)

The 1988-89 Plan and Budget provides for electrical energy billings of \$25,318,000 for the plan year. This amount was based on predicted use of 410,610,000 kilowatt hours (kwh) at an average cost of 6.120 cents/kwh. Actual billings for the first ten months amounted to \$16,108,000 (63.6%) for 329,024,000 kwh usage (80.0%), for an average cost of 4.90 cents per kwh. This lower rate results from PUC restructured rates which dropped winter rates to as low as 4.062 cents per kwh. The energy consumed will be less than proposed because produced and injected volumes of fluid will be lower than originally projected. Four budget line item activities are major users of electrical energy: Hydraulic Lift Surface, Submersible Lift Surface, Water Injection System and Produced Water Handling. Together, these four items account for about 80 percent of the Unit's total electrical energy costs. Plots of monthly expenditures on these activities are shown in Exhibits 15, 16, 17 and 18. Exhibit 19 is a comparison between total Unit fluids (gross production plus water injection) and total electrical energy consumed and City's proposed for 1989-90 in the Unit (Islands and Pier J). Exhibit 20 compares total fluids produced and injected fluids with electrical energy consumed on the Islands per barrel of total fluids produced or injected. Exhibit 21 also shows the same islands energy consumption compared with the Islands gross produced fluids or water injected on a daily basis. Exhibit 22 shows a plot of actual electrical energy monthly average costs for the unit in cents per kwh to April 1989 and including a projection of such average costs by the City for the 1989-90 budget year. Exhibit 23 is a plot of the increasing total expenditures of the Oil and Gas Production, Water Injection, and Management programs as a \$ per barrel cost of oil.

AB 884: N/A.

- EXHIBITS:
1. Total Budget Expenditures.
  2. Oil Production Rate.
  3. Oil Price and Costs.
  4. Oil Revenue and Costs.
  5. Drilling and Development Program Expenditures (Program A).
  6. Program B Costs \$ Per Barrel Oil.
  7. Program B Costs \$ Per Barrel Gross Fluid.
  8. Producing Well Count.
  9. Oil and Gas Production Program Expenditures (Program B).
  10. Program D Costs \$ Per Barrel Injected Water.

CALENDAR ITEM NO. 25 (CONT'D)

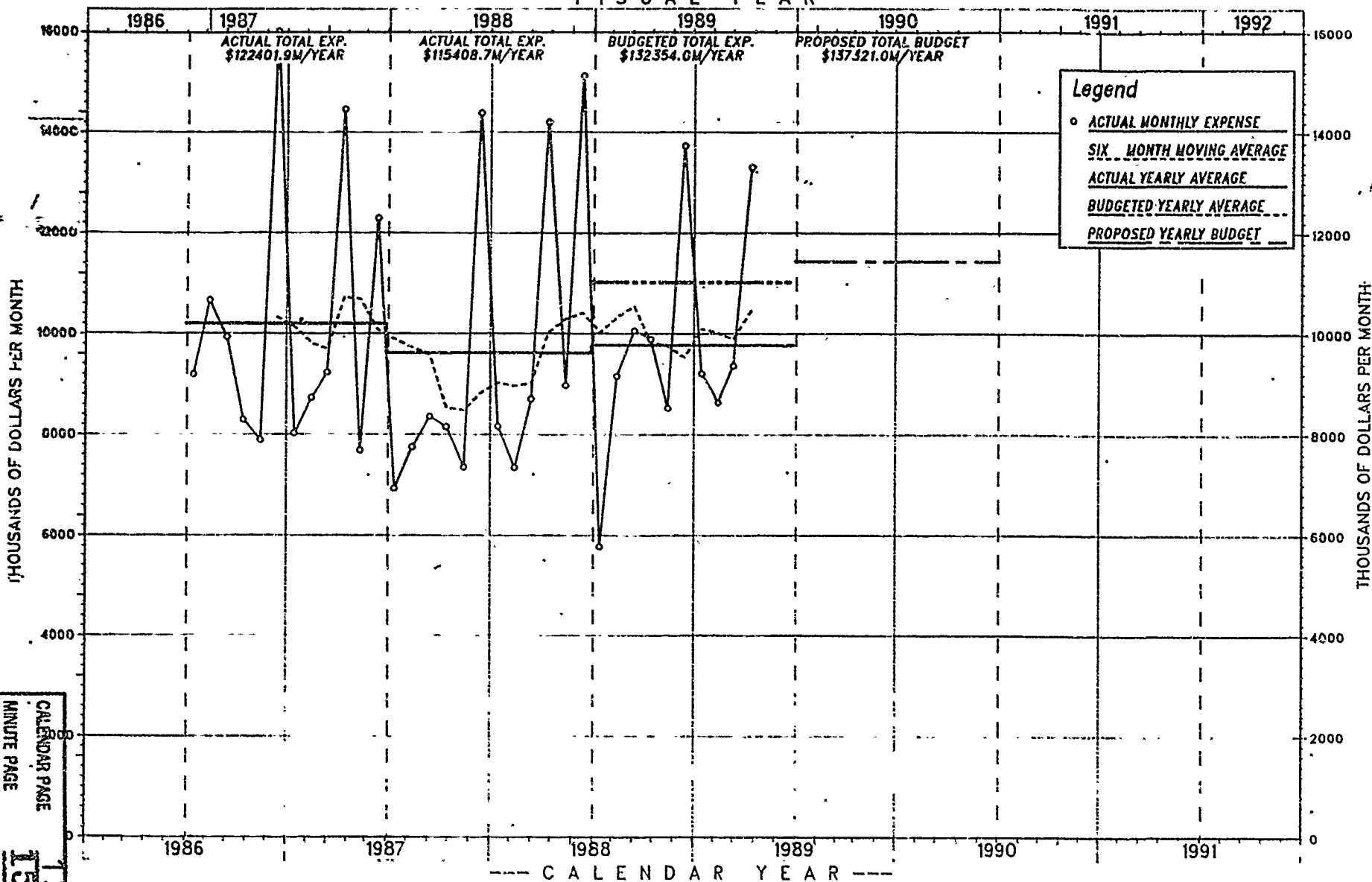
11. Water Injection Program Expenditures (Program D).
12. Program E Costs \$ Per Barrel Oil.
13. Management Program Expenditures (Program E).
14. Taxes, Permits and Land Rental Program Expenditures (Program F).
15. Hydraulic Lift - Surface Expenditures.
16. Submersible Lift - Surface Expenditures.
17. Produced Water Handling Expenditures.
18. Water Injection System Expenditures.
19. Comparison of Total Fluids and Energy Consumed (L.B. Unit Total).
20. Comparison of Total Fluids and Energy Consumed (L.B. Unit Islands).
21. Comparison of Gross Production, Water Injection and Energy Consumed (L.B. Unit Islands).
22. Electrical Energy Costs.
23. Programs B, D & E Costs Per Barrel Oil.



# L O N G B E C H U N I T

EXHIBIT 1

TOTAL BUDGET -- INCLUDING ADMIN. OVERHEAD  
 --- FISCAL YEAR ---



**Legend**

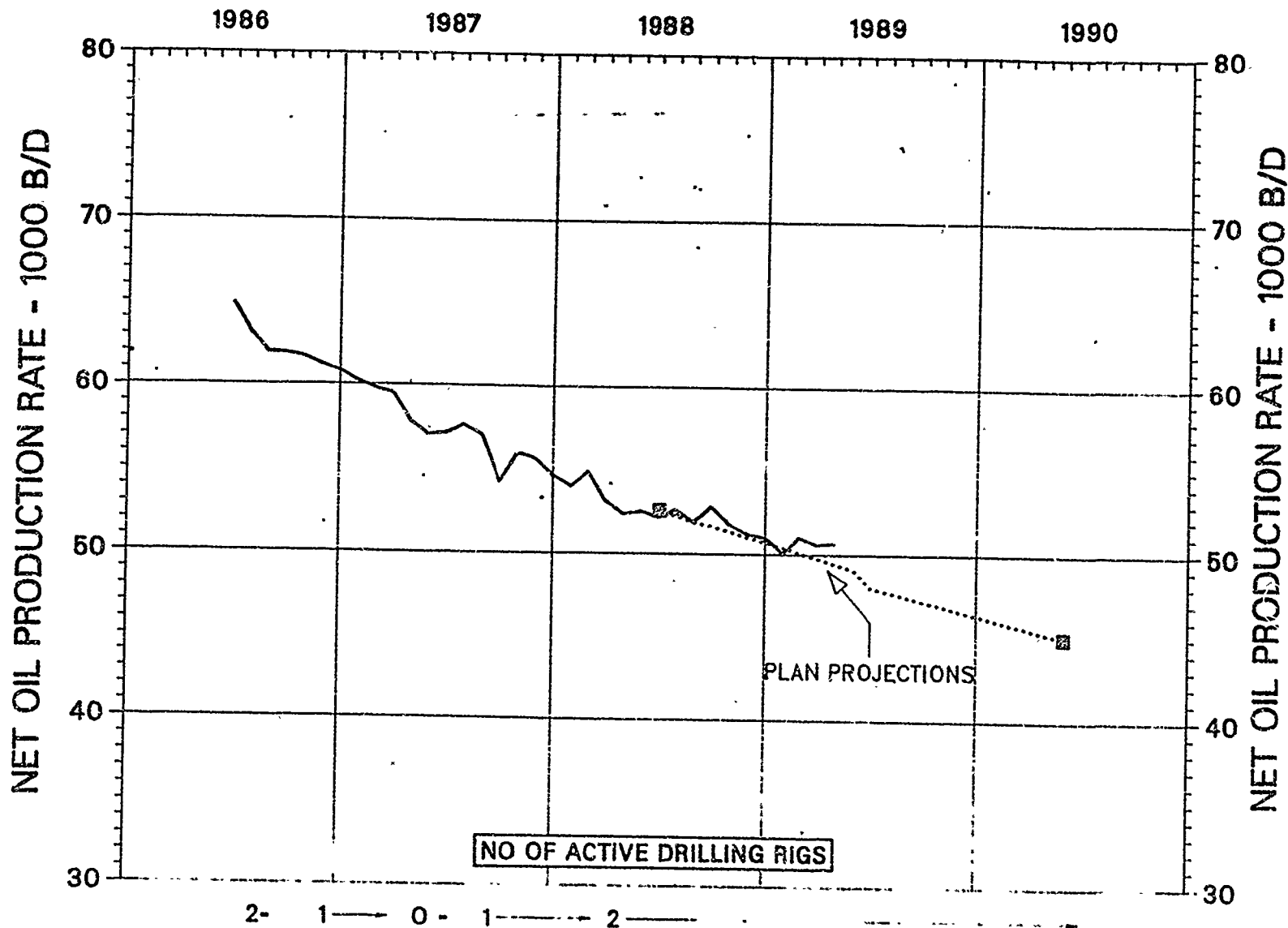
- ACTUAL MONTHLY EXPENSE
- SIX MONTH MOVING AVERAGE
- ACTUAL YEARLY AVERAGE
- BUDGETED YEARLY AVERAGE
- PROPOSED YEARLY BUDGET

CALENDAR PAGE 135.8  
 MINUTE PAGE 1507

Mar. 10 1989

# LONG BEACH UNIT OIL PRODUCTION RATE

EXHIBIT 2

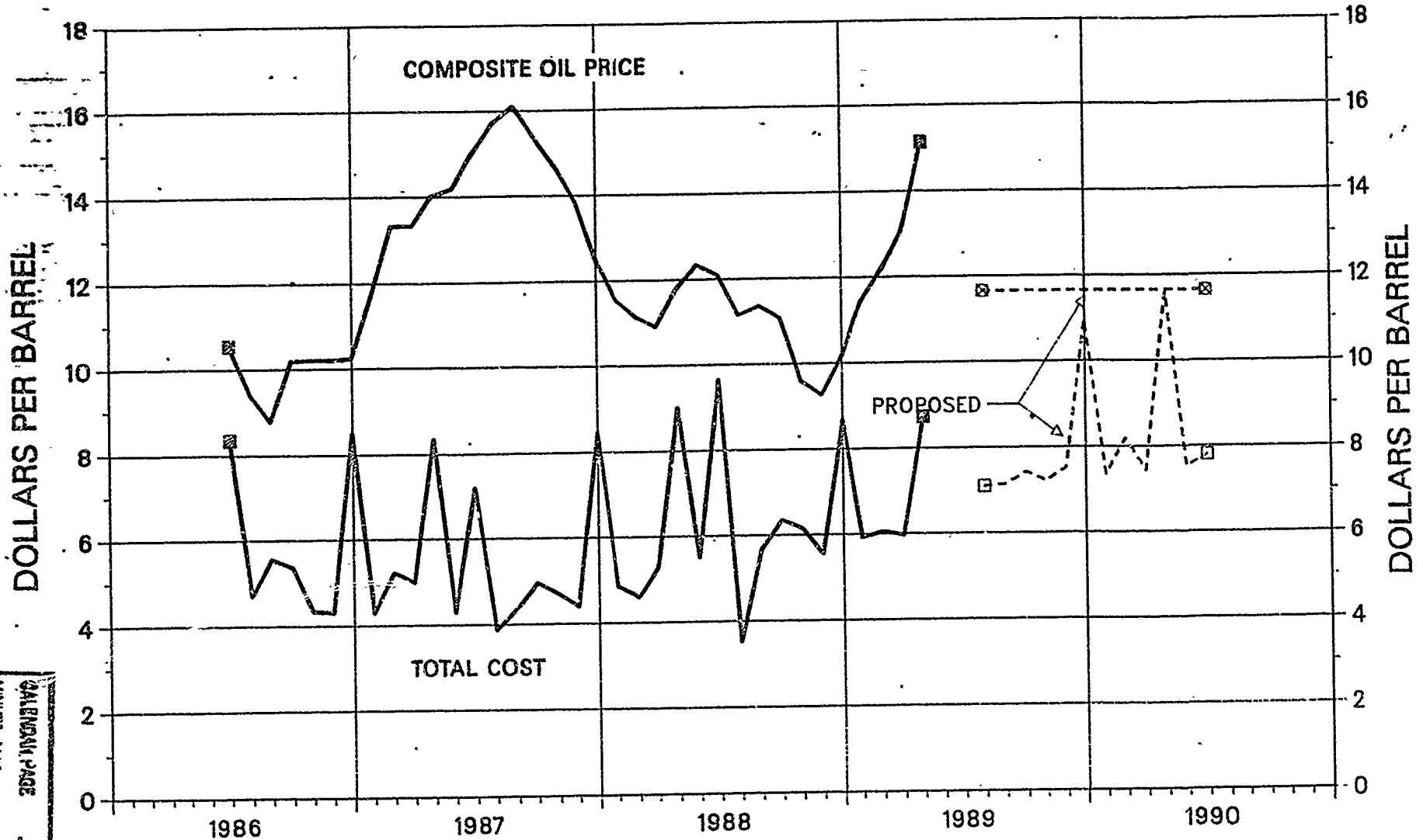


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# LONG BEACH UNIT

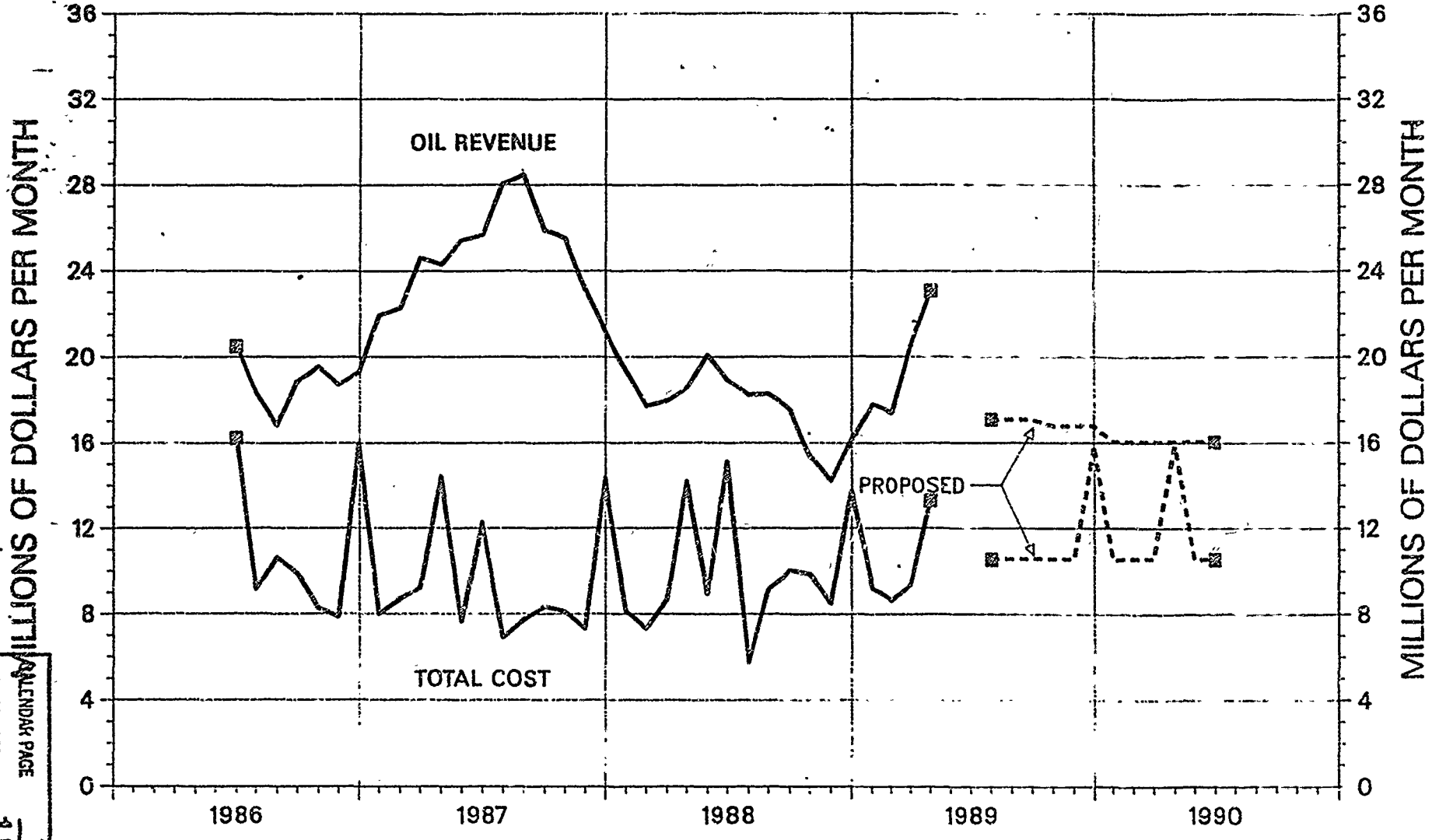


May 22 1989

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# LONG BEACH UNIT



ILLIONS OF DOLLARS PER MONTH

MILLIONS OF DOLLARS PER MONTH

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May 22 1989

0.1662

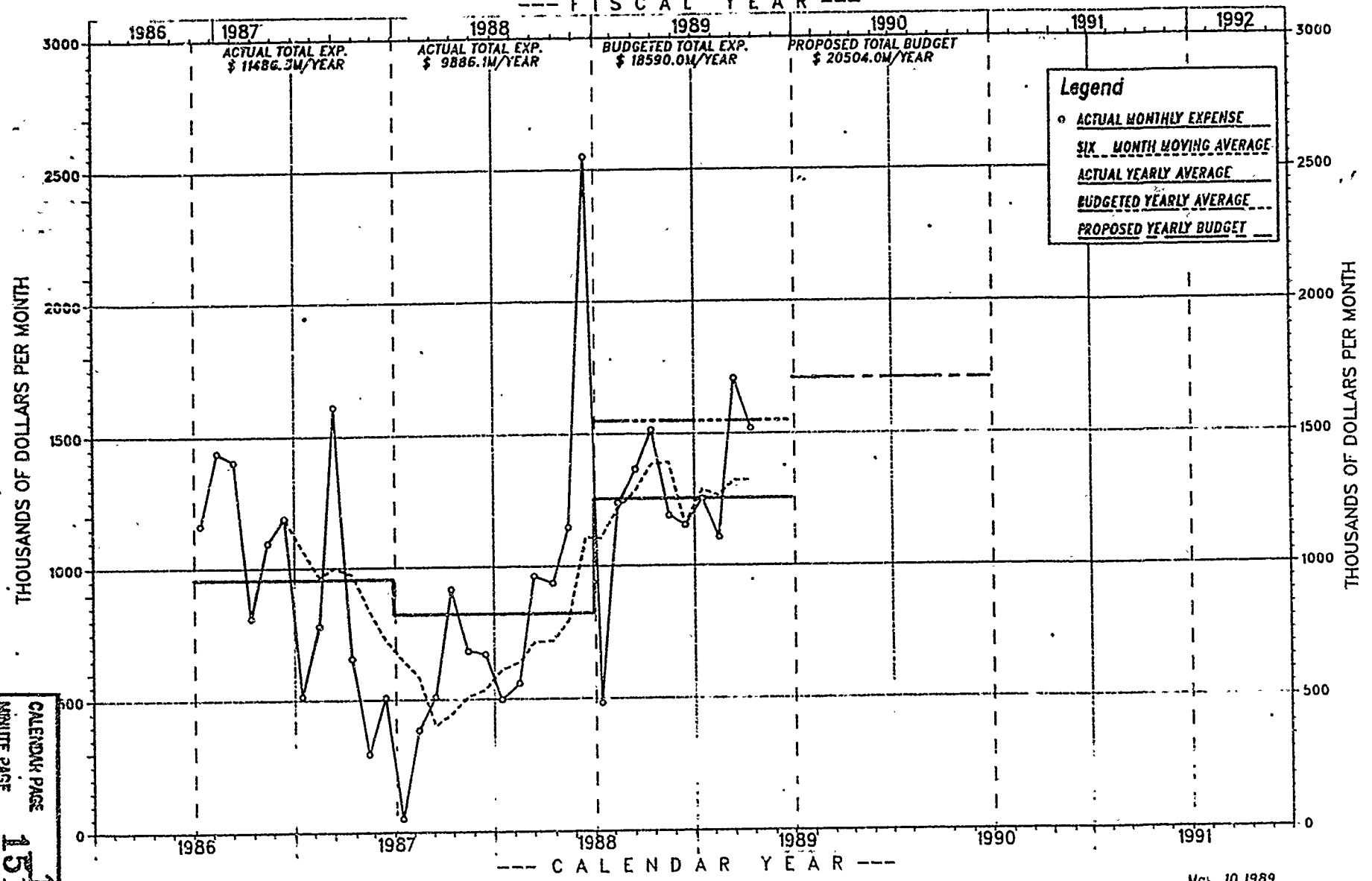
LONG BEACH UNIT  
DRILLING & DEVELOPMENT PROGRAM

TOTAL

EXHIBIT 5

PROGRAM A

--- FISCAL YEAR ---



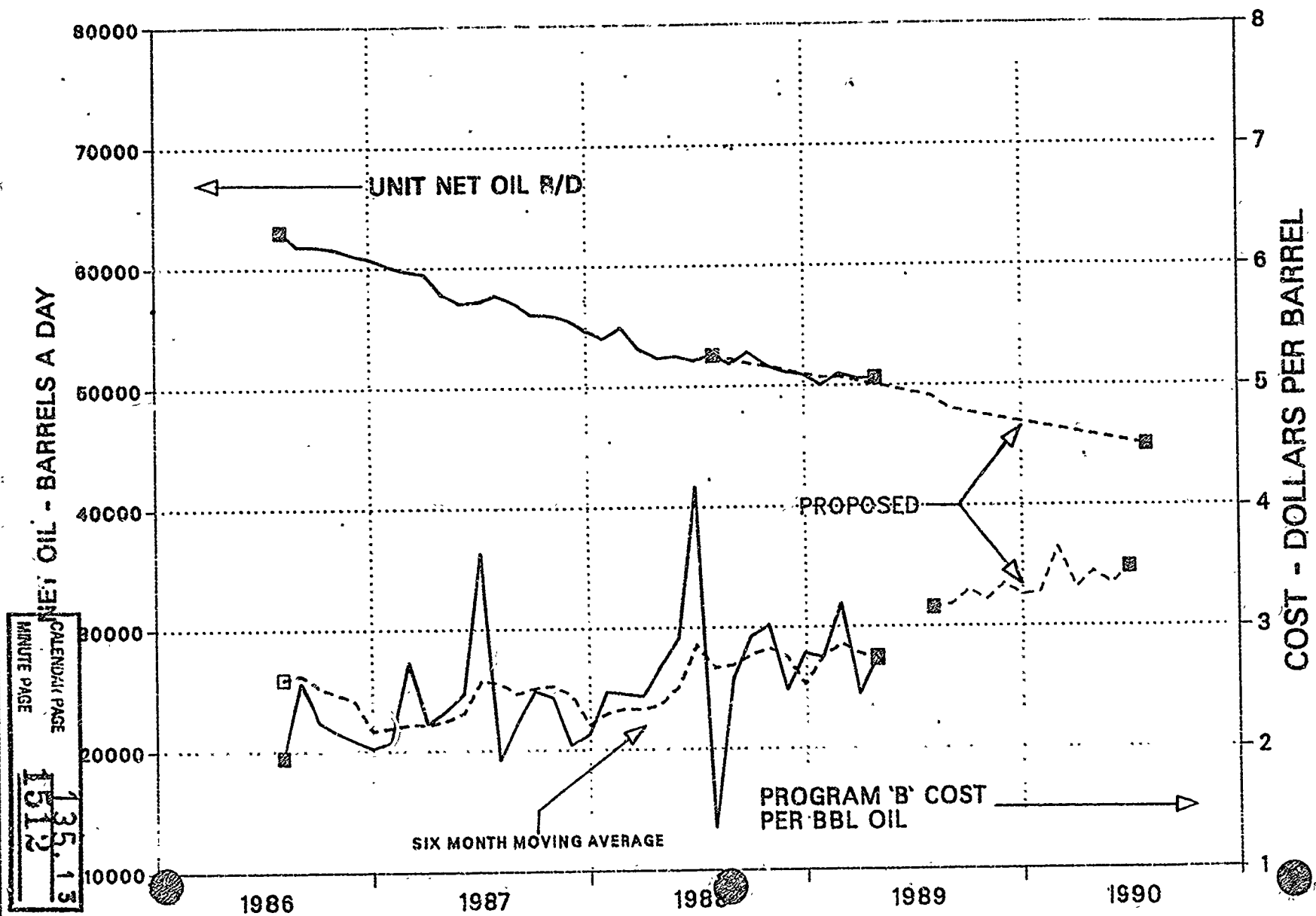
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May 10 1989

0.13512

# OIL & GAS PRODUCTION PROGRAM COSTS EXPRESSED AS \$/BBL OIL

EXHIBIT 6  
LONG BEACH UNIT



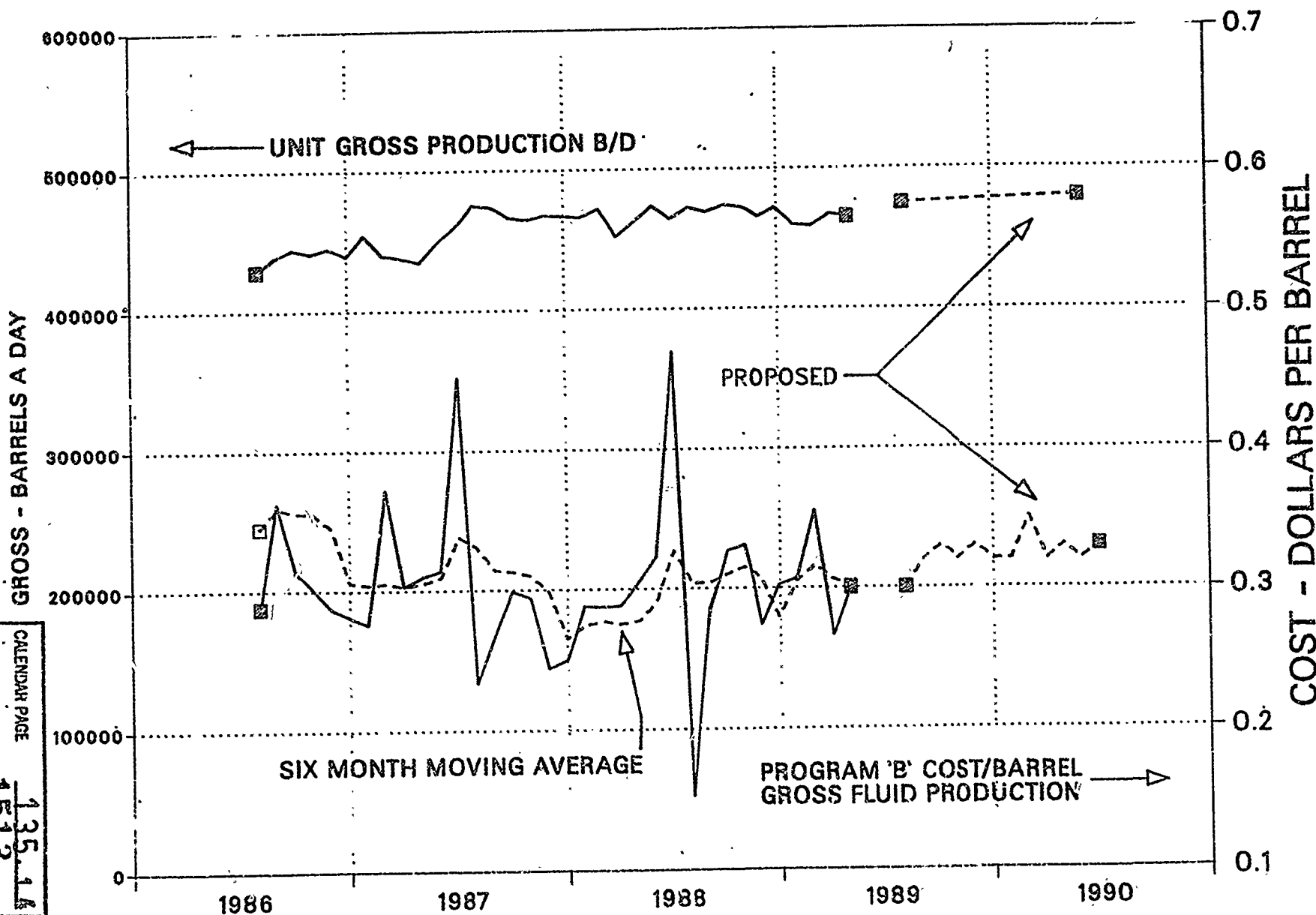
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# OIL & GAS PRODUCTION PROGRAM COSTS EXPRESSED AS \$/BBL GROSS FLUID

EXHIBIT 7

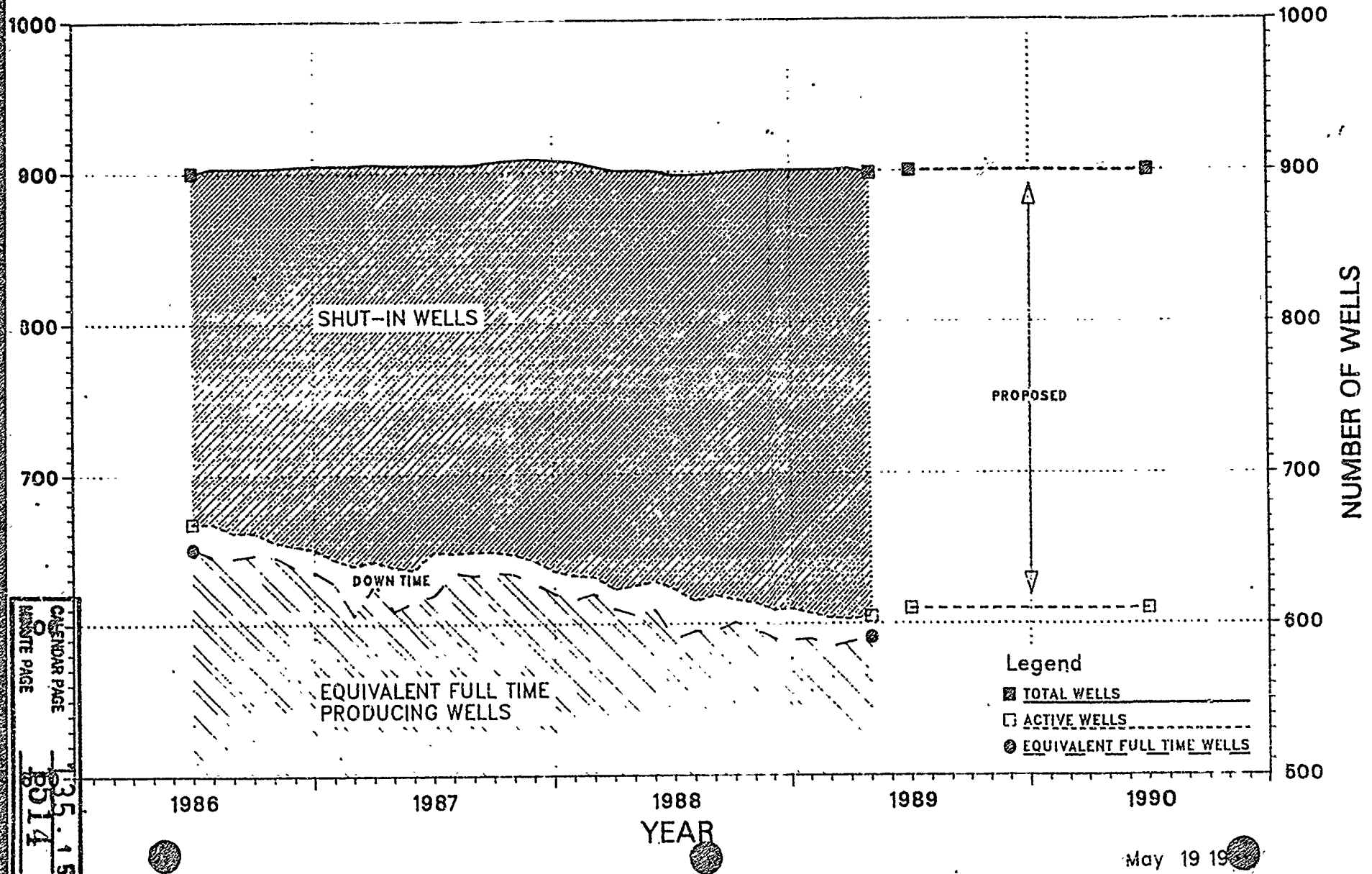
LONG BEACH UNIT



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# LONG BEACH UNIT PRODUCING WELLS

EXHIBIT 8



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May 19 1988

0.1666



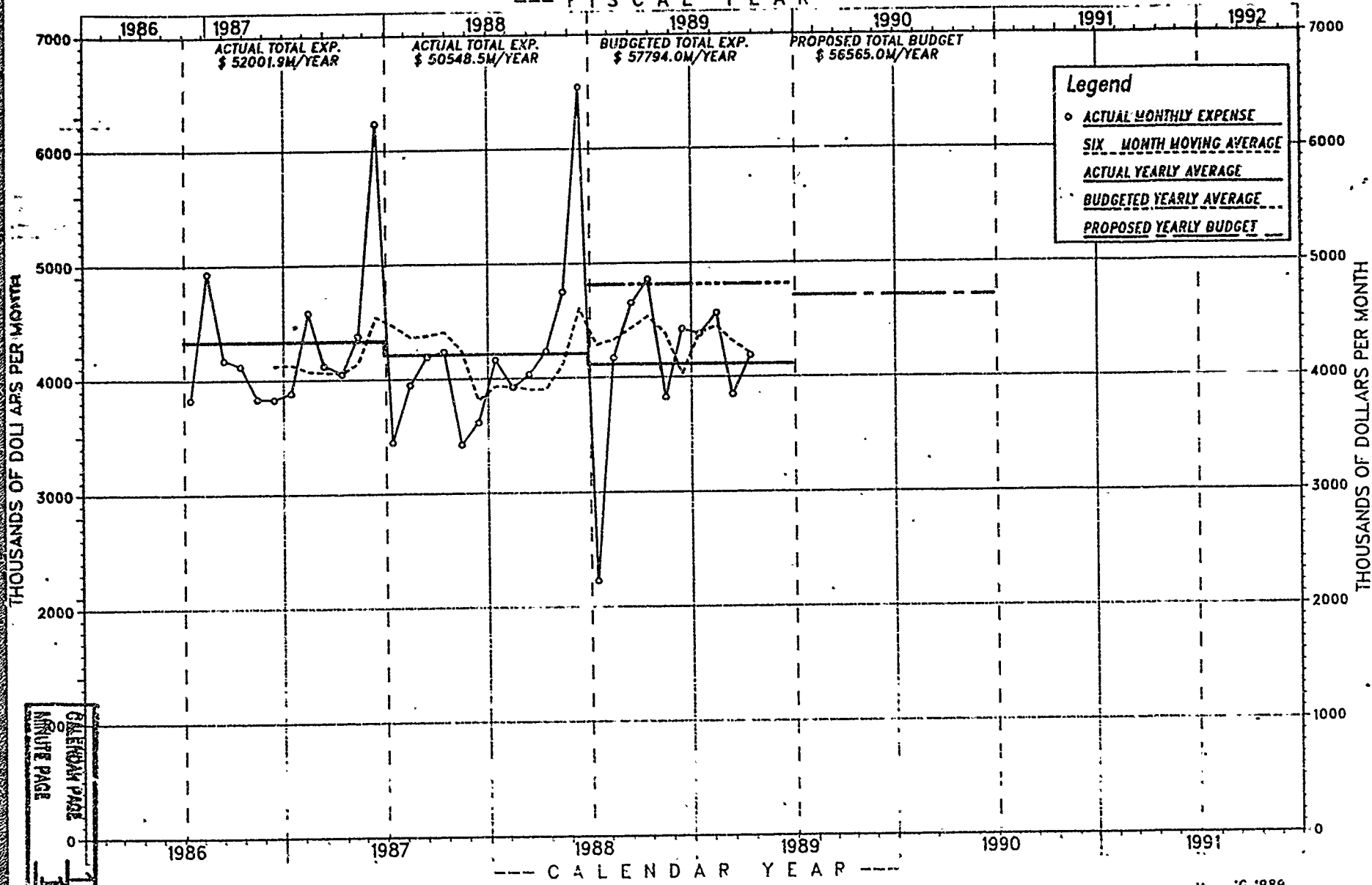
# LONG BEACH UNIT

OIL & GAS PRODUCTION PROGRAM TOTAL

EXHIBIT 9

## PROGRAM B

--- FISCAL YEAR ---

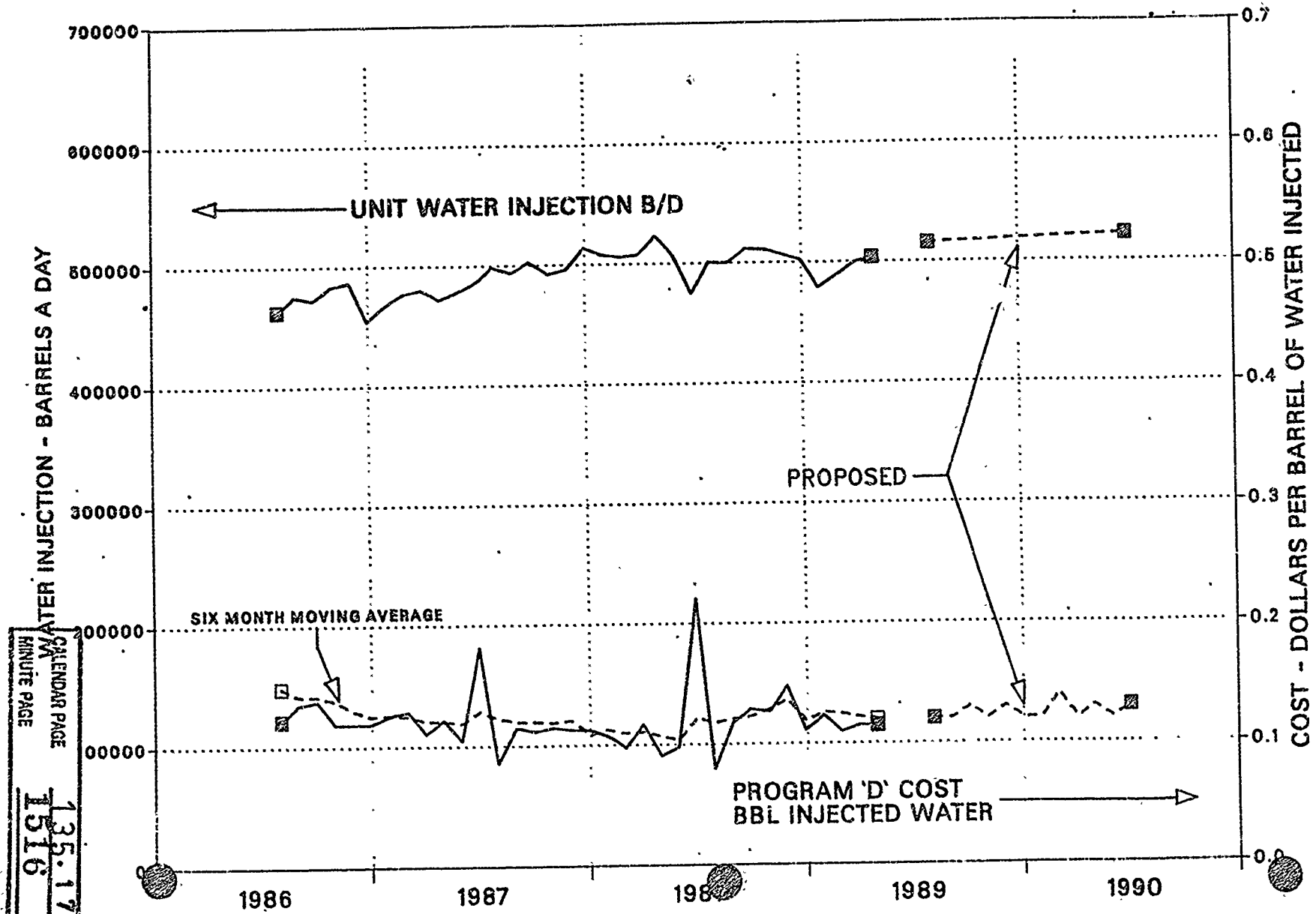


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 MINUTE PAGE 1515

0.1667

# WATER INJECTION PROGRAM COSTS EXPRESSED AS \$/BBL OF INJECTED WATER INJECTION

EXHIBIT 10  
LONG BEACH UNIT



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0. 1988

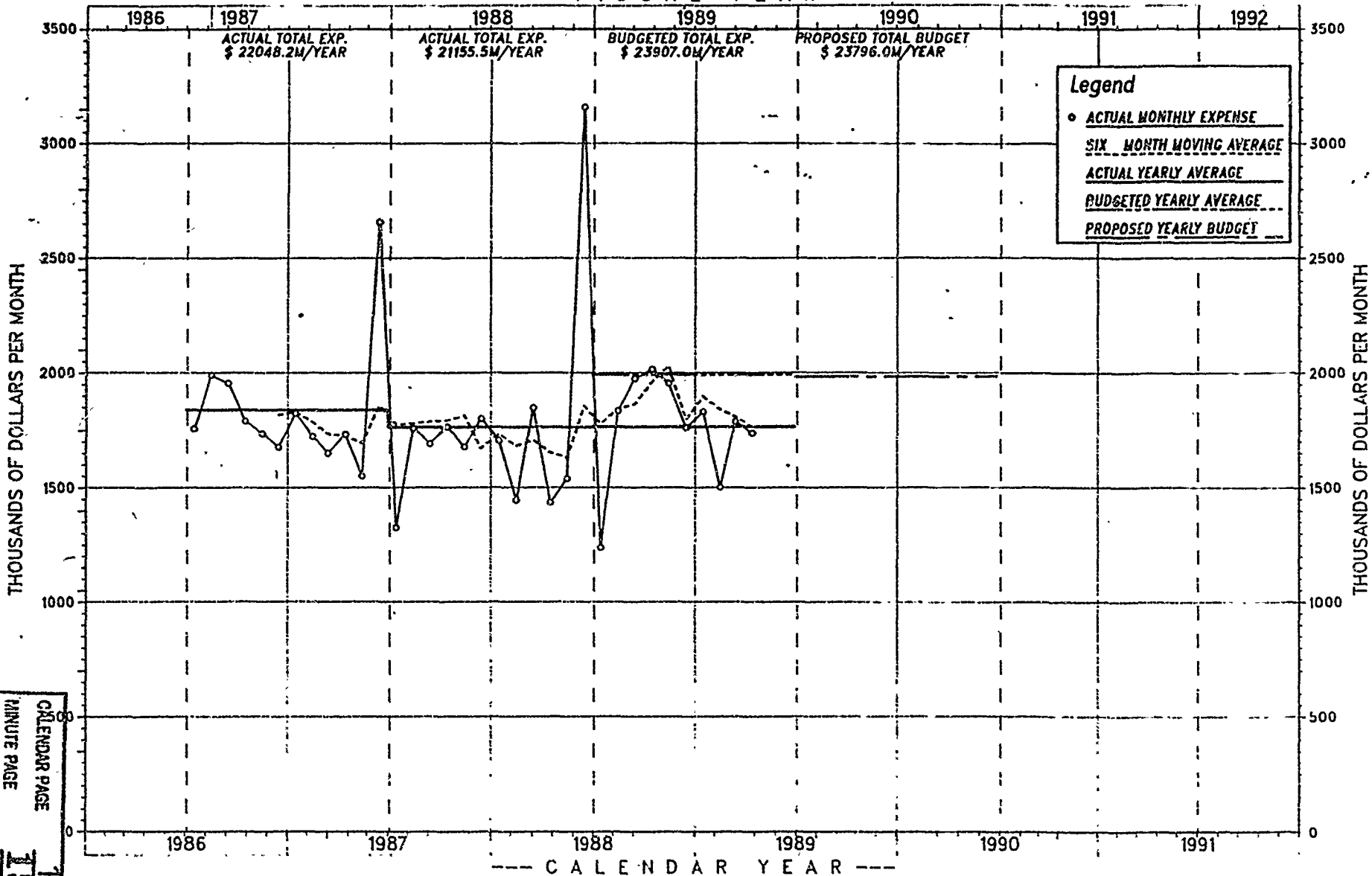
LONG BEACH UNIT  
WATER INJECTION PROGRAM

PROGRAM D  
TOTAL

EXHIBIT 11

PROGRAM D

--- FISCAL YEAR ---



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MINUTE PAGE 1517

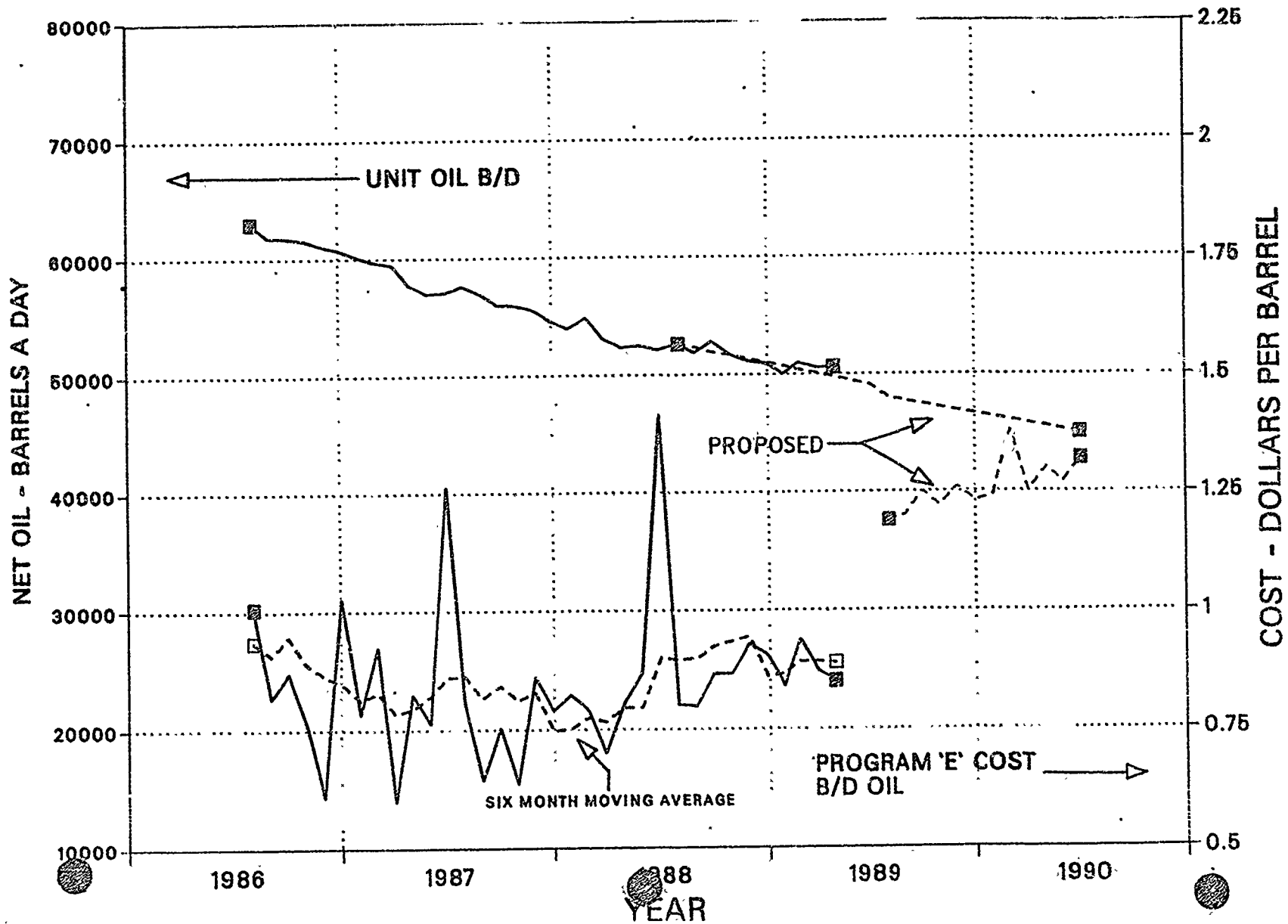
May 10 1989

0.1689

# MANAGEMENT PROGRAM COSTS EXPRESSED AS \$/BBL OIL

EXHIBIT 12

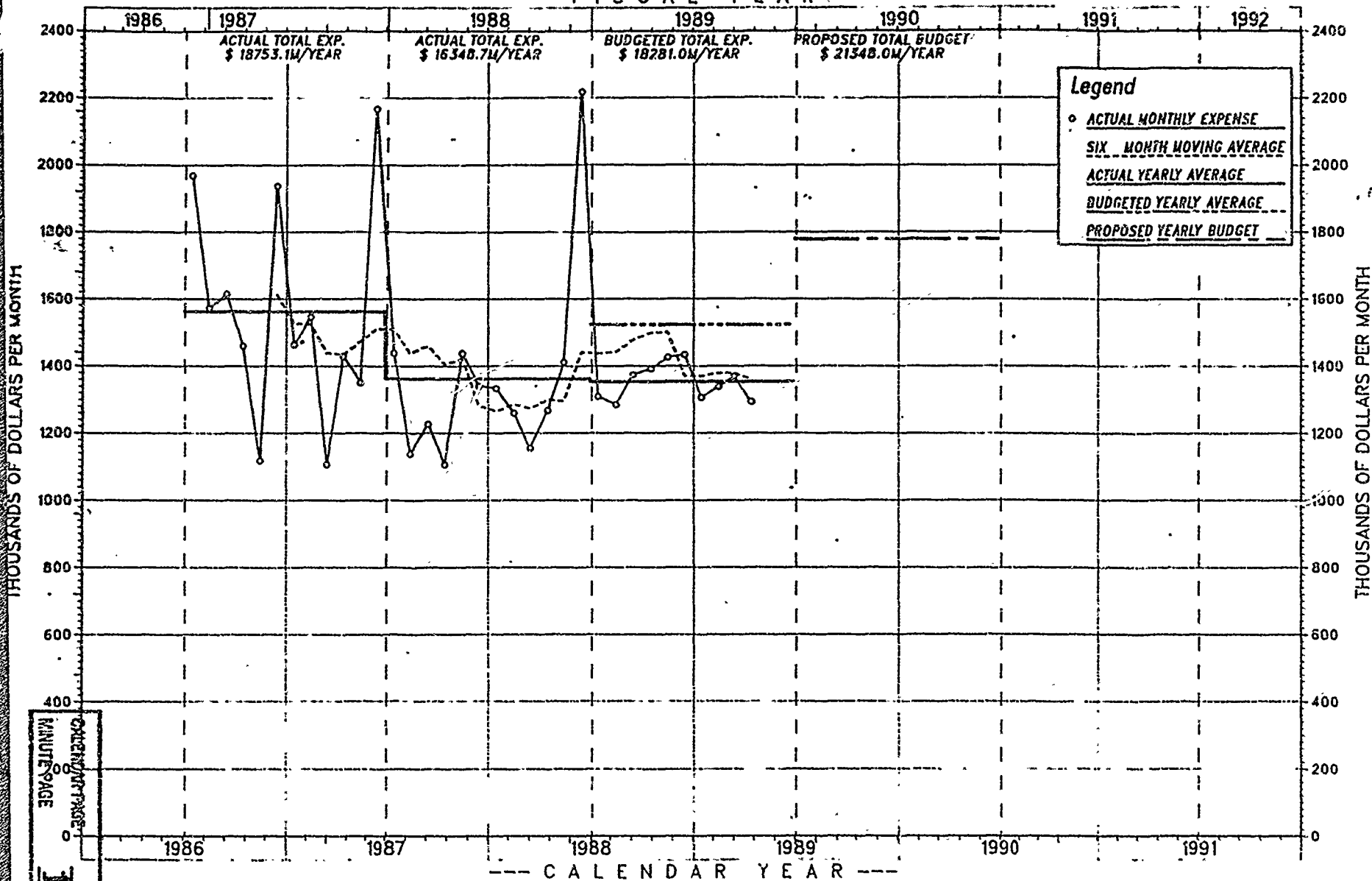
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PROGRAM E

--- FISCAL YEAR ---



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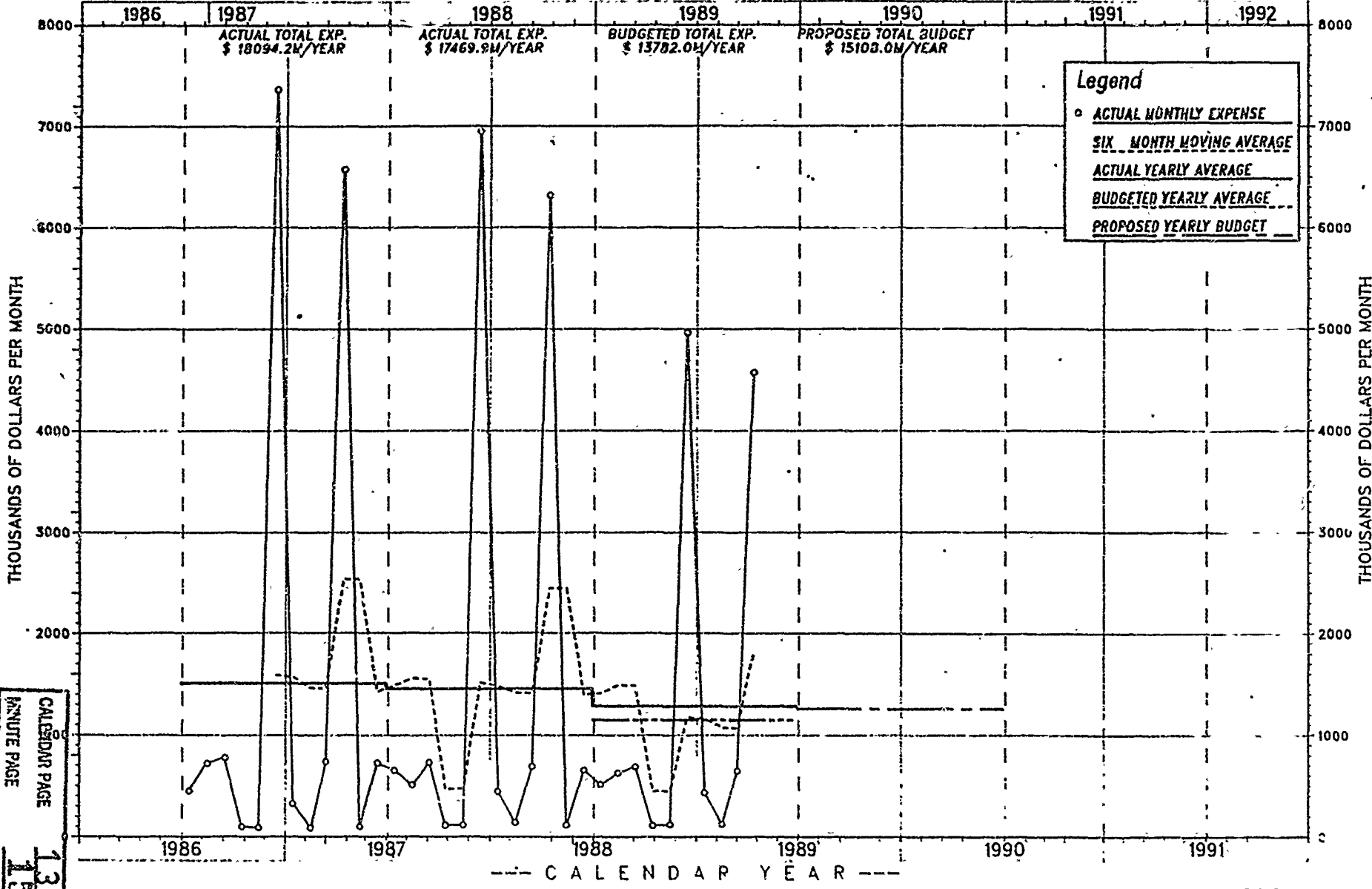
0.1671

LONG BEACH UNIT  
TAXES, PRMTS, & RENTAL PROGRAM

PROGRAM F  
TOTAL

EXHIBIT 14

--- FISCAL YEAR ---



**Legend**

- ACTUAL MONTHLY EXPENSE
- ..... SIX MONTH MOVING AVERAGE
- - - - ACTUAL YEARLY AVERAGE
- · - · BUDGETED YEARLY AVERAGE
- \_\_\_\_\_ PROPOSED YEARLY BUDGET

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--- CALENDAR YEAR ---

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LONG BEACH UNIT  
OIL & GAS PRODUCTION PROGRAM

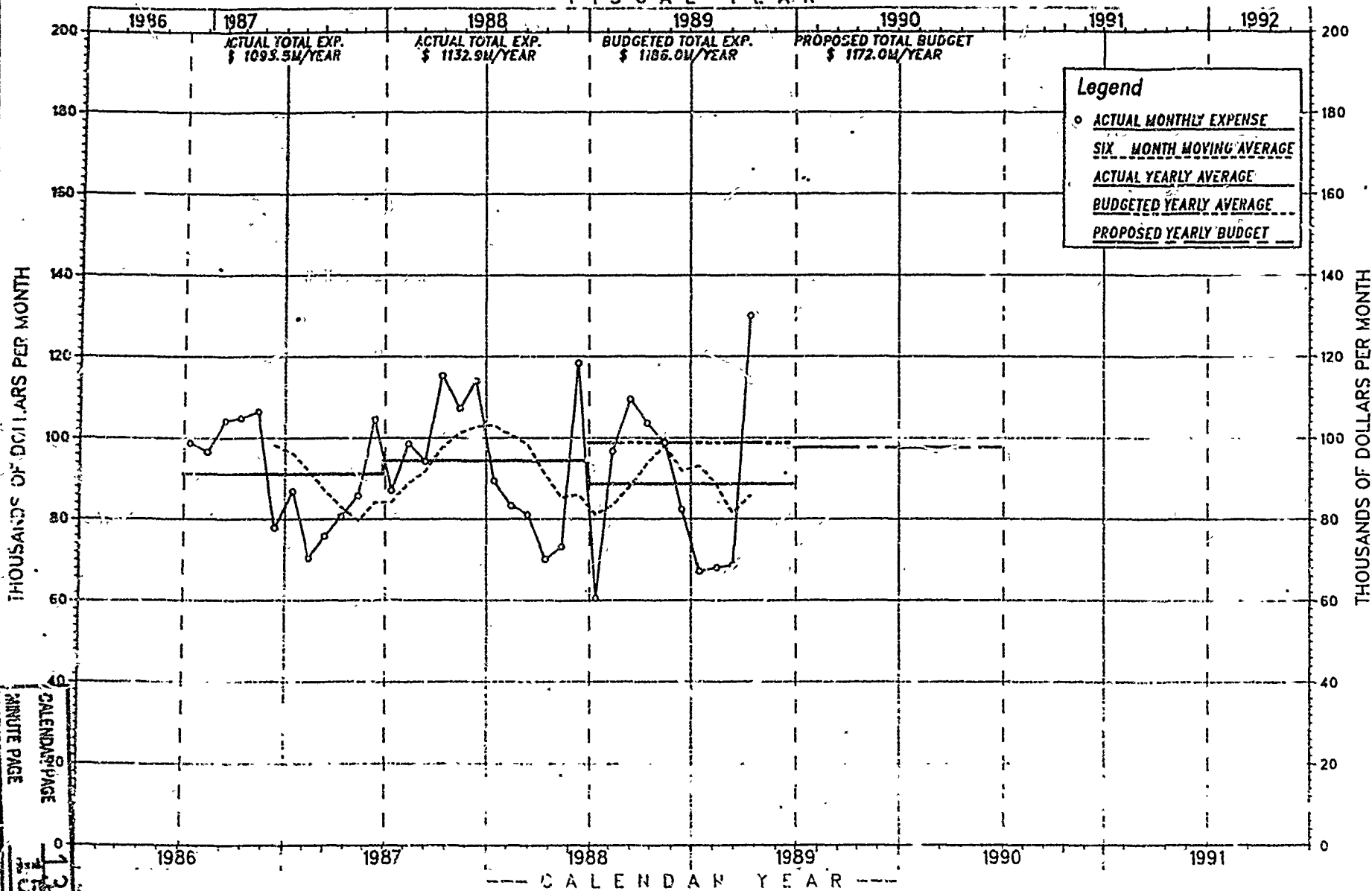
FLUID LIFTING

HYDRAULIC LIFT - SURFACE

BUDGET CODE 22 -- ACCOUNT CODE 911

--- FISCAL YEAR ---

EXHIBIT 15  
Plotted Data  
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Overhead

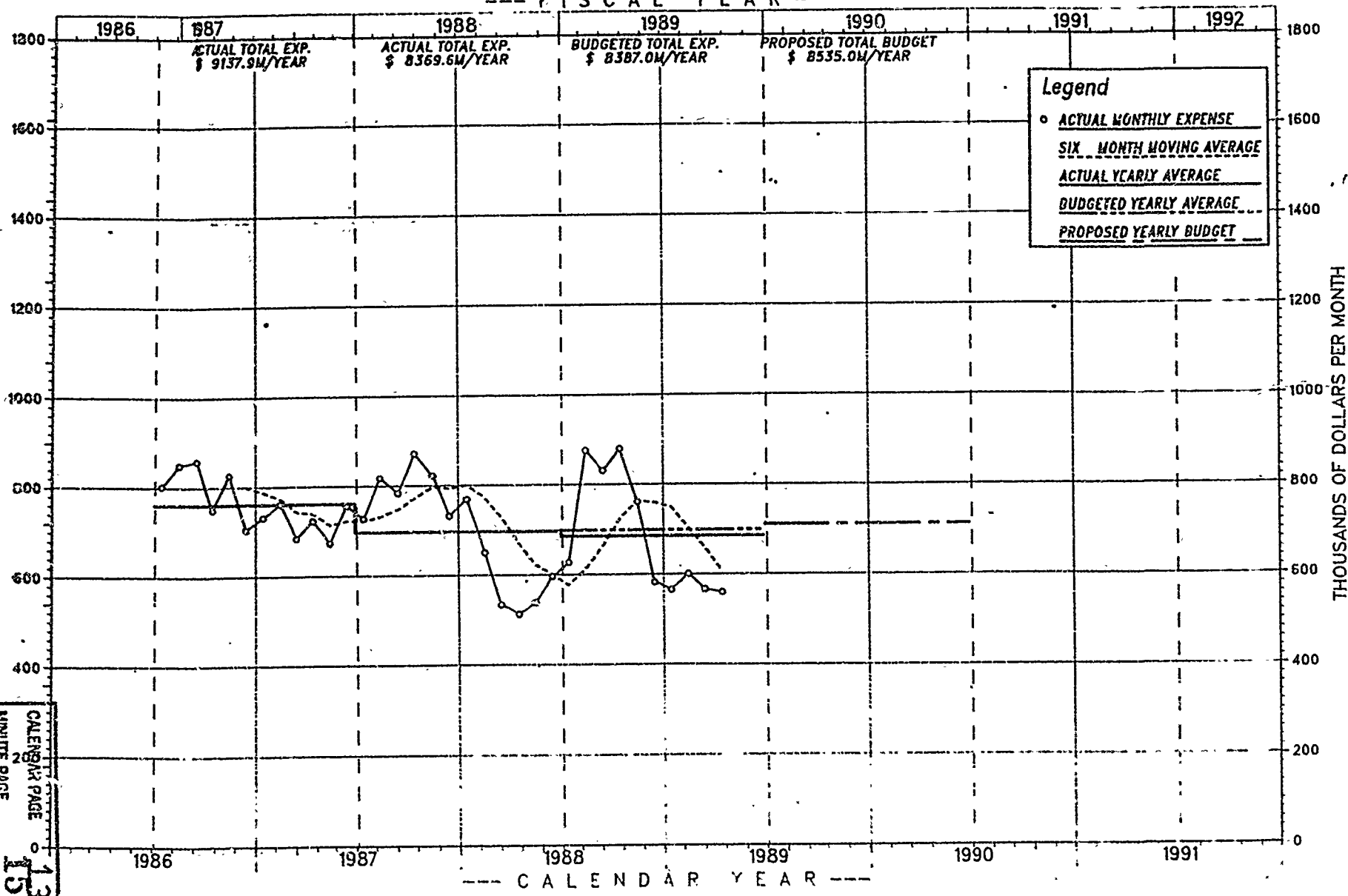


THOUSANDS OF DOLLARS PER MONTH  
CALENDAR YEAR  
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**LONG BEACH UNIT**  
 OIL & GAS PRODUCTION PROGRAM      FLUID LIFTING      SUBMERSIBLE LIFT -- SURFACE  
 BUDGET CODE 22 -- ACCOUNT CODE 918  
 --- FISCAL YEAR ---

**EXHIBIT 16**

Plotted Data  
 DOES NOT Include  
 Administrative  
 Overhead



**Legend**

- ACTUAL MONTHLY EXPENSE
- SIX MONTH MOVING AVERAGE
- ACTUAL YEARLY AVERAGE
- BUDGETED YEARLY AVERAGE
- PROPOSED YEARLY BUDGET

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LONG BEACH UNIT  
WATER INJECTION PROGRAM

WATER INJECTION SYSTEMS

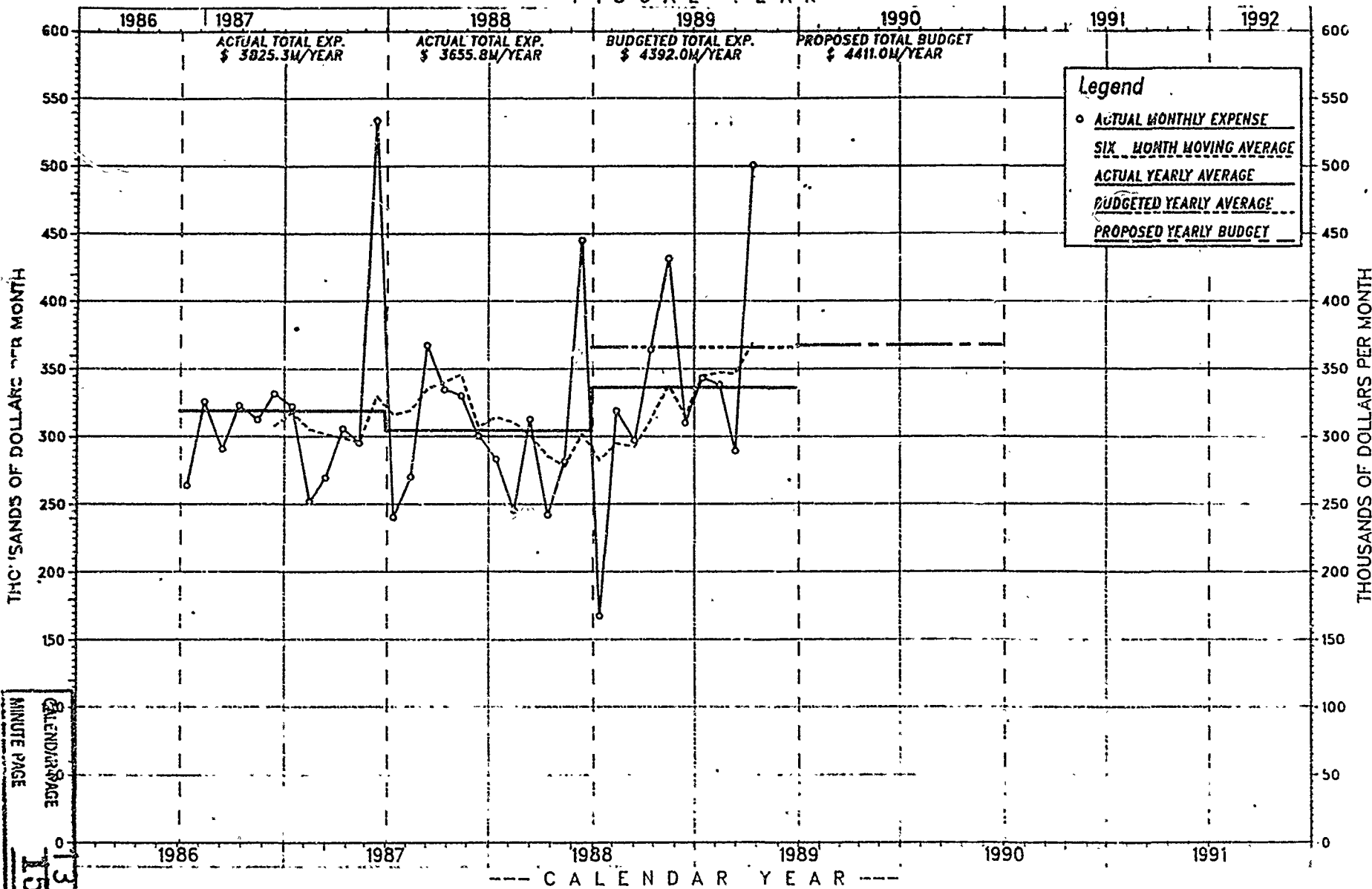
PRODUCED WATER HANDLING

BUDGET CODE 42 -- ACCOUNT CODE 914

--- FISCAL YEAR ---

Plotted Data  
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EXHIBIT 17



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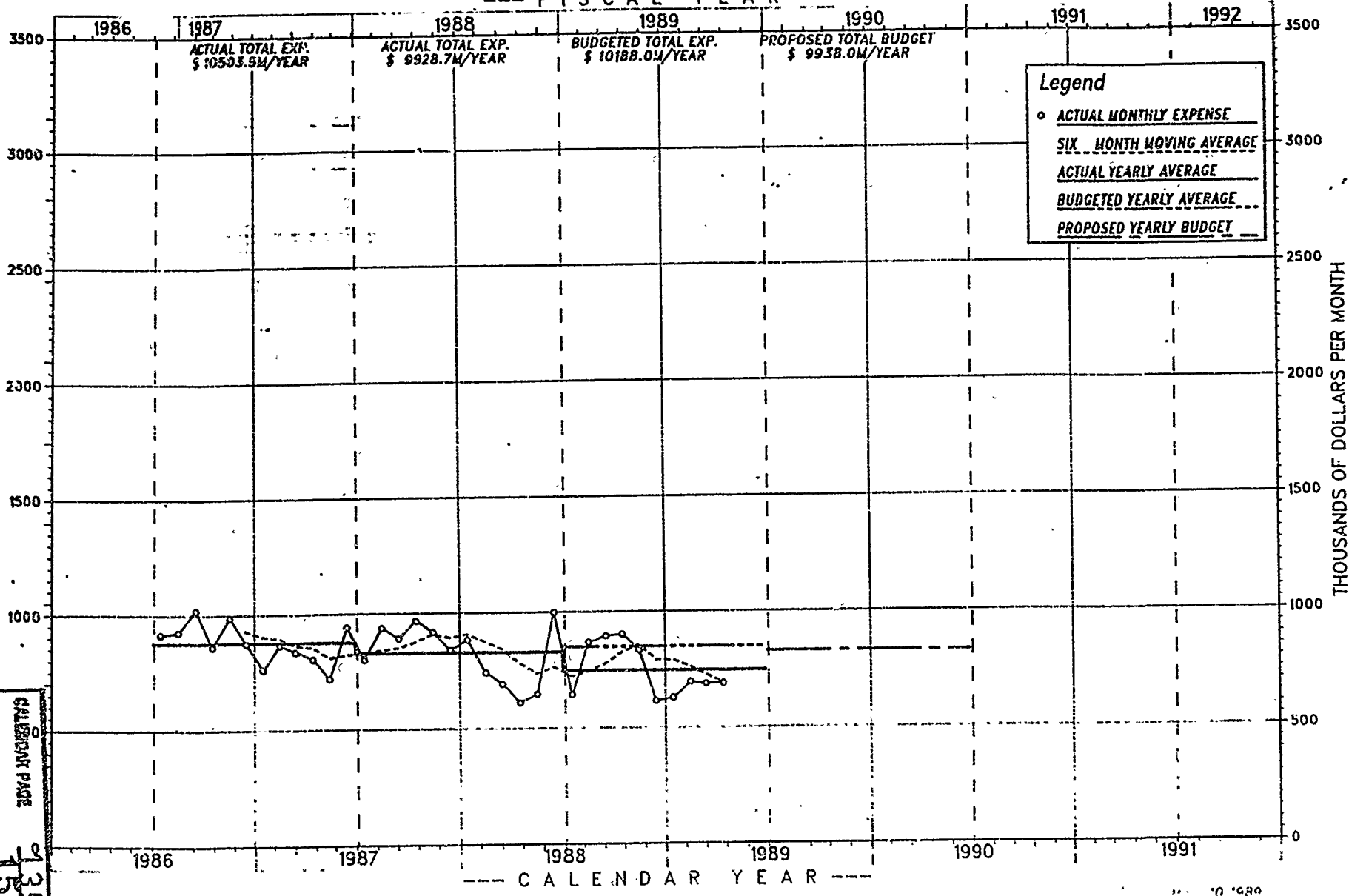
LONG BEACH UNIT  
WATER INJECTION PROGRAM

WATER INJECTION SYSTEMS  
BUDGET CODE 42 --- ACCOUNT CODE 925  
--- FISCAL YEAR ---

WATER INJECTION SYSTEM

EXHIBIT 18

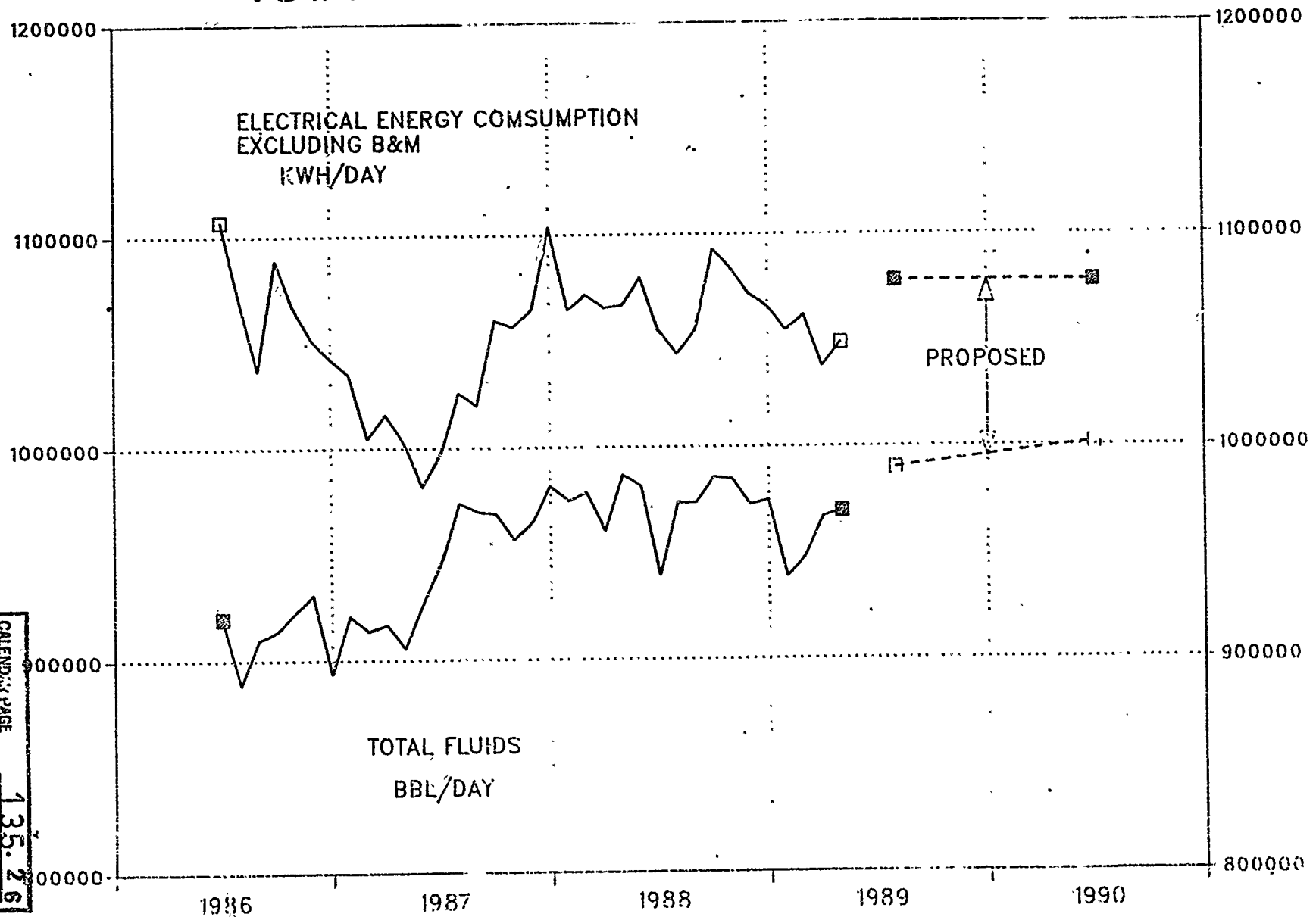
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# LONG BEACH UNIT COMPARISON OF TOTAL FLUIDS & ENERGY CONSUMED

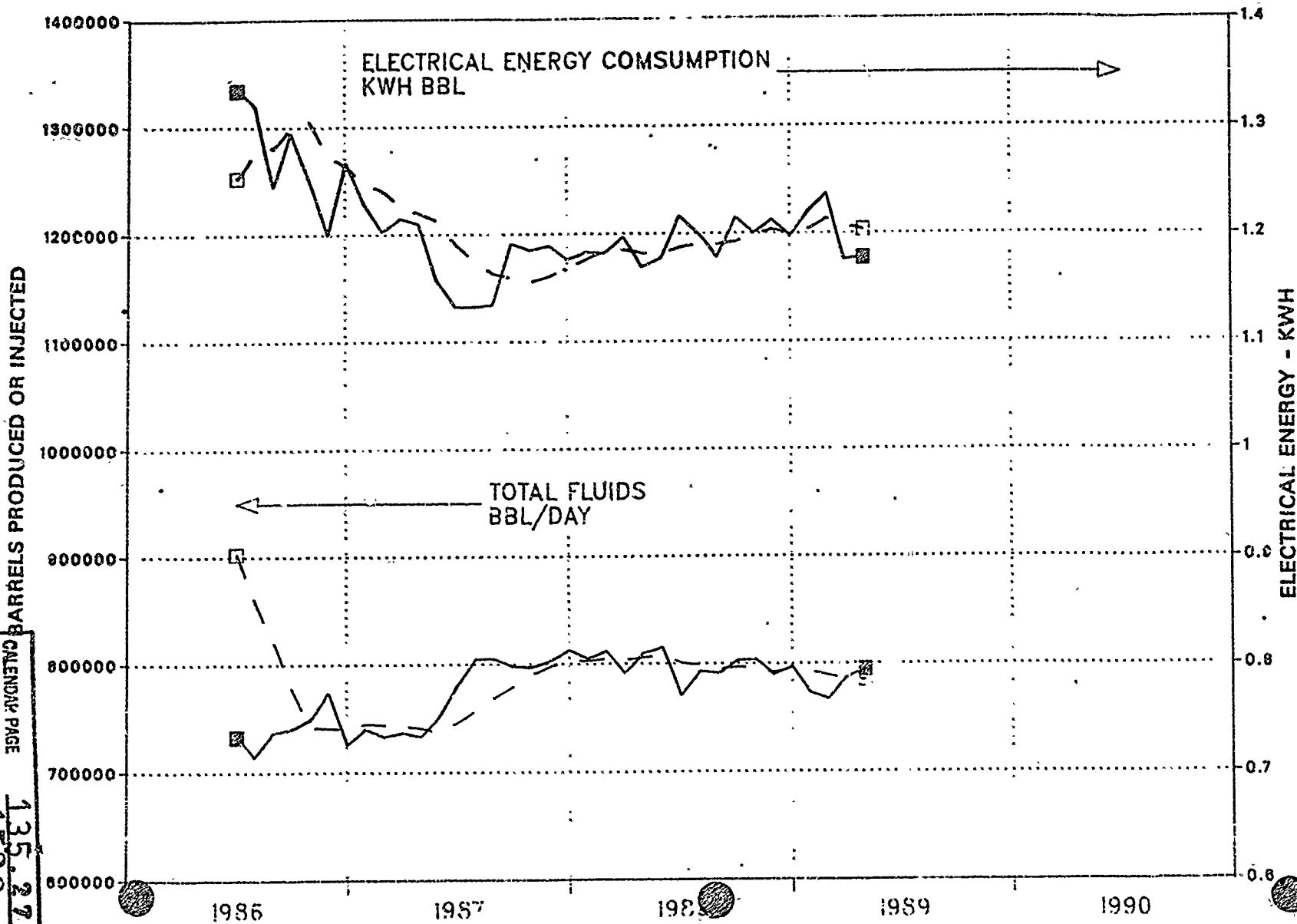
EXHIBIT 19



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# LBU ISLANDS COMPARISON OF TOTAL FLUIDS & ENERGY CONSUMED

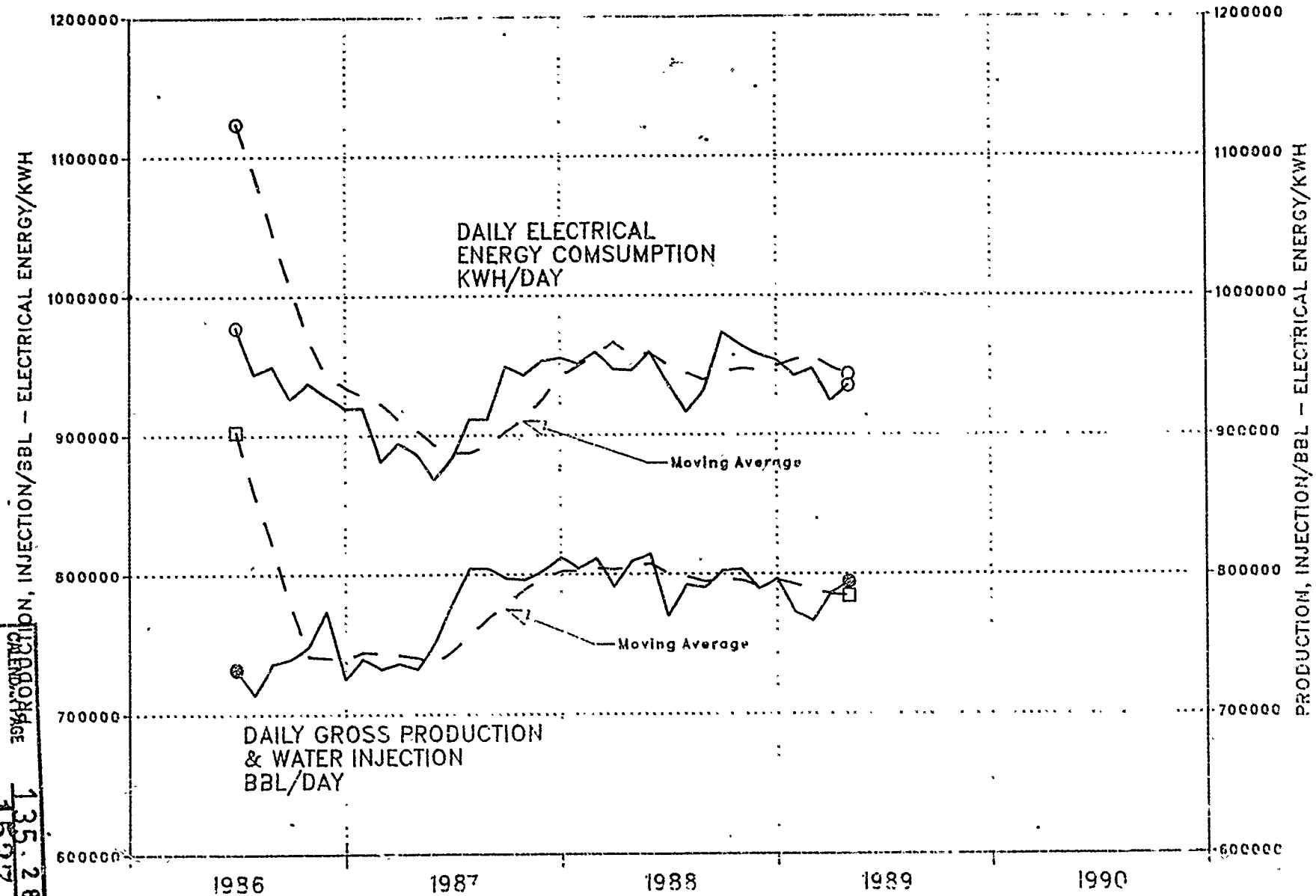
EXHIBIT 20



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**1526**

# LBU ISLANDS COMPARISON OF GROSS PROD, WATER INJ, & ENERGY CONSUMED

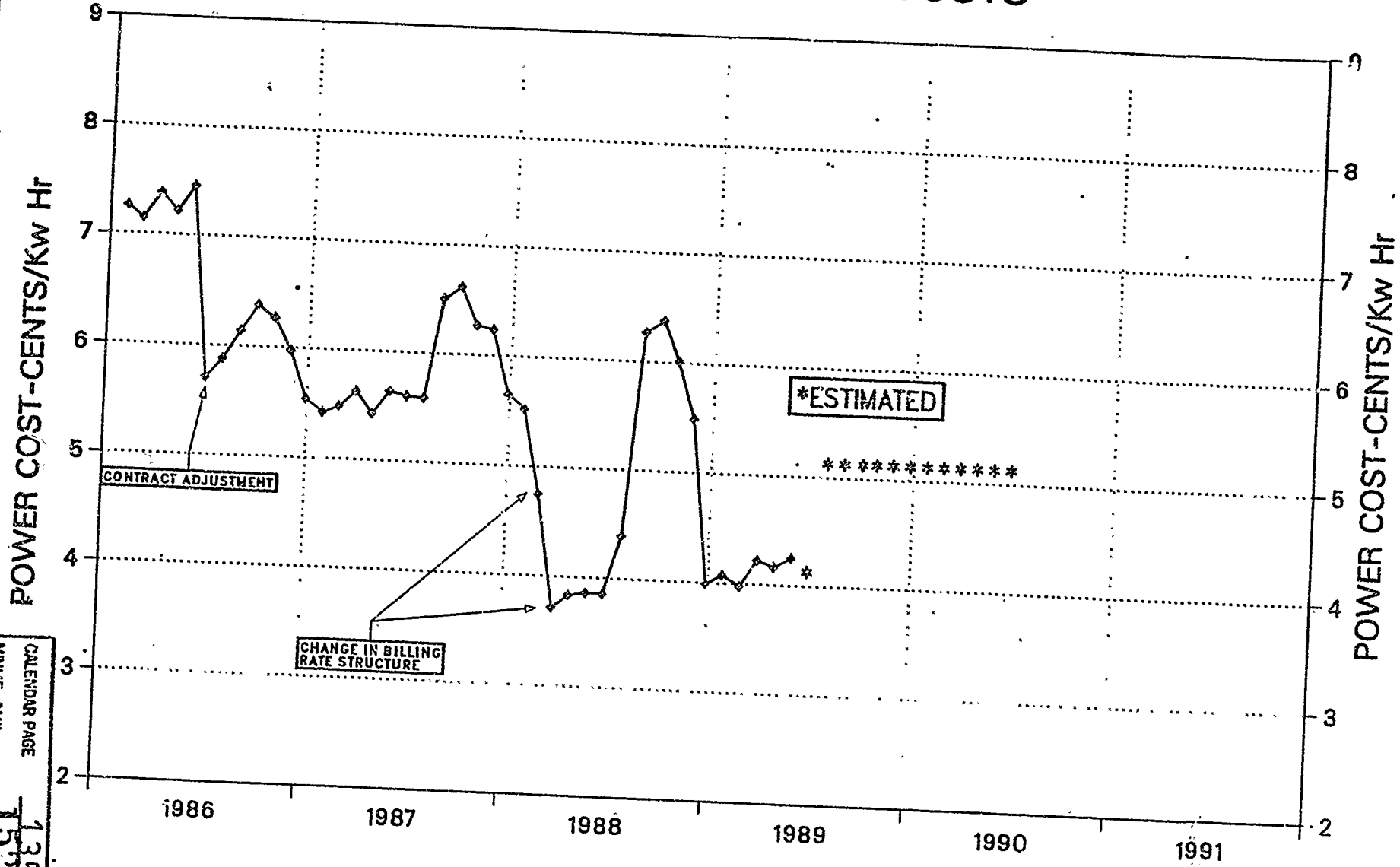
EXHIBIT 21



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# LONG BEACH UNIT ELECTRICAL ENERGY COSTS

EXHIBIT 22

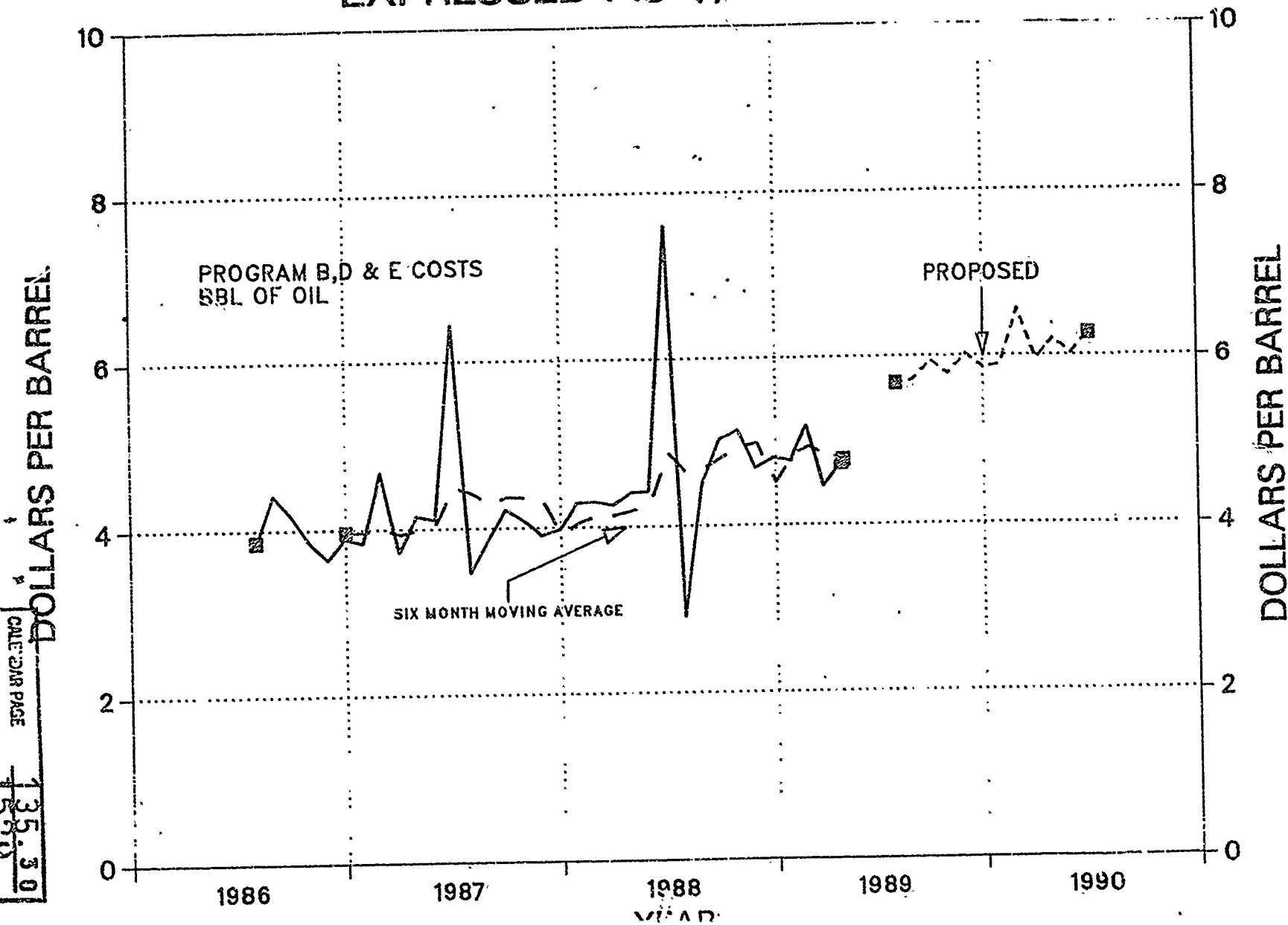


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Nov 8 1980

# OIL & GAS, WATER INJECTION AND MANAGEMENT PROGRAMS COSTS EXPRESSED AS \$/BBL OF OIL

EXHIBIT 23



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