WSLCA
The Western States
Land Commissioners Association

March 18, 1996

MINERALS MANAGEMENT SERVICE
ROYALTY MANAGEMENT PROGRAM
DOCUMENT CONTROL STAFF
MAR 19 1996
RECEIVED
LAKEWOOD, COLORADO

David S. Guzy, Chief
Rules and Procedures Staff
Royalty Management Program
Minerals Management Service
Denver Federal Center, Building 85
P.O. Box 25165, Mail Stop 3101
Denver, CO 80225-0165

Re: Comments on Proposed Rules on Valuation of Oil from Federal and Indian Leases

Dear Mr. Guzy:

The Western States Land Commissioners Association, through its Royalty Management Committee, is submitting the following written comments on MMS's advance notice of proposed rulemaking, as published in the Federal Register on December 20, 1995.

As you are aware, our member states have expressed their concern that posted field prices do not necessarily represent market or prevailing prices for the sale of crude oil. Sales of crude oil are heavily influenced by established market centers. Therefore, MMS must address this significant valuation issue through the amendment of its regulations regarding the valuation of crude oil.

Crude Oil Pricing

To date, the States of Alaska, California and Louisiana have completed significant settlements with certain major oil companies over the issue of crude oil pricing for royalty settlement purposes, as to values above posted field prices.

In addition, certain class action lawsuits have been filed in the States of Texas, Oklahoma and New Mexico over crude oil valuation issues. We understand that crude oil class actions are pending in other states.

Crude Oil - Alternative Valuation Benchmarks

A separate two page summary is attached with the federal questions and the WSLCA-RMC responses. Such document directly addresses the crude oil valuation issue, as presented in part (a) of the notice.

Significant Quantities

Since producers and sellers of crude oil can aggregate field volumes, the relevance of significant quantities may not have a distinct meaning in the market centers, same field or area, etc.

Buy/Sells and Exchanges

The MMS notice was very narrow in its scope. Such notice does not adequately address whether or not buy/sells or exchanges should be taken into account in valuing crude oil. This issue is relevant not just to crude oil not sold in arm's-length transactions, but also to royalty crude oil sold in arm's-length transactions. As a result, this matter should be formally considered in any potential changes to the MMS crude oil valuation regulations.

Separate Responses

We are aware that separate responses are being prepared by the States of Alaska and New Mexico, the California State Controller's Office and the City of Long Beach regarding these proposed rule changes.

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Your consideration of these important crude oil valuation issues will be appreciated.

Sincerely,

Maurice Lierz

MAURICE LIERZ, CHAIRMAN
Royalty Management Committee
Western States Land Commissioners Association
P.O. Box 1148 - Room 219
Santa Fe, NM 87504-1148

RESPONSE OF WESTERN STATES LANDS COMMISSIONERS ASSOCIATION - ROYALTY MANAGEMENT COMMITTEE TO MMS NOTICE OF DECEMBER 20, 1995

I.

INTRODUCTION

This document is a response to the Notice placed in the Federal Register by the Mineral Management Service (MMS), United States Department of Interior, on Wednesday, December 20, 1995, for comments concerning the Valuation of Oil From Federal and Indian leases. This response makes the following principle points:

(1) Posted prices are not a reliable indicator of the market price of crude oil.

(2) Different pricing methodologies should be used in different areas of the country.

(3) Pricing provisions in exchanges or buy/sells (purchases/sales) should not be used to value crude oil.

II.

POSTED PRICES ARE LESS THAN THE FAIR MARKET VALUE OF CRUDE OILS

Posted prices are unilaterally set by each poster. They are not the result of negotiations between buyers and sellers. Posters rarely divulge to the outside world the factors they consider in setting their posted prices. Posters have been reluctant to represent that posted prices represent the fair market value of crude oils. Posted prices have been used by producers and royalty owners because and to the extent that there have been no alternative pricing bases offered by oil companies.

Posted prices are to a great extent an anomaly of the domestic crude oil market. Foreign crudes imported into the United

States are hardly ever priced in reference to postings set by oil companies. Spot contracts, which are not priced on the basis of posted prices, make up roughly 30 percent of foreign crude imported into the United States. [Petroleum Intelligence Weekly's, International Crude Oil Market Handbook, p. B4. Foreign crude delivered to the United States under term contracts are priced according to formulas which do not include posted prices and often rely on spot prices. For example, Saudi and Kuwait crudes are priced on the basis of WTI spot price at Cushing, Oklahoma. [Petroleum Intelligence Weekly, July 24, 1995, Special Supplement, p. 4.] Others, such as Ecuador's Oriente crudes are linked to the ANS spot price on the West Coast. [PIW, 7/24/95, p.4.] Foreign crudes make up about 50 percent of total refinery runs in the United States as a whole. [Oil & Gas Jn.] The important point is that imported foreign crudes are not priced based on the basis of domestic posted prices. Elsewhere in the world, crude oil prices are linked to spot price markets such as Brent. [PIW, 7/24/95, Special Supplement, p. 4.] Indeed over 90 percent of all internationally traded crude oil is priced on the basis of spot prices or spot related prices.

Even major domestic crude oils are not priced exclusively with reference to posted prices. Many domestic crude oils are bought and sold in reference to spot prices. For example, the State of Alaska prices its ANS on a "market basket" approach, which does not rely exclusively on posted prices. For ANS delivered to the Gulf Coast, the market basket of crudes includes Oriente, ANS

Spot (GC), WTS and Dubai. For ANS delivered to the West Coast, the crude oils in the market basket are WTS spot price, Line 63 spot price, THUMS, Kern River, ANS (WC), Dubai (FOB Dubai), Oriente (USGC) and ANS (USGC).

Paul Horsnell and Robert Mabro, two oil industry analysts, have concluded in their book Oil Markets and Prices (Oxford Univ. Press 1993) (pages 231-232):

> Posted prices have not been the result of a competitive market. Gatherers normally attempted to tie particular producers to them by the payment of variable bonuses above posted prices to secure supplies, given the continued decline in the output of US sweet crude oil, and thus posted prices have tended to be lower than those that would prevail under competitive conditions.

A. GULF COAST POSTED PRICES DO NOT REFLECT MARKET VALUE.

Since the late 1980's, posted prices have been increasingly problematic as an indicator of the market value of crudes in the Gulf Coast area.

The evidence that Gulf Coast posted prices do not reflect market value includes the following:

(1) The NYMEX futures market for light, sweet crude exceeds posted prices adjusted for transportation costs from the field to Cushing, Oklahoma.

(2) Spot prices of Gulf Coast crude exceed posted prices.

(3) The P(Posting)-plus market exceeds posted prices

even after adjusting for transportation costs.

(4) Since 1992, the posters have been posting different prices from one another.

(5) One of the posters (Phillips) has admitted that its postings are too low.

(6) State of Texas royalty-in-kind sales have yielded prices in excess of postings.

(7) Arco settlements with royalty owners have included payments in excess of posted prices and Arco now uses spot prices not postings as the basis of payment for royalties.

1. The Light Sweet Crude Contract On The NYMEX Has Consistently Been Above Posted Prices.

The futures contract for light sweet crudes on the NYMEX at Cushing, Oklahoma began in 1983. The development of the NYMEX contract was an outgrowth of the development of spot markets for crude oil in the early 1980's. It was developed as a hedging mechanism to protect buyers and sellers in the forward (spot) market. The NYMEX market displays all the qualities of a very competitive market. The NYMEX market contains a large number of sellers and buyers of a homogeneous product. The large integrated oil companies comprise 21% of the traders on the NYMEX. A large volume of crude is traded on the NYMEX. By 1992, there were 27.5 billion barrels traded. By 1993, there were 150 million barrels per day traded. NYMEX is the fourth largest futures market in the world. Oil Markets and Prices, Horsnell and Mabro, Oxford 1993, p. 225. Its light, sweet crude oil contract is by far the most actively traded commodity futures contract in the world. Id. The crude oil most predominantly traded on NYMEX is the WTI delivered at Cushing, Oklahoma.

NYMEX is a public market. Its electronic trading system allows NYMEX trading 24 hours a day. There are no barriers to entry. It is an efficient and essentially costless information system. The price which results for WTI on the NYMEX represents the consensus results of decisions of many thousands of independent market participants. In short, the futures contract on the NYMEX is an excellent indicator of the market price of WTI at Cushing, Oklahoma.

WTI postings on the other hand are consistently well below the NYMEX price even when transportation, gathering and handling costs to move WTI from the field to Cushing are taken into account. Graph 1 presents a comparison of the NYMEX price relative to the posted price of WTI adjusted by $.65 per barrel to transport to Cushing. As can be seen in recent years, the difference has averaged over $.75 per barrel. In contrast, the spot price for WTI at Cushing or at Midland is generally equal to the NYMEX futures price, when adjusted for transportation. See Graph 5.

Because the oil traded on the NYMEX is priced by competitive forces, the buying and selling of "wet" barrels has become linked to NYMEX as NYMEX became the new pricing benchmark. In fact the price quoted on the NYMEX for WTI has become a market benchmark for the pricing and valuing of many domestic crude oils. It also provides a dominant international price signal. Saudi

Arabia and other OPEC producers link their term contract prices for crudes landed in the United States to the WTI price on the NYMEX.

2. **Spot Prices Of Gulf Coast Crudes Exceed Posted Prices.**

A substantial spot market has developed for Gulf Coast crude oils. These spot prices are consistent with NYMEX prices but are inconsistent with posted prices. For example, the spot price of WTI at Midland is consistently higher than the posted price of WTI but it is almost identical to the price of WTI on the NYMEX when transportation, gathering and handling costs are subtracted from the NYMEX price. See Graph 2. Similarly as Graph 3 indicates, the spot price for WTS has been higher than the posted price for WTS averaging over $2 per barrel difference in the last four years. These graphs adjust for field transportation to Midland, TX, the location of the spot market quotation. Graph 4 compares the posted price of Oklahoma crude to the NYMEX at Cushing. But the spot price for WTI at Cushing is virtually identical to the NYMEX price for WTI, as can be seen in Graph 5.

3. **The P-Plus Market Exceeds Posted Prices.**

The divergence between the posted price for WTI and the WTI price on the NYMEX at Cushing has led to the creation of the P-Plus market. Many producers are no longer paid on the basis of postings but on the basis of postings plus a bonus. This practice of paying bonuses above posted prices has developed to such an extent that Platt's Oilgram quotes a premium over the posted prices for deliveries next month the producers and buyers agree on. The premia is quoted at Cushing, Oklahoma and therefore an element of the premium does reflect transportation costs of moving WTI to that location. Even after deducting these costs of $.65 per barrel,[1] however, there is a significant premium or bonus reflecting the artificiality of posted prices. The quoted premium, which is always stated in terms of Koch's WTI posting is plotted on Graph 6.

4. The Posters Have Been Posting Different Prices Since 1992.

A further indication of the artificiality of posted prices is the fact that since 1992 the posters in the Gulf Coast area have been posting different prices for the same crude oils. Exxon has been consistently posting a higher price for some of the crudes for which it posts and Koch, Texaco and Marathon have been consistently on the low end and other companies have been between those two postings. In a number of fields, different posters have been posting consistently different postings for the same crude oils. A comparison of these various companies' posted prices is set out in Graph 7. A feature of the posted price market is that even though the posted prices for WTI do not match the futures price of WTI on the NYMEX even after adjusting for gathering, handling and transportation, they now move in step with NYMEX although at a lower level.

Historically, posted prices did not change with daily

[1] This cost may significantly overstate the true cost of moving crude from West Texas to Cushing because the oil companies frequently engage in exchanges which have the effect of reducing their transportation costs below the published tariff rate. the $.65 per barrel figure is based on common carrier tariffs and company estimates of moving WTI from the field.

fluctuations in the crude oil markets but were changed on a less frequent basis to provide a kind of average lease price basis. By the mid-1980's, the spot market for domestic crudes had developed to such an extent that postings changes had became much more frequent than they had been in the past. For example, from 1981 through 1985, Exxon had less than 10 posted price changes per year for its East of Rockies postings. From 1986 through 1989 it had no more than 40 changes in posted prices. Beginning in 1990, however, Exxon's posted price changes increased dramatically. By 1994, Exxon had nearly 110 posted price changes, or more than one for every three working days. The number of changes in Exxon's East of Rockies posted prices is set out in Graph 8. In summary, posted prices clearly do not reflect the industries perception of the crude oil market any longer. The frequency of changes and the disagreement among the posters as to what the posted price level should be have undermined any confidence in the objectivity of these posted prices.

5. Phillips Petroleum Made A Significant Admission That WTI Postings Were Below Market.

Platt's Oilgram for March 11, 1992 reported that Phillips was going to increase its posted price for WTI. According to Platt's, the reason Phillips gave for the posted price increase was its belief that the posted price for WTI should equal the NYMEX futures price less the cost of transporting it to Cushing, Oklahoma. Up until March 1992, Phillips' posting was less than the NYMEX price of WTI less transportation to Cushing. Phillips announced that it wanted to abolish its practice of paying bonuses over posted price in selective fields to selective producers. Subsequent to the announcement in Platt's, Phillips' postings increased for a few months but then fell back to old levels. The significance of Phillips' statement is that the statement confirms our view that the NYMEX futures price is a valid indicator of the value of WTI and that postings of WTI in the field were below market value.

6. Other Market Indicators Demonstrate That Posted Prices Of Gulf Coast Crudes Are Underpriced.

The State of Texas entities (the Texas General Land Office and the University of Texas lands) conduct royalty-in-kind sales of its crude oil. These sales have yielded prices in excess of postings. In addition, in 1992 Arco voluntarily paid $534,000 to the Texas General Land Office for the reason that past payments to royalty owners were based on postings and these postings were below market value. Texaco has paid the State of New Mexico approximately $4 million because of past underpayments for royalty crude oil which payments were based on posted prices.

B. CALIFORNIA POSTED PRICES ARE LESS THAN THE FAIR MARKET VALUE OF CALIFORNIA CRUDE OILS.

The evidence is overwhelming that the posted prices of California crude oil are less than the market value. The evidence includes:

(1) ANS landed in California is consistently priced higher than posted prices for comparable California crudes and ANS is

consistently priced higher than posted prices for all other California crudes, even when the California crudes are adjusted for quality differences;

(2) Arco sales of Wilmington crude oil;

(3) Spot prices of California crudes, especially in the spot market centered on Arco's Line 63;

(4) Bonuses paid for California crudes;

(5) Admissions by independent refiners that they could not obtain needed crude supplies without paying premia over posted prices;

(6) Studies by the Federal Trade Commission and the Department of Energy, which concluded that California postings were underpriced.

We now describe this evidence in more detail.

1. <u>The Landed Price Of ANS In California Demonstrates That The Postings For California Crudes Were Underpriced</u>.

From the time that ANS was first delivered to California in the late 1970's to the present, it had consistently sold at prices far in excess of California crude oils. This is true both for crudes of comparable quality, such as, Ventura crude oil, adjusted for transportation to Los Angeles, or California crudes of lower quality adjusted by the quality adjustments in the posted prices.

ANS crude oil is a major refinery feed on the West Coast and competes directly with California crude oils. ANS was widely available to California refineries during the period 1986 to the present. During that period, California refiners ran ANS crude, representing over 35% of the total crude run in California refineries. ANS was regarded as the swing crude to augment refinery runs. During the 1980's, the market price of ANS on the West Coast ranged from 50¢ to $3.50 per barrel higher than posted prices of similar California crudes adjusted for location.

The wide disparity between the landed cost of ANS and the posted price of California crudes demonstrates that the postings of California crudes were too low. Graph 9 illustrates the difference between 1987 and the present. This graph compares the ANS spot price delivered to Los Angeles vs. the delivered cost (posted price plus transportation costs) of a California crude of comparable quality. Because California crudes compete with ANS as a source of supply within the same market, the market value of California crudes and ANS delivered to the same location should be similar after adjustments for differences in quality between the two. There is no competitive explanation for the persistent and long-lasting diversions between the prices of the two crudes.

2. <u>The Spot Prices Of California Crudes, Especially Line 63 Crude Oil, Have Consistently Been Above Posted Prices</u>.

Publicly reported spot prices of California crudes in Platt's Oilgram have consistently exceeded posted prices. A spot market for light California crude centering around Arco's Line 63, which is a common carrier, has consistently yielded premia above posted prices. Graph 10 presents a comparison of the spot price of Line 63 crude with the posted price of Buena Vista crude adjusted for transportation using the Four Corners Pipeline tariff. Because these prices are publicly available, all of the oil companies operating in California, including the posters, are aware that spot prices have consistently been above postings. In a competitive market, one would expect that the spot price and the posted price of crude oils would not always be identical. However, one would expect that spot prices would sometimes be above and sometimes below posted prices in the competitive market. But the spot market price has consistently exceeded posted price. Graph 11 presents a similar comparison of the spot price of Wilmington crude oil with its posted price. There is a sizable difference in price between the two although the volume traded in this spot market is small.

3. <u>Bonuses Were Consistently Paid For Sell-Offs Held By The Federal And State Government</u>.

Sell-offs from the Elk Hills Naval Petroleum Reserve and sell-offs by the State of California and the City of Long Beach since the early 1970's have always yielded bonuses above posted price. These sales are term sales of six months to two years in duration. Even some of the Majors which post have bid bonuses on the State and City sell-offs. Graph 12 presents data on the premia bid over posted price on these sell-offs.

4. <u>Arco Sales Of Wilmington Crude Oil Show That The Posted Prices Were Too Low</u>.

The City of Long Beach and Arco entered into a contractual arrangement whereby Arco sold the City's trust crude oil to third parties. Since 1990 when that agreement was initiated, the prices received have always averaged higher than posted prices for Wilmington crude oil. Graph 13 presents data on the premia realized by Arco on its sales of crude.

5. <u>Texaco And Independent Producers And Refiners Have Stated Publicly That California Posted Prices Were Too Low And Below Market Value</u>.

In 1984 when the FTC was investigating the Texaco/Getty merger, the FTC announced its requirement that Texaco continue to sell crude oil to Getty's traditional purchasers, who were independent refiners. A Texaco official wrote to the FTC, objecting to the proposed requirement, on the ground that California posted prices were below market value. Texaco was concerned that forcing it to sell crude oil at posted price to independent refiners would be to sell at a price that was below market value.

A number of independent refiners have commented to the Federal Trade Commission and the Department of Commerce that they have been unable to obtain California crude oil at posted price. They have paid bonuses and premia of as much as $3.00 per barrel to obtain California crude oil.

6. <u>The Federal Trade Commission And The Department Of Energy Have Acknowledged The Underpricing Of California Postings</u>.

The FTC, when it was evaluating the competitive effects of the Texaco/Getty merger in 1984, examined the California marketplace and concluded that there was a "two-tier" market for California crude oil in which the posters paid posted price, but other oil companies, especially the independents, were forced to pay premia above postings. Fed. Reg., March 7, 1984, p. 8561. In 1987, the Department of Energy published a study entitled California Crude Oil Price Levels, in which the authors could find no plausible explanation for the extent to which California posted prices were depressed below prices of crude oils produced elsewhere in the country. The Department of Energy also studied the effects of lifting the ANS export ban and concluded in 1994 that California crude oils were underpriced by $1.00 to $2.60 per barrel.

III.

DIFFERENT PRICING METHODOLOGIES SHOULD BE USED FOR DIFFERENT CRUDE OIL MARKETS

MMS should not impose a single pricing methodology on royalty oil produced in various parts of the United States. Crude oil produced in the Gulf Coast is in a separate market than crude oil produced in California. Likewise, there is no reason to value crude oil produced in Alaska according to exactly the same methodology as used to value California and Gulf Coast crudes. Any pricing regulations should be flexible to accommodate features unique to different markets and crudes.

IV.

POSTED PRICES USED IN EXCHANGES AND BUY/SELLS ARE NOT REPRESENTATIVE OF THE MARKET VALUE OF THE CRUDE OILS IN THE TRANSACTIONS AND SHOULD NOT BE USED TO VALUE CRUDE OIL

Oil companies frequently enter into exchanges or matched buy/sells in order to accomplish transportation on other companies' pipelines, obtain crude oils in more desirable locations or obtain crude oils with more desirable qualities. Most of the exchanges and buy/sells contain pricing provisions linked to posted prices. But the absolute value of posted prices are irrelevant in these transactions. As long as the transactions are of roughly equal volume and the pricing provisions reflect the relative value of the differences in the crudes exchanged, the oil companies can set posted prices at any level and not be economically disadvantaged.

An example makes this clear. Assume an exchange of Crude A for Crude B where the market value of Crude A is $17 per barrel and the market value of Crude B is $15 per barrel. As long as the pricing provisions preserve that $2 per barrel difference in value between the two crudes, the actual prices referenced in the exchange can be set at any level. The posted prices for the two crudes could be set at $10 per barrel and $8 per barrel respectively and neither party to the exchange would be financially hurt by pricing the crudes at posted price. To generalize this point, when posted prices are used on both sides of an exchange or buy/sell wherein roughly equal barrels are transferred, the oil companies have no incentive to insure that posted prices reflect the market value of the crudes exchanged. Their only incentive is to insure that posted prices reflect the relative value differences between the crudes exchanged.

The major oil companies have an incentive for low posted prices because they are net buyers and lower posted prices result in lower royalties and taxes. They have no offsetting incentives for high or market based posted prices in their exchanges or buy/sells, but only an incentive that the prices in these transactions reflect the relative differences in values of the crudes.

Oil companies can benefit by low posted prices even if the volumes of crude transferred on exchanges and buy/sells are not exactly the same on both sides of the transactions. Oil companies can accept imbalances on exchanges and buy/sells when posted prices are undervalued provided that gains achieved by reduced royalties and taxes outweigh the losses achieved on imbalanced exchanges and buy/sells.

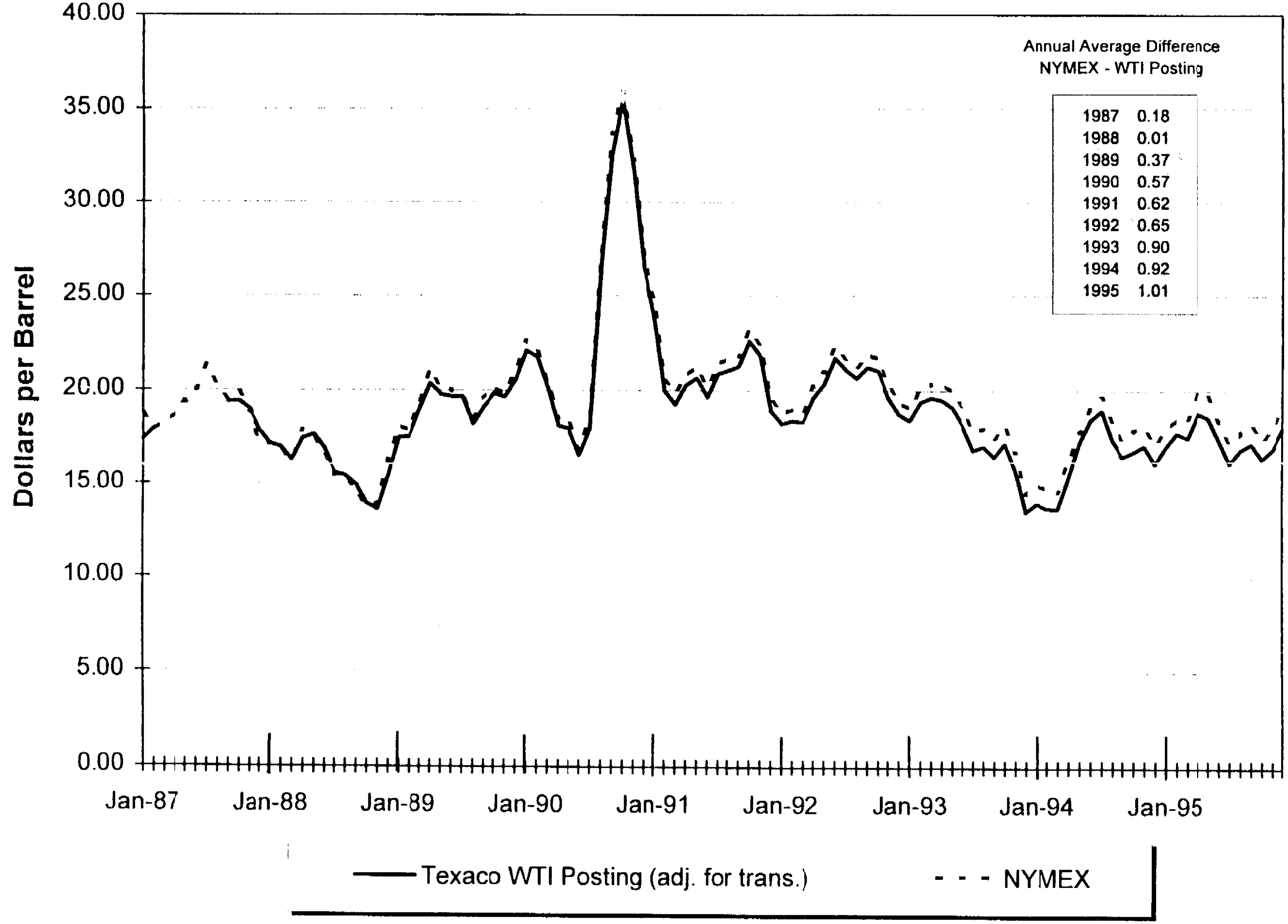
Incentives for low posted prices are consistent with imbalances on specific exchanges or buy/sells. Oil companies can tolerate imbalances on exchanges where they are selling more crude than they buy at posted prices as long as their exchanges as a whole balance. For example, a company can accept losses by selling one hundred barrels of crude more than it buys at underpriced postings on one exchange provided that it buys one hundred barrels of crude more than it buys at underpriced postings on other exchanges.

Prices contained in exchanges or buy/sells should not be used to value royalty crude oil. Oil companies have no incentive to have the prices in these transactions equal the market value of crude oil. If these prices are used to set royalties and taxes, oil companies have an incentive to have the prices in exchanges and buy/sells set low.

The problems associated with exchanges and buy/sells arise also in the context of crude oil not sold pursuant to arms'-length contracts. 30 C.F.R. §206.102(c)(3) and (4) refer respectively to "arm's-length contract prices" and "arm's-length spot sales." We propose that prices contained in exchanges and buy/sells not be used pursuant to §206.102(c)(3) and (4) for the reasons discussed above.

Texaco WTI Posting vs. NYMEX

1987 - 1995

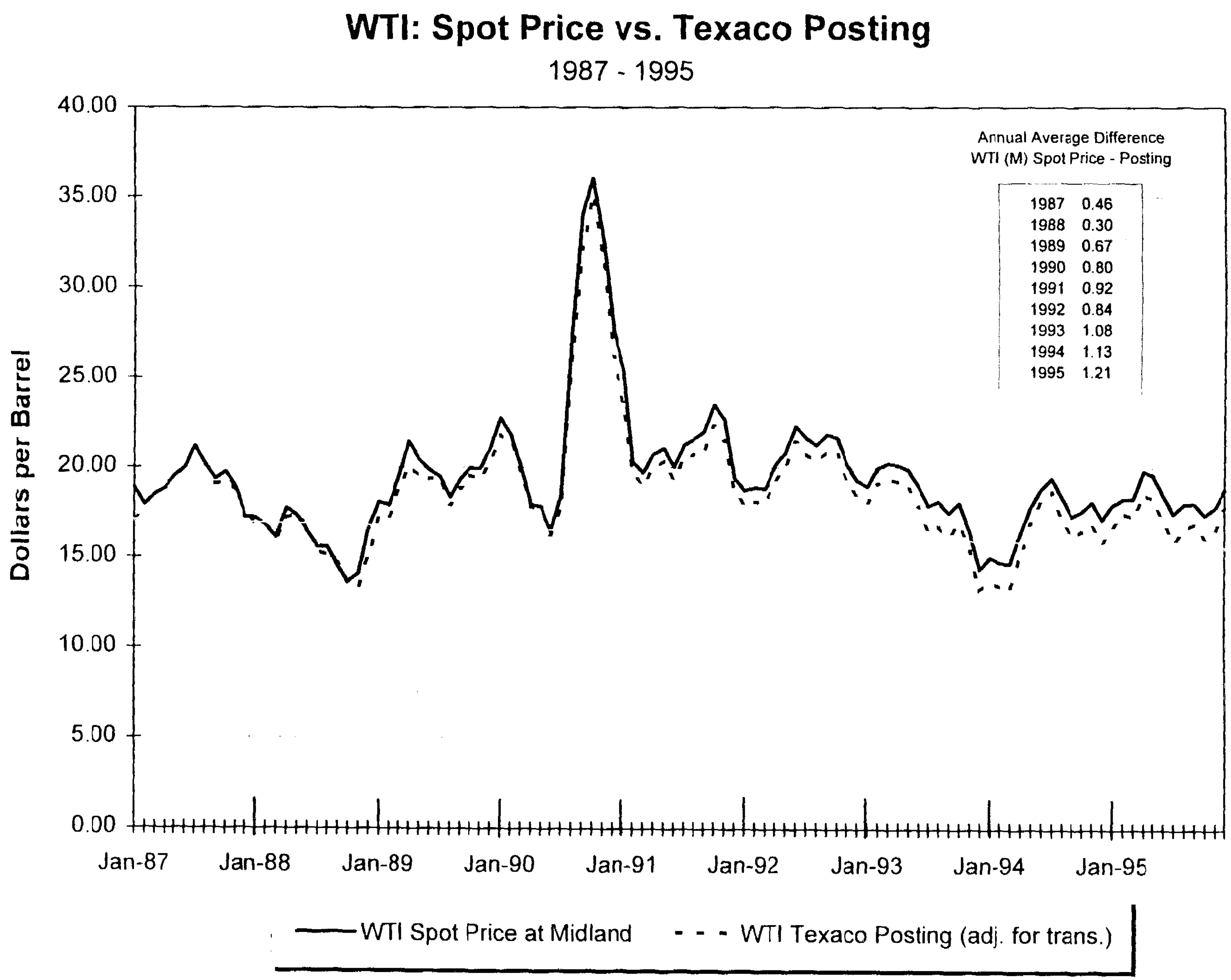


Sources: NYMEX: Reuter's.

Posted Prices: Texaco posted price bulletins; adjusted for transportation to Cushing, OK.

GRAPH 1

All prices are monthly averages.



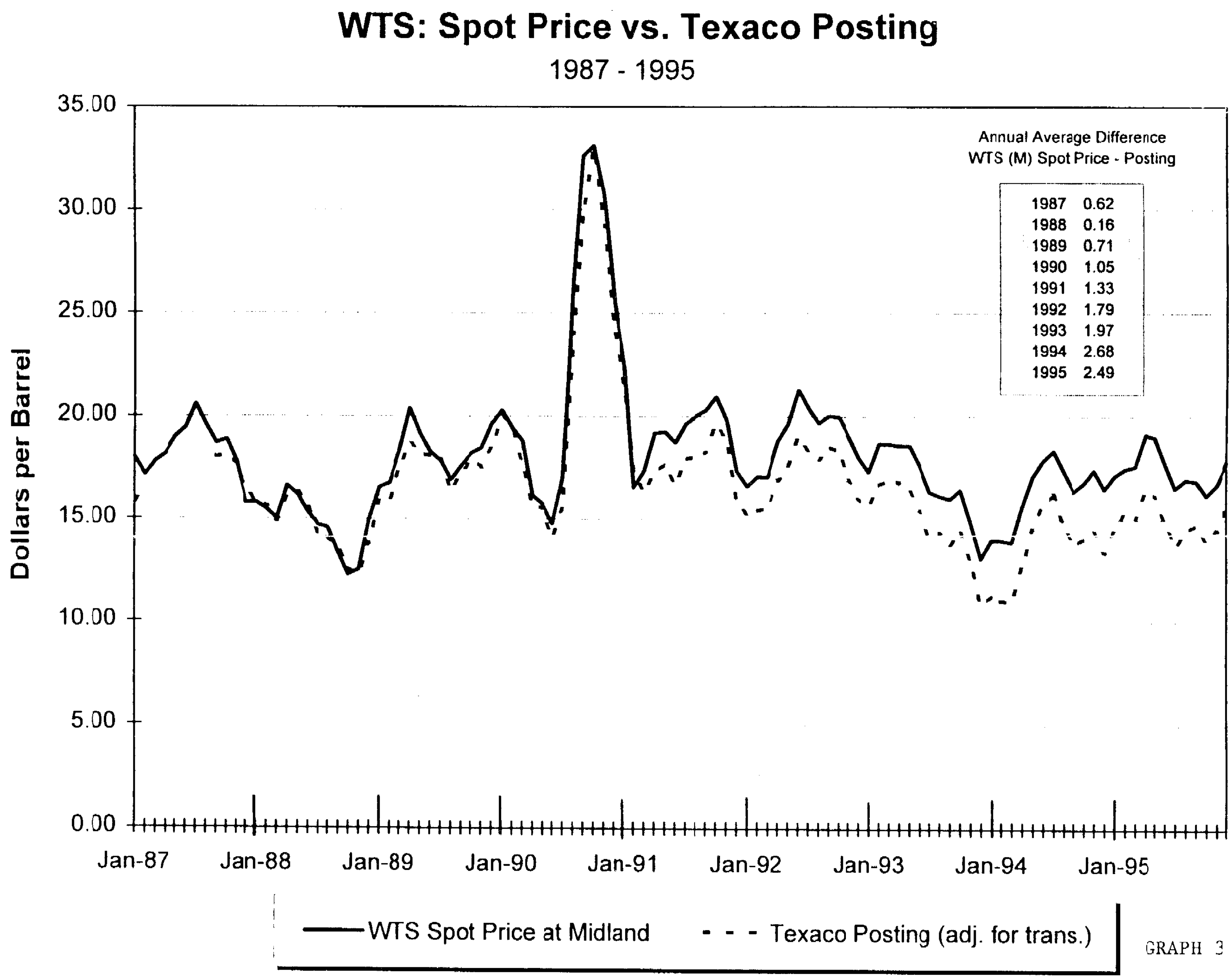
GRAPH 2

Sources. WTI Spot Price: Platt's

Posted Prices Texaco posted price bulletins; adjusted for transportation to Midland, TX.

Texaco does not post prices between March and August 1987.

All prices are monthly averages



GRAPH 3

Sources: WTS Spot Price: Platt's.

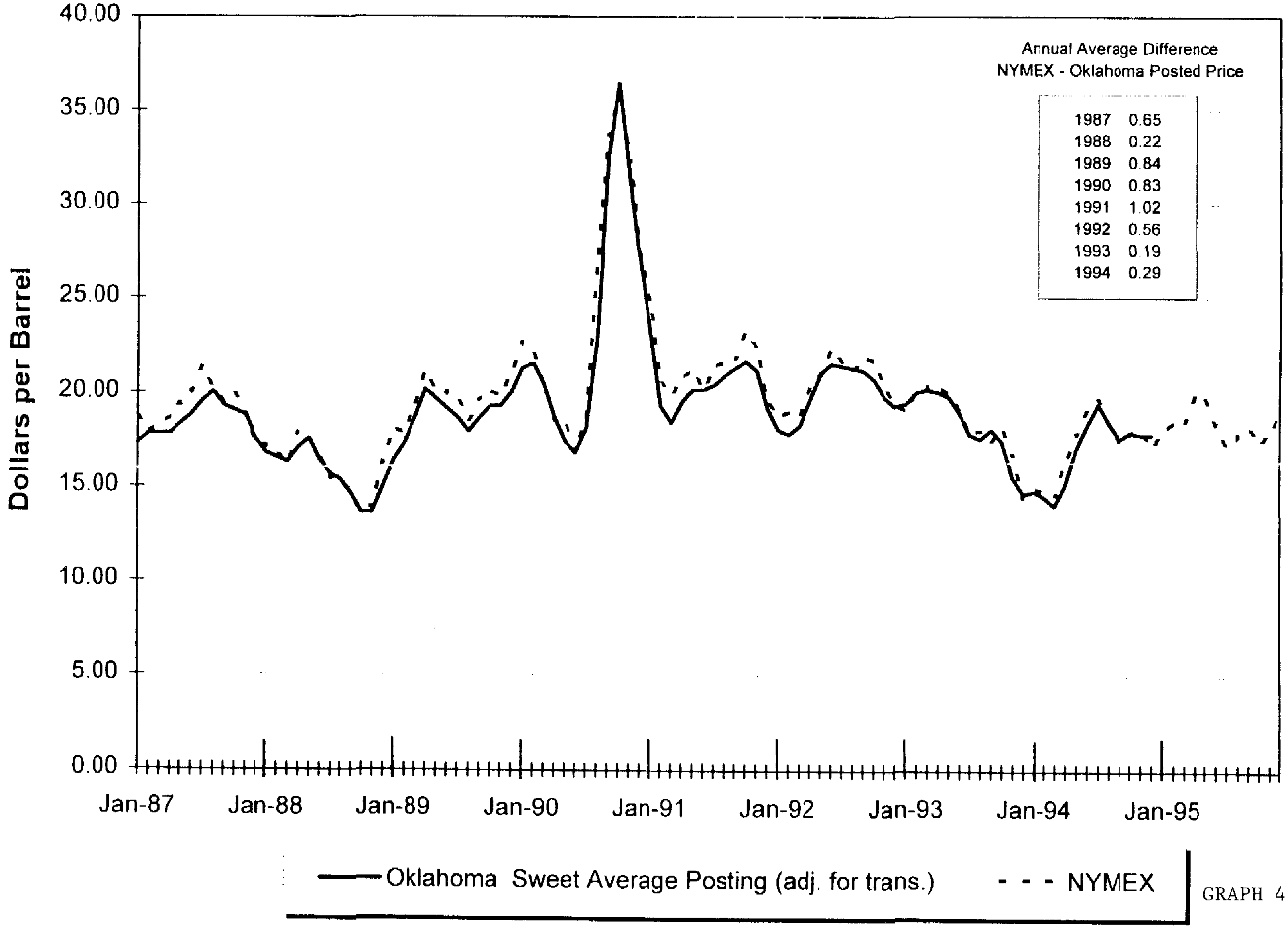
Posted Prices: Texaco posted price bulletins; adjusted for transportation to Midland, TX.

Texaco does not post prices between March and August 1987.

All prices are monthly averages.

Oklahoma Posted Price vs. NYMEX

1987 - 1995

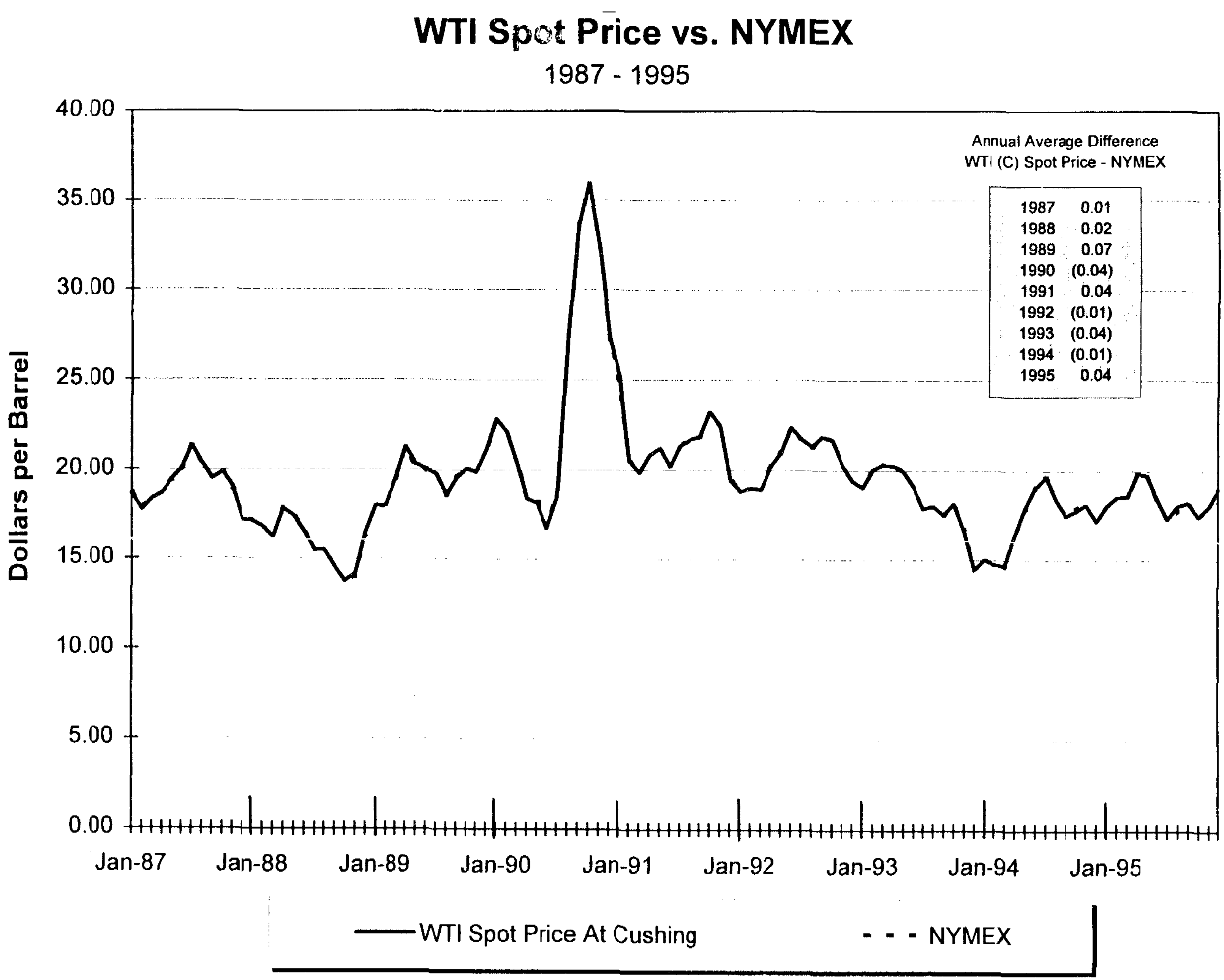


1987	0.65
1988	0.22
1989	0.84
1990	0.83
1991	1.02
1992	0.56
1993	0.19
1994	0.29

GRAPH 4

Sources: NYMEX: Reuter's.
Posted Prices: Oil and Gas Journal; adjusted for transportation to Cushing, OK.

All prices are monthly averages.



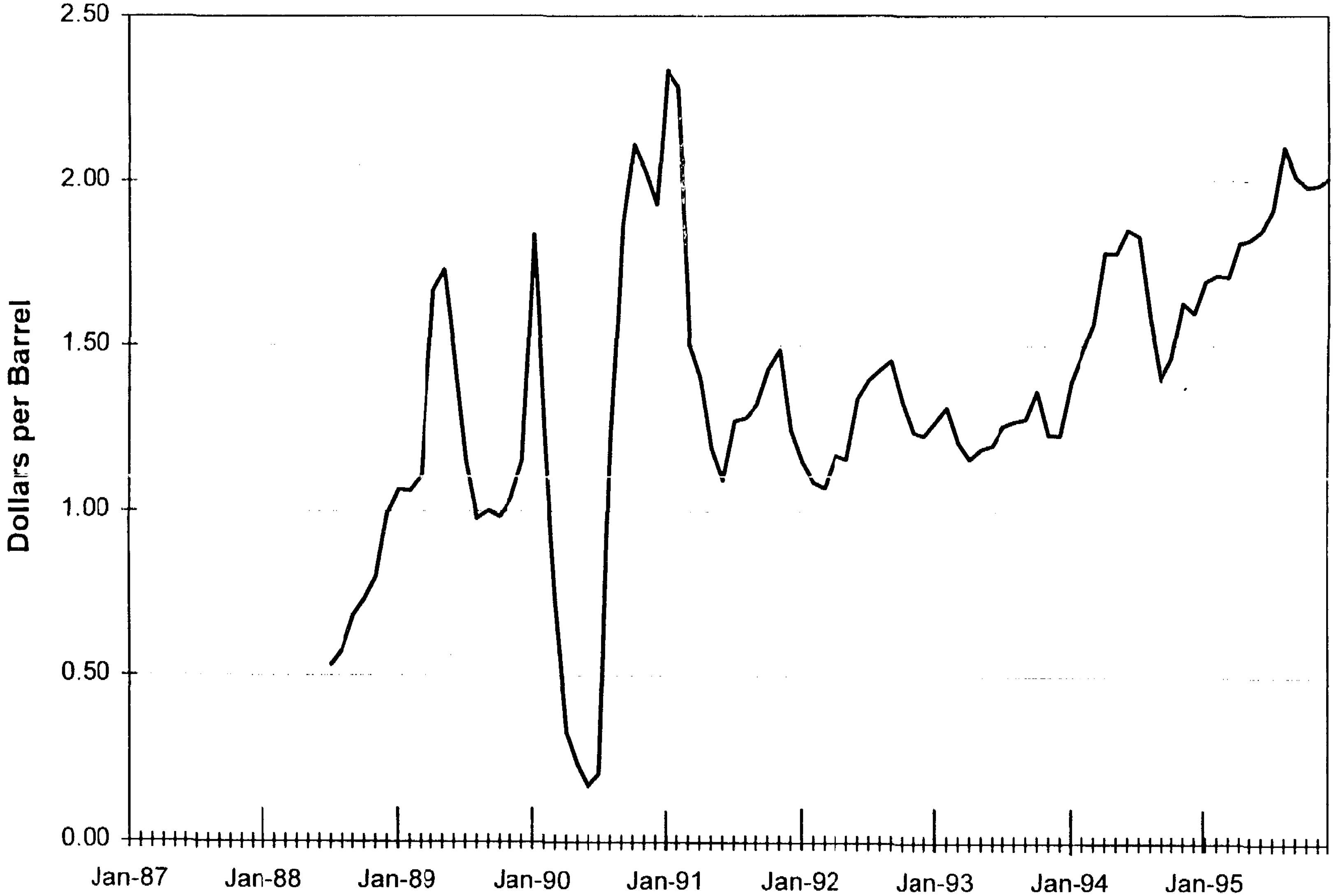
GRAPH 5

Sources: WTI Spot Price: Platt's.
NYMEX: Reuter's.

All prices are monthly averages.

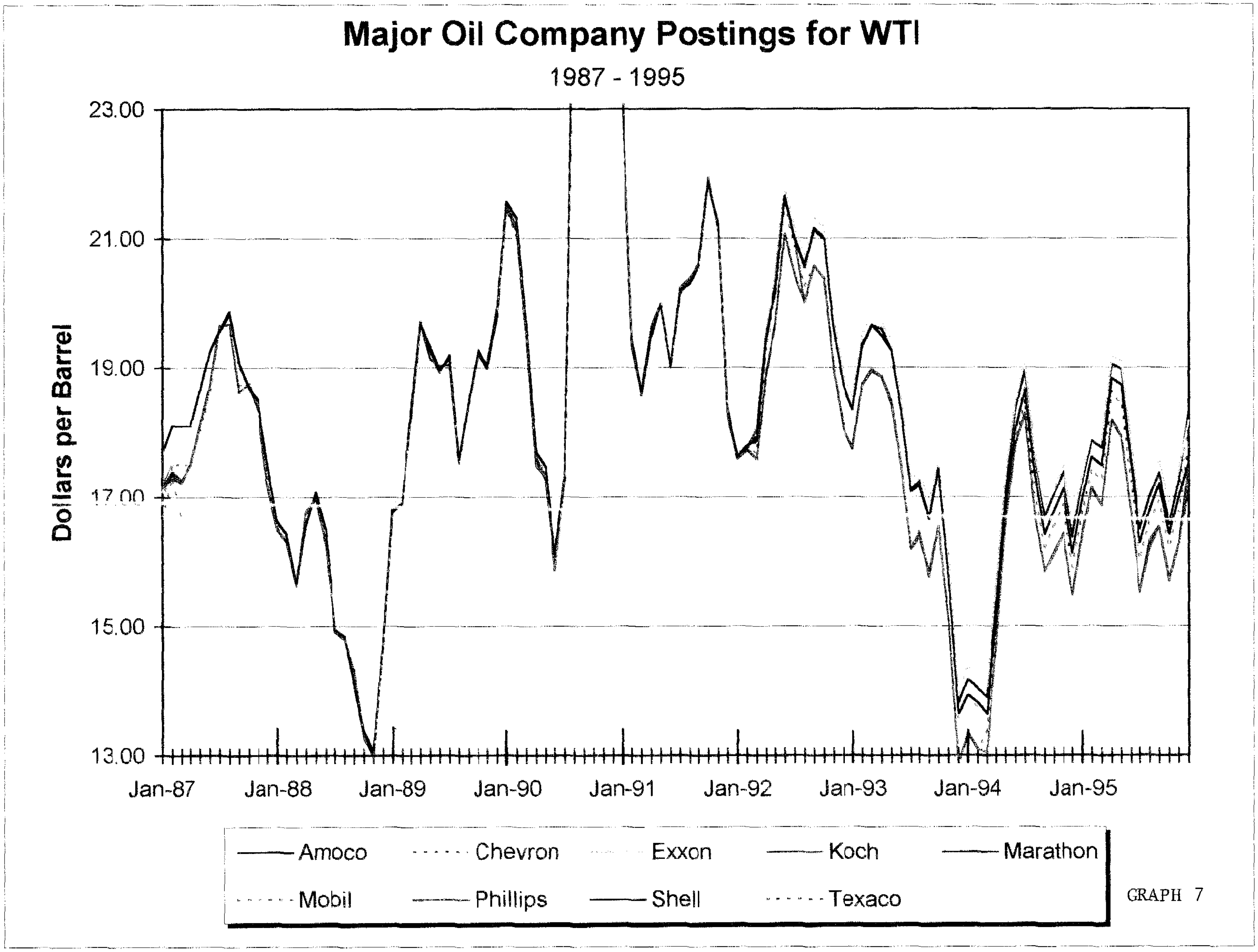
Premium Over Koch's WTI Posting

1987 - 1995



GRAPH 6

Premium reported beginning July 1988.
Source: Platt's



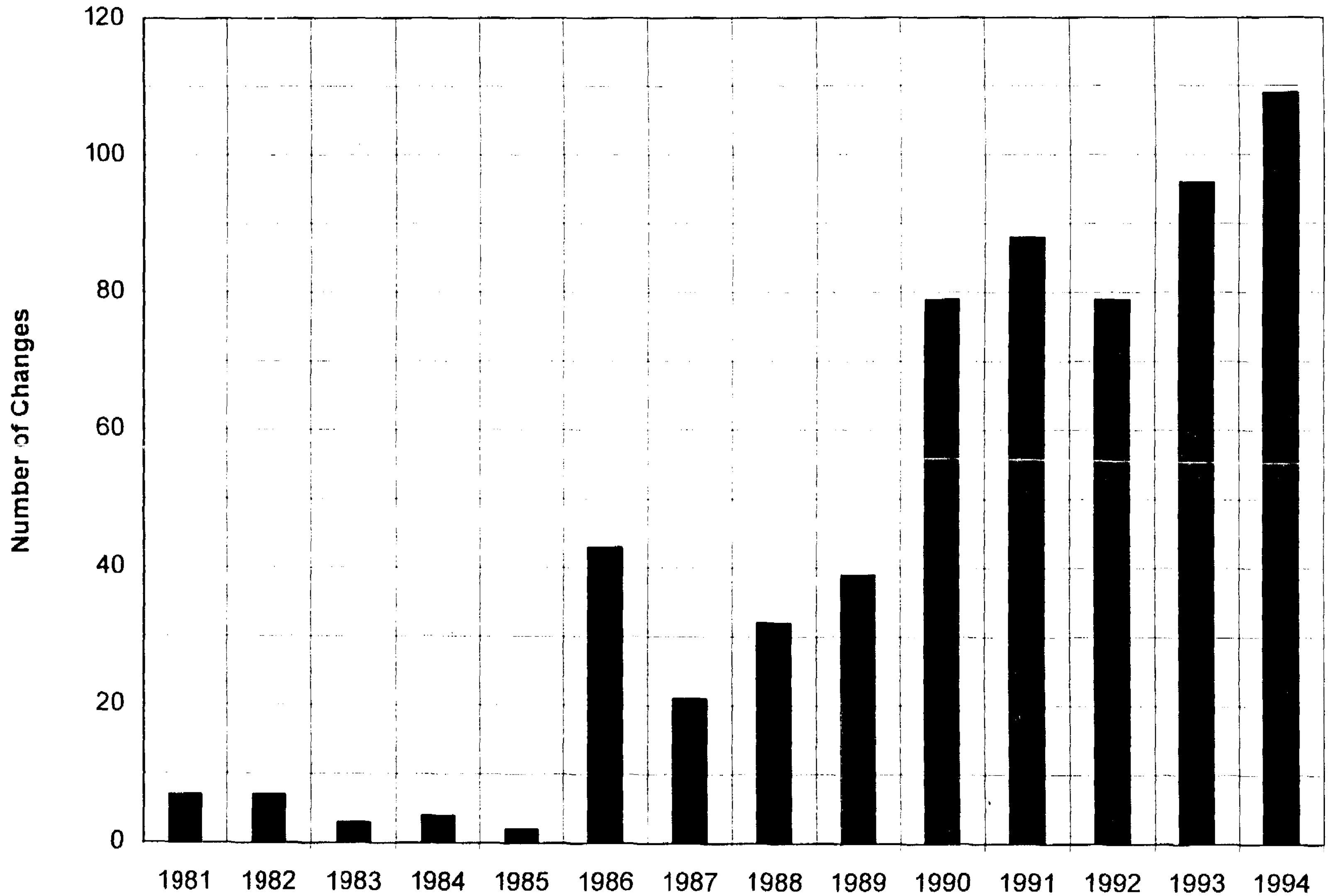
GRAPH 7

Sources: Company posted prices bulletins and Platt's.

All prices are monthly averages.

Number of Changes in Posted Prices

1981 - 1994

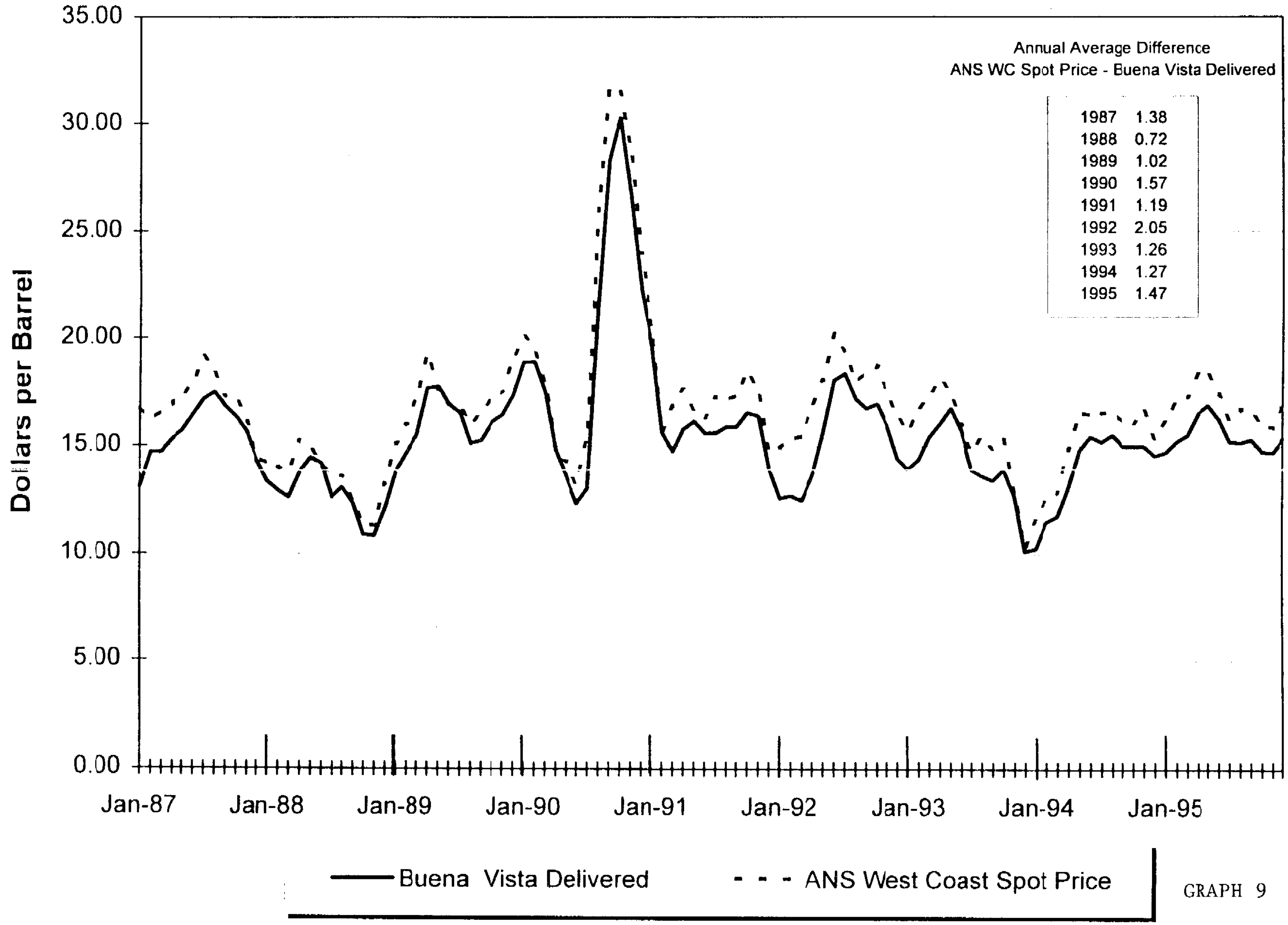


Source: Exxon posted price bulletins East of the Rockies.

GRAPH 8

Buena Vista Delivered to L.A. vs. ANS West Coast Spot Price

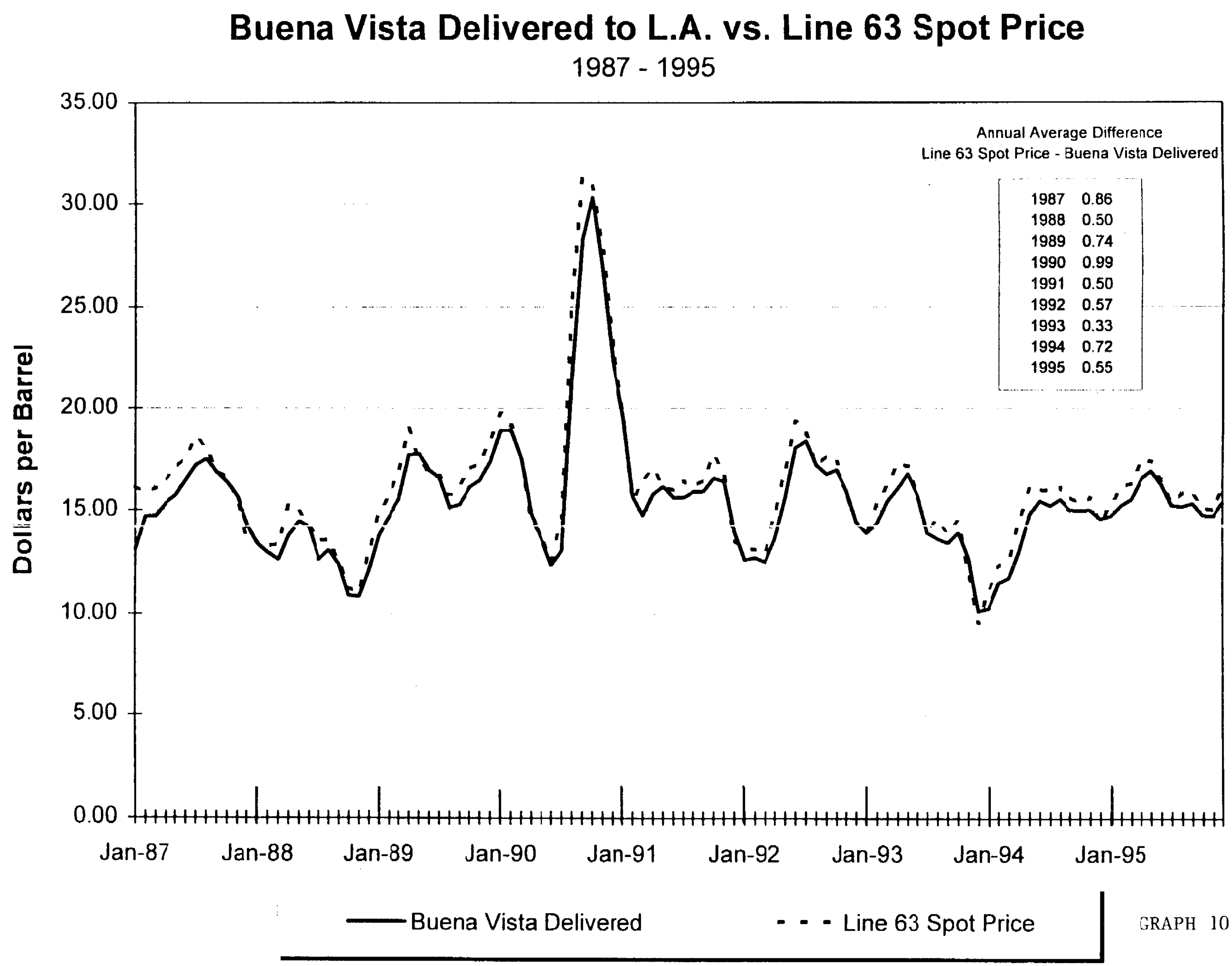
1987 - 1995



GRAPH 9

Sources: ANS Spot Price: Telerate/Platt's.
Posted Prices: Chevron and Texaco posted price bulletins.
Transportation adjustment made to L.A. using Four Corners pipeline common carrier tariffs

All prices are monthly averages.



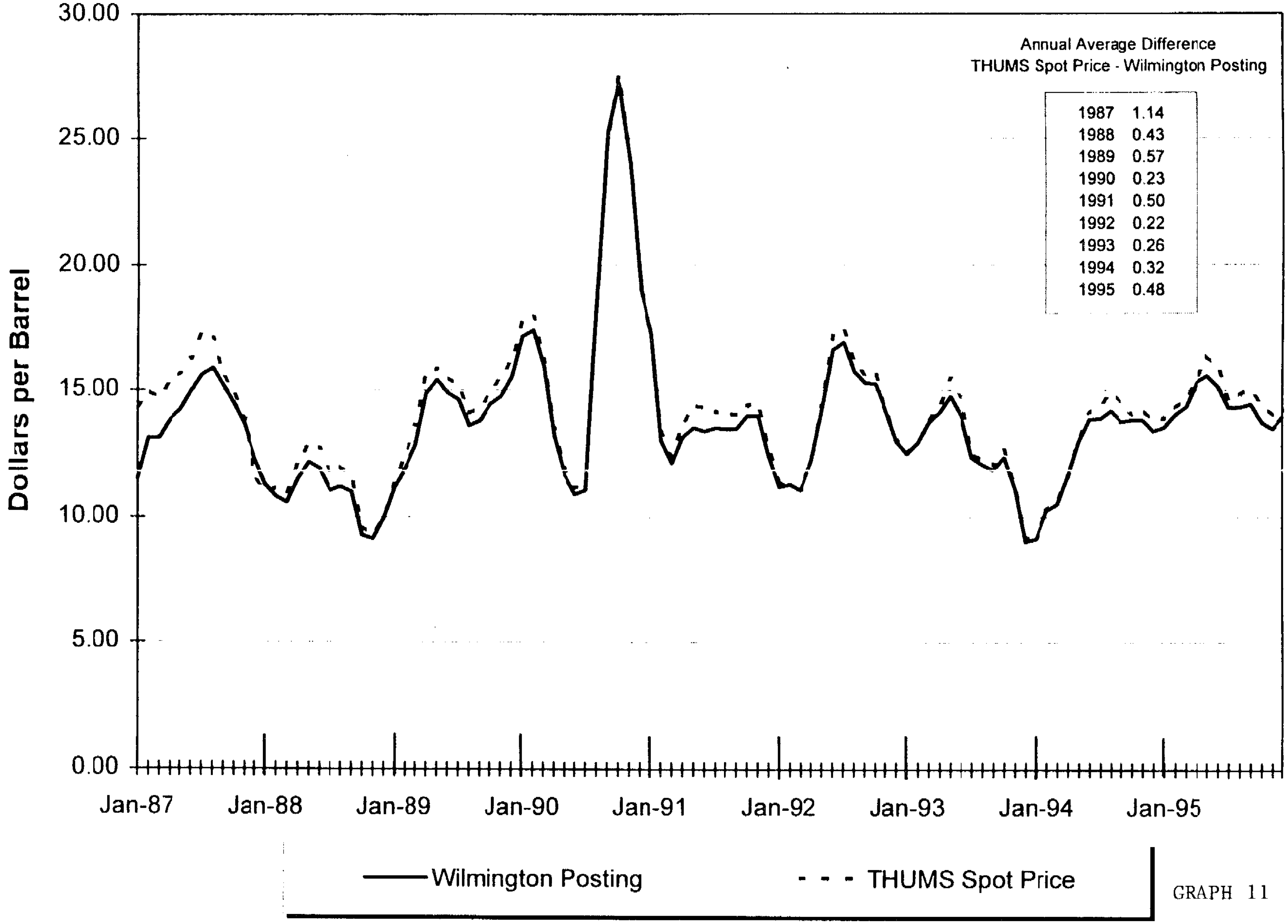
GRAPH 10

Sources: Line 63 Spot Price: Telerate/Platt's.
Posted Prices: Chevron and Texaco posted price bulletins.
Transportation adjustment made to L.A. using Four Corners pipeline common carrier tariffs.

All prices are monthly averages.

Wilmington Posting vs. THUMS Spot Price

1987 - 1995



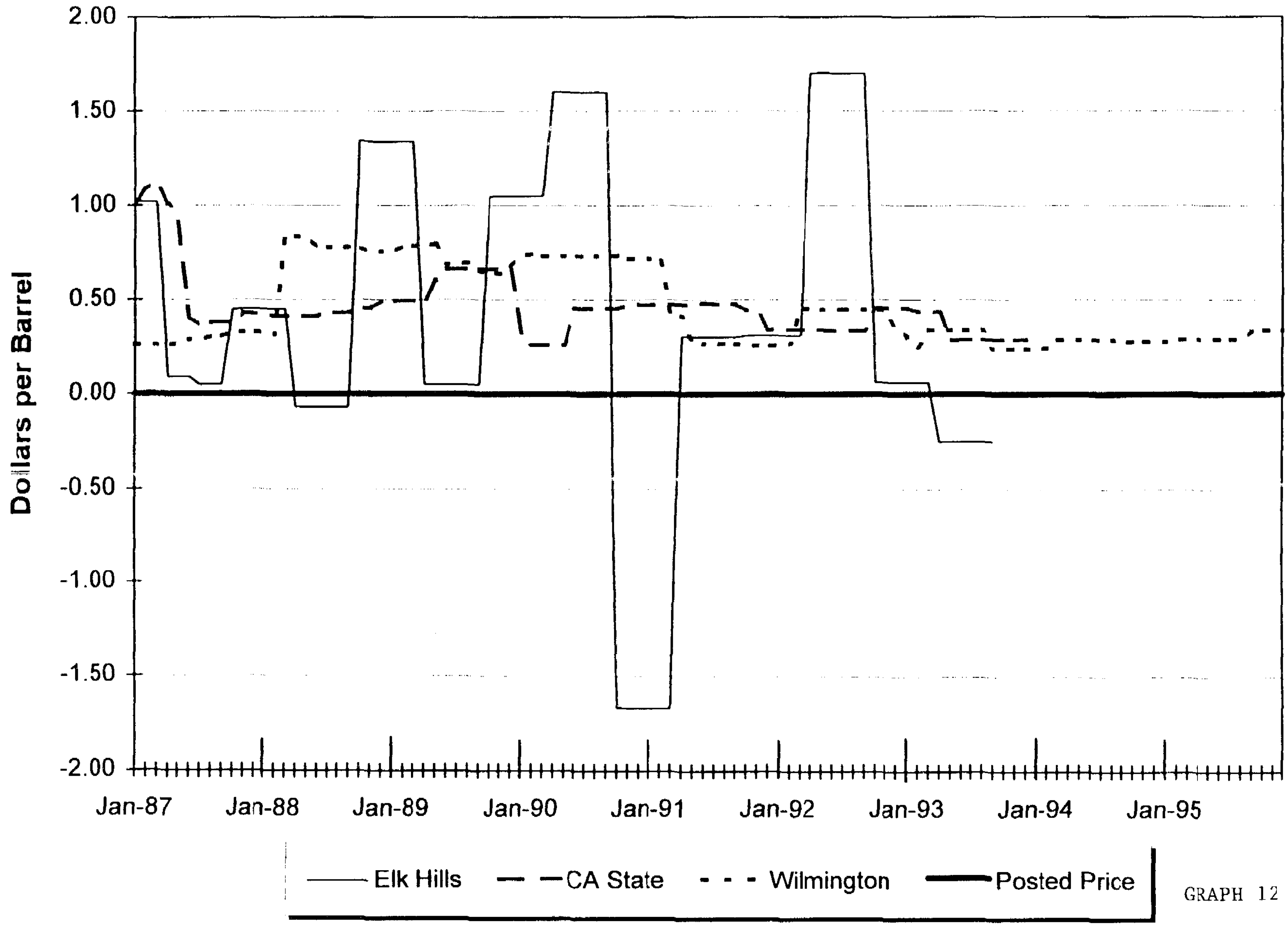
GRAPH 11

Sources: THUMS Spot Price: Telerate/ Platt's.
Posted Prices: Chevron and Texaco posted price bulletins.

All prices are monthly averages.

Wilmington , CA State and Elk Hills Sell-Off Premia

1987 - 1995



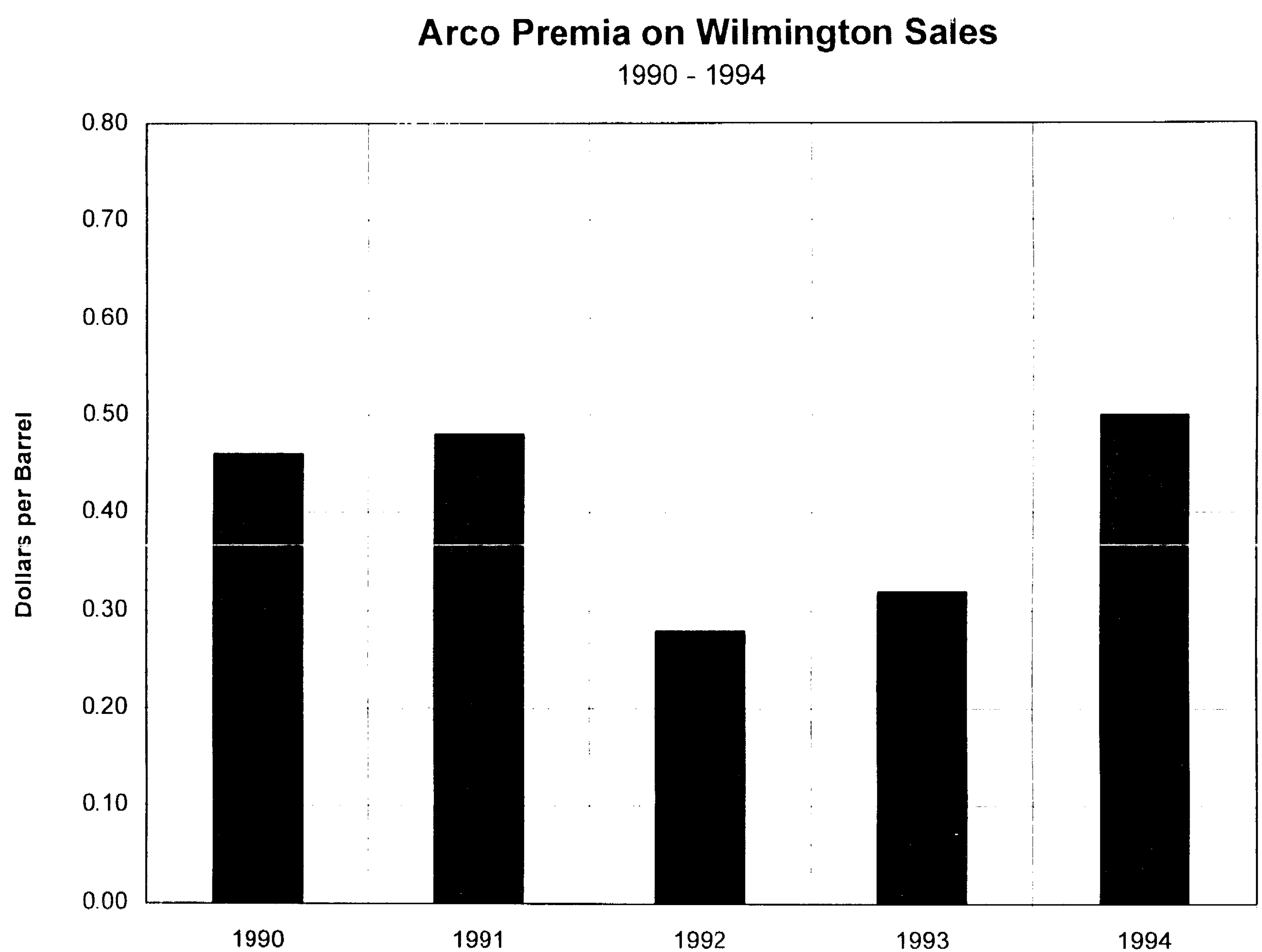
GRAPH 12

Sources: Elk Hills: U.S. Dept. of Energy

Wilmington CA State: CA State Lands Commission

CA State sell-off data not available after 12/93; Elk Hills data not available after 9/93.

Prices are monthly averages.



GRAPH 13

Source: City of Long Beach Annual Review and Audit.

WESTERN STATES LANDS COMMISSIONERS ASSOCIATION - ROYALTY MANAGEMENT COMMITTEE

Valuation of Oil From Federal and Indian Leases - Advance Notice of Proposed Rulemaking
Crude Oil - Alternative Valuation Benchmarks

Federal Questions and WSLCA-RMC Responses

I. Are there indices or other published prices that better reflect actual market value then oil postings?

Response - A - NYMEX Intermediate at Cushing, Oklahoma (Example):

Spot price less transportation deduction back to field for Intermediate.

Spot price less Quality (Sweet/Sour) and Location (Cushing/Midland) differentials less transportation deduction from Midland back to the field.

B - Regional Indices, such as P+ in the Midland area.

II. Where prices posted by individual companies differ considerable within the same field or area, how are these differences best reconciled?

Response - Such differences cannot be reconciled. Individual companies have set their own postings. Some companies are considered integrated oil companies, where they are responsible for the feed stock for refineries and other oil companies are considered resellers since they are not responsible for the feedstock at a refinery. Such companies may have their own crude oil pipelines and purchase crude oil to be transported in their pipelines. Such posted price differences may not be reconcilable. According to the authors of the book "Oil Markets and Prices" on page 231, "posted prices have not been the result of a competitive market. Gatherers normally attempted to tie the particular producers to them by payment of variable bonuses above posted prices to secure supplies."

III. Are there fixed "reference" prices against which quality, transportation and other adjustments can be made to develop reasonable royalty values (e.g., West Texas Intermediate)?

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III. continued

Response - The Crude Oil Advisory Committee for NYMEX has represented that "the NYMEX Division light, sweet crude oil futures contract is the most actively traded futures contract for a physical commodity, along with one of the most widely used crude oil price indices in the world." In addition, as a minimum in New Mexico, Texas and Oklahoma, the P+ market index prices of Midland can be utilized as another reliable index.

IV. Are spot prices of sufficient reliability and do they cover wide enough geographic areas to use as value bases?

Response - Again, the aforementioned committee stated that "Cushing, Oklahoma, the delivery site of NYMEX Division light, sweet crude contract, is considered the nucleus of the U.S. spot crude trading market." Such market handles substantial trading volumes to provide price reliability. As a result, such market place provides the baseline for U.S. crude markets.

V. Do oil "futures" prices provide meaningful bases for royalty valuation?

Response - Yes, see IV above.

VI. What alternative valuation method(s) best balance the needs to -

(a) reflect the market value of the oil as sold, exchanged, or otherwise disposed of and (b) maximize administrative efficiency for all concerned?

Response - NMYEX Intermediate Spot Prices at Cushing, Oklahoma with appropriate quality and location differentials for federal royalty crudes produced in Gulf Coast (Texas, Louisiana, Oklahoma and New Mexico).