PETROLEUM PRICING

COMMENTS ON

ALASKA PETROLEUM PRODUCT PRICING REPORT

PREPARED BY PACIFIC-ALASKA, INC.

PRESENTED TO

ALASKA SENATE RESOURCES COMMITTEE

BY

JOHN C. LEUTWYLER
MANAGER, STRATEGIC PLANNING
OPERATIONS & BUSINESS PLANNING
CHEVRON U.S.A. INC.

JUNEAU, ALASKA
MAY 2, 1983

GOOD AFTERNOON. I AM JACK LEUTWYLER, MANAGER OF STRATEGIC PLANNING, OPERATIONS & BUSINESS PLANNING DEPARTMENT OF CHEVRON U.S.A. INC. I AM PLEASED TO APPEAR BEFORE YOU TODAY TO PROVIDE OUR COMMENTS ON THE STUDY ENTITLED "ALASKA PETROLEUM PRODUCT PRICING," PREPARED FOR YOUR COMMITTEE BY PACIFIC-ALASKA INC.

FIRST SOME GENERAL COMMENTS ON THE REPORT AND ON PETROLEUM PRODUCT PRICING IN ALASKA.

THE AUTHORS ARE TO BE COMMENDED FOR THE ASSIMILATION OF A LARGE DATA BASE OF PRODUCT PRICES AND A REASONABLY ACCURATE UNDERSTANDING OF THE SUPPLY AND DISTRIBUTION PATTERNS OF PETROLEUM PRODUCTS IN ALASKA. ON THE OTHER HAND, WE DO NOT AGREE WITH THEIR PRINCIPAL CONCLUSIONS WHICH SUGGEST THAT PRODUCT PRICES ARE BASED ON THE COST TO THE SUPPLIER OF PRODUCING AND TRANSPORTING ITS PRODUCT TO ANY GIVEN GEOGRAPHIC AREA. THIS IS IMPOSSIBLE IN A COMPETITIVE ENVIRONMENT BECAUSE NO TWO SUPPLIERS HAVE THE SAME COST OF SUPPLYING PRODUCT TO A GIVEN DESTINATION.

IT IS COMPETITION THAT ESTABLISHES PRODUCT PRICES EXCEPT, OF COURSE, IN THOSE AREAS WHERE THERE IS ONLY ONE SUPPLIER, E.G., WESTERN ALASKA. ALTHOUGH THE ALTERNATE COST OF MOVING PRODUCT FROM THE WEST COAST MAY REPRESENT A NON-ALASKA REFINER'S COST TO SUPPLY, THE PRICE THE PRODUCT WILL COMMAND IN THE ALASKA MARKET WILL BE DICTATED BY OTHER FACTORS -- THE MOST IMPORTANT OF WHICH IS THE DEMAND FOR THAT PRODUCT RELATIVE TO OTHER SUPPLIES AVAILABLE. THE GREATER THE VOLUME OF SUPPLY AVAILABLE, THE GREATER THE COMPETITION. ALSO, THE GREATER THE NUMBER OF COMPANIES SUPPLYING PRODUCT, THE GREATER THE COMPETITION. AND, OF COURSE, THE FUTURE GROWTH POTENTIAL OF THE AREA WILL AFFECT THE NUMBER OF SUPPLIERS WHO MIGHT BE WILLING TO MARKET AT A LOSS NOW IN ANTICIPATION OF POTENTIAL FUTURE PROFITS AS THE MARKET DEVELOPS.

IN THE FINAL ANALYSIS IT BOILS DOWN TO THE MARKETER'S PERCEPTION OF THE LONG RANGE PROFITABILITY OF "DOING BUSINESS" AT A GIVEN LOCATION. IF A COMPANY DOES NOT BELIEVE IT CAN COMPETE PROFITABLY

IN A GEOGRAPHICAL AREA BECAUSE OF ITS HIGH COST OF RAW MATERIAL OR LACK OF AN IN-STATE REFINERY, THEN IT MUST RECONSIDER ITS FUTURE PRESENCE IN THAT AREA.

CONVERSELY, TO MINIMIZE PRODUCT PRICES AT THE CONSUMER LEVEL, THE STATE OF ALASKA MUST FOSTER THE ENVIRONMENT NECESSARY TO ENCOURAGE COMPETITION WITHIN THE STATE. THE PRIMARY MEANS WHICH IS AVAILABLE TO THE STATE TO ACHIEVE THIS OBJECTIVE OF MINIMIZING CONSUMER PRICES IS THE ALLOCATION OF STATE ROYALTY OIL. DISTRIBUTION OF THIS OIL ON AN EQUAL BASIS IN TERMS OF PRICE AND PREMIUMS, AND CONTRACT TERM TO ALL OF THE IN-STATE REFINERS WOULD CAUSE THE STRONGEST COMPETITIVE ENVIRONMENT TO EXIST. IF DIFFERENT "PREMIUMS" ARE CHARGED TO DIFFERENT PURCHASERS OF ROYALTY CRUDE, THE STATE IS INTRODUCING AN INEQUITY WHICH WILL IMPACT ON EACH REFINER'S ABILITY TO COMPETE. A VIVID EXAMPLE IS THE ADVERSE IMPACT ON COMPETITION IN THE FAIRBANKS AREA WHICH HAS RESULTED FROM NORTH

POLE REFINERY'S ACQUISITION OF A LONG TERM ROYALTY CRUDE CONTRACT AT AN EFFECTIVE SUBSTANTIAL "DISCOUNT."

ON THE OTHER HAND, WITH THE GROWING SURPLUS OF REFINING CAPACITY ON THE WEST COAST IT MAKES NO ECONOMIC SENSE TO ENCOURAGE ADDITION OF NEW CAPACITY IN ALASKA WHICH MUST COMPETE WITH THE GROWING SURPLUS OF EFFICIENT REFINING CAPACITY ON THE WEST COAST. WE BELIEVE ALASKANS SHOULD CONSIDER UTILIZING THIS EXISTING SURPLUS CAPACITY IN ORDER TO SUPPLY THE WIDE VARIETY OF PRODUCTS NECESSARY TO MEET THEIR NEEDS. IN ORDER TO AMORTIZE A NEW INVESTMENT, A REFINER IN ALASKA MUST CHARGE A HIGHER PRODUCT PRICE THAN WHAT IT COSTS A WEST COAST REFINER TO PRODUCE THAT PRODUCT IN ITS FULLY DEPRECIATED PLANT IN THE LOWER 48 AND SHIP IT TO ALASKA. THESE CONCEPTS ARE BASIC ECONOMIC PRINCIPLES WHICH WOULD APPLY TO ANY PRODUCT IN ANY MARKET. FOR EXAMPLE, AN ACCEPTABLE RETURN ON $100 MILLION OF NEW REFINERY INVESTMENTS TO PROCESS AN ADDED 30 MBD OF CRUDE, COULD ADD MORE THAN 5¢/GAL TO PRODUCT COST IF COMPETITION

IN THE MARKET PLACE WOULD ALLOW IT. THIS IS PRECISELY WHY CHEVRON CHOSE NOT TO INCREASE ITS CAPACITY AT NIKISKI, DECIDING INSTEAD TO UTILIZE THE EXCESS CAPACITY AVAILABLE ON THE WEST COAST TO SUPPLY PRODUCTS AT MORE ECONOMIC PRICES.

* * *

NOW, REGARDING SPECIFIC CONCLUSIONS OF THE STUDY, WE HAVE THE FOLLOWING COMMENTS:

1. <u>WE DO NOT BELIEVE THAT ALASKAN PRICES ARE UNFAIRLY HIGH</u>. SINCE COST IS A MAJOR FACTOR IN ANY COMPANY'S DECISION TO COMPETE IN ANY MARKET, OUR PRIMARY CONCERN WITH THE STUDY IS THE AUTHORS' APPARENT LACK OF UNDERSTANDING OF <u>ALL</u> OF THE COSTS ASSOCIATED WITH SELLING PETROLEUM PRODUCTS IN ALASKA. IN DEVELOPING WHETHER POSTED PRICES AT A GIVEN GEOGRAPHICAL LOCATION ARE "LEGITIMATE," THE STUDY ONLY LOOKED AT THE POSTED PRICE OF THE PRODUCT AT ONE

LOCATION AND ADDED THE "COST" TO TRANSPORT THE PRODUCT TO THE OTHER LOCATION. THE TRANSPORTATION COST ASSUMED WAS THAT QUOTED BY COMMERCIAL SHIPPER(S) OPERATING BETWEEN THE TWO LOCATIONS. THIS IS A GROSS OVER-SIMPLIFICATION. THE STUDY DID NOT INCLUDE THE COST TO MOVE PRODUCT THROUGHOUT THE VARIOUS TERMINALS OF WHICH THERE ARE MANY IN ALASKA BECAUSE OF ITS GEOGRAPHICAL CONFIGURATION. NO COST WAS INCLUDED FOR IN-TRANSIT LOSSES WHICH TYPICALLY AMOUNT TO ABOUT 0.3% OF THE VOLUME INVOLVED IN EACH PIPELINE, MARINE AND RAIL MOVEMENT. BECAUSE OF THE GEOGRAPHY AND THE SMALL VOLUME OF PRODUCT DEMAND, THERE ARE SURCHARGES WHICH THE STUDY NEGLECTED TO INCLUDE, ASSOCIATED WITH: (A) MOVING PRODUCTS IN SMALL BARGES AND SMALL OR LIGHT-LOADED TANKERS, (B) LIGHTERING COSTS WHERE A VESSEL CANNOT MOVE TO A DOCK FULLY-LADEN, AND (C) A MYRIAD OF OTHER "FEES" FOR SPECIAL PORT CHARGES, WHARFAGE AND DEBALLASTING COSTS. NO COST WAS INCLUDED FOR THE COST ASSOCIATED WITH CARRYING THE PRODUCT IN INVENTORY WHICH IS SIGNIFICANT WHEN INTEREST RATES ARE HIGH AND SUPPLY LINES LONG

WITH SLOW TURNOVER ONCE IT ARRIVES AT THE DELIVERY POINT. PRODUCT TIEUP IS TYPICALLY 2-3 MONTHS IN ALASKA AND CAN BE CONSIDERABLY LONGER WHERE PORTS ARE ICE BOUND FOR MOST OF THE YEAR. ALASKAN PRICES DO NOT APPEAR HIGH WHEN ALL OF THESE MISCELLANEOUS COSTS ARE CONSIDERED.

2. ALASKAN PRICES HAVE NOT FLIP-FLOPPED RELATIVE TO WEST COAST PRICES.

IT APPEARS THAT THE STUDY HAS ASSUMED THAT PLATT'S WEST COAST POSTED PRICES REPRESENT CONSUMER TANK WAGON (CTW) PRICES. THE PLATT'S POSTINGS ACTUALLY REPRESENT "RACK" PRICES FOR UNBRANDED JOBBERS WHO PURCHASE IN LARGE VOLUMES IN EXCESS OF 6000 GAL LOTS AT THE SUPPLY POINT. THESE "RACK" PRICES MORE NEARLY TRACK "SPOT PRICES" PREVAILING AT THE APPLICABLE WEST COAST LOCATIONS AT ANY GIVEN MOMENT. THESE SPOT PRICES CAN FLUCTUATE WIDELY -- PARTICULARLY IN A SHORTAGE SITUATION -- AND DIFFER SIGNIFICANTLY FROM A CTW PRICE WHICH REPRESENTS THE PRICE FOR A SMALL VOLUME

DELIVERY TO THE CUSTOMER'S FACILITY. THE PLATT'S PRICES IN JANUARY 1980 FOR WEST COAST PRODUCT WERE CONSIDERABLY HIGHER THAN OUR CORRESPONDING CTW PRICES BECAUSE OF THE FAST RUNUP IN PRICES OCCURRING AT THAT TIME RESULTING FROM THE SHORTAGE CREATED BY THE IRANIAN CRUDE CURTAILMENT. ON THE OTHER HAND, THEY WERE TYPICALLY LOWER IN '81 AND '82 WITH THE ONSET OF THE PRODUCT SURPLUSES IN THE SPOT MARKET. THIS ABERRATION EXPLAINS THE "FLIP-FLOP" NOTED IN THE STUDY. IF TRUE WEST COAST CTW PRICES HAD BEEN USED IN THE REPORT INSTEAD OF PLATT'S POSTINGS OF "RACK" PRICES, THE STUDY WOULD HAVE SHOWN THAT ALASKAN CTW PRICES WERE CONSISTENTLY HIGHER THAN THE WEST COAST. THIS IS TO BE EXPECTED CONSIDERING THE UNIQUE DYNAMICS OF THE ALASKAN MARKETPLACE.

3. REFINERY PROFITABILITY CALCULATIONS ARE MISLEADING.

LASTLY, WE BELIEVE THAT THE STUDY'S REPRESENTATIONS OF REFINERY PROFITABILITY ARE VERY MISLEADING. THE CASUAL READER COULD CONCLUDE THAT THE CALCULATIONS REPRESENT PROFITABILITY OF A

MARKETER'S ENTIRE ALASKAN OPERATION. THIS, OF COURSE, IS NOT TRUE BECAUSE ALL MARKETERS HAVE SUBSTANTIAL INVESTMENTS FOR OTHER ACTIVITIES DOWNSTREAM FROM THEIR REFINERY. FOR EXAMPLE, CHEVRON'S INVESTMENT IN ITS SERVICE STATIONS, TERMINALS, BULK PLANTS, TRUCKS, BARGES AND TANKERS FAR EXCEED ITS REFINERY INVESTMENT. IF THESE INVESTMENTS ARE INCLUDED, WHICH THEY SHOULD BE, THEN THE OVERALL PROFITABILITY OF CHEVRON'S OPERATON IN ALASKA WOULD BE SUBSTANTIALLY LESS THAN THAT REFLECTED IN THE STUDY, WHICH BY THE WAY, CANNOT BE CONSTRUED AS EXCESSIVE BY ANY MEASURE.

* * *

TO SUMMARIZE, MARKET PRICES IN THE RAILBELT ARE ESTABLISHED BY COMPETITION -- NOT BY THE COST TO DELIVER ALTERNATE PRODUCT FROM THE WEST COAST. IN THOSE AREAS WHERE THERE IS NO COMPETITION, FAIR MARKET PRICES ARE CHARGED BY CHEVRON BASED ON WEST COAST PRICES PLUS TRANSPORTATION DISTRIBUTION AND MARKETING EXPENSE --

Western Alaska

FOR EXAMPLE IN WESTERN ALASKA. WE BELIEVE OUR PRICES ARE FAIR IN ALL AREAS OF ALASKA WHEN THE FULL COST OF MARKETING PRODUCTS IN ALASKA ARE CONSIDERED. FINALLY, WE URGE THAT THE STATE OF ALASKA SELL ITS ROYALTY CRUDE AT EQUITABLE PRICES TO ALL REFINERS TO ENCOURAGE COMPETITION WHICH WILL ULTIMATELY PROVIDE PRODUCTS TO ITS RESIDENTS AT THE LOWEST PRICE. IN THIS REGARD, CHEVRON HAS BEEN ATTEMPTING TO PURCHASE ALASKAN ROYALTY OIL ON A LONG-TERM BASIS FOR SEVERAL YEARS AND THE LEGISLATURE IS CURRENTLY CONSIDERING A PROPOSAL TO SELL CHEVRON 18 MBD REFLECTIVE OF THE CAPACITY OF OUR NIKISKI REFINERY. CONSISTENT WITH THE ARGUMENTS OUTLINED ABOVE, AND AS POINTED OUT BY CHEVRON'S BOB ALFREY IN HIS REMARKS TO THE JOINT MEETING OF THE HOUSE AND SENATE RESOURCES COMMITTEE ON APRIL 20, CHEVRON NEEDS ANOTHER 20 MBD OF ROYALTY OIL IN ADDITION TO THE CURRENT CONTRACT BEING CONSIDERED TO SUPPORT ITS TOTAL COMMITMENT TO DEMANDS IN ALASKA INCLUDING THE VOLUMES IMPORTED. WE NEED TO BE ABLE TO PURCHASE THE FULL 38 MBD TO

REMAIN COMPETITIVE WITH THE OTHER IN-STATE REFINERS WHOSE TOTAL ALASKA DEMANDS ARE BACKED 100% WITH ROYALTY CRUDE.

TO REITERATE AND EMPHASIZE THIS POINT -- WE KNOW THAT MANY, OR MORE LIKELY ALL OF YOU HAVE SOUGHT ASSURANCE THAT THE SALE OF ROYALTY OIL TO IN-STATE REFINERS WILL TRANSLATE INTO LOW PRODUCT PRICES FOR ALASKANS.

COMPETITION WILL DETERMINE MARKET PRICES IN THE FUTURE IN ALASKA AS IT DOES ELSEWHERE.

ROYALTY OIL MUST BE MADE AVAILABLE ON AN EQUITABLE BASIS TO GUARANTEE THE STRONGEST POSSIBLE COMPETITIVE ENVIRONMENT. WE BELIEVE THAT THIS IS THE ONLY WAY YOUR OBJECTIVE OF LOWEST POSSIBLE PRICE IN ALASKA CAN BE ACHIEVED.

THAT COMPLETES MY FORMAL REMARKS. I WILL BE PLEASED TO RESPOND TO YOUR QUESTIONS.

Alaska State Legislature

BETTYE FAHRENKAMP, Chairman
ROBERT H. ZIEGLER, SR., Vice Chairman
DICK ELIASON
PAUL FISCHER
VIC FISCHER
BOB MULCAHY
ARLISS STURGULEWSKI

POUCH V
STATE CAPITAL
JUNEAU, ALASKA 99811
(307) 465-3834
(907) 465-3835

Senate

Committee on Resources

MINUTES

May 2, 1983
3:10 p.m.

Senate Finance Room
5th Floor, Capitol

MEMBERS PRESENT

Senator Fahrenkamp, Chair
Senator Ziegler, Vice Chair
Senator P. Fischer
Senator V. Fischer
Senator Mulcahy
Senator Sturgulewski

CALENDAR

Hearing on Alaska Petroleum Product Pricing Study.

Louis F. DeLong, of Pacific-Alaska, Inc., explained how Mr. Pernela and he had approached the study, what data had been used and its sources, and how conclusions had been drawn. He noted that there was a lack of meaningful data on petroleum pricing. DeLong also pointed out that, although the Alaska Public Utilities Commission is required to annually review tariffs, APUC has never had such a hearing.

Lloyd M. Pernela, of Pacific-Alaska, Inc., led the Committee through the appendix to the study, explaining the meaning of the tables contained there. He stated that the purpose of the report was to create a mechanism to begin talks to determine where mark-ups occur. He stated his belief that Alaskans were paying unnecessarily high prices for heating oil and gasoline. He pointed out that their research showed that Alaskans are paying a premium for gasoline and heating oil over and above the additional transportation costs necessary for marketing these products.

As a basis for the study, Pernela said they considered, among other things: the historical pricing pattern of Gulf Coast, West Coast, and Cook Inlet products; supply and demand functions; refiners proximity to crude sources; state royalty oil pricing and supply policies; refining methods and capacity;

transportation means; and an assessment of the competitive relationship between the in-state refiners.

John C Leutwyler, Chevron USA Inc., did not agree with the conclusions suggesting that consumer prices are dependent on the cost to supply. He said competition establishes product prices, and that prices are not unnecessarily high in Alaska. He pointed out the reasons he felt the report was inaccurate. (NOTE: Mr. Leutwyler provided written testimony to the committee which is available for inspection.)

John L. Seawell, President of MAPCO Alaska Inc., requested that his letter to Sen. Fahrenkamp dated 4/8/83 be entered into the record as his testimony. He questioned numbers used in the report, cities selected for price comparisons, and accuracy of conclusions drawn in the report.

Reed Williams and Dennis Juren of Tesoro Alaskan Petroleum Company, felt that Tesoro's prices are consistently lower than West Coast prices; that comparison to outside markets was unfair, as competitive factors existing in the Lower 48 do not exist in Alaska; that the study's numbers were different than statistics which Tesoro had available; and that there were about 40 errors and omissions in the report, leading them to believe the study is inaccurate and not supportable by fact. (A written copy of Tesoro's response to the study is available from the Committee.)

Louis DeLong and Lloyd Pernela of Pacific-Alaska responded to the prior testimony, defending the methods and material used to prepare the report. (A transcript of DeLong's and Pernela's rebuttal testimony is available from the Resources Committee.)

Senator Fahrenkamp invited participants to provide further written comments to the Committee.

The meeting was adjourned at 5:07 p.m.

Alaska State Legislature

BETTYE FAHRENKAMP, Chairman
ROBERT H. ZIEGLER, SR., Vice Chairman
DICK ELIASON
PAUL FISCHER
VIC FISCHER
BOB MULCAHY
ARLISS STURGULEWSKI

POUCH V
STATE CAPITAL
JUNEAU, ALASKA 99811
(907) 465-3834
(907) 465-3835

Senate

Committee on Resources

MEMORANDUM

TO: SENATE RESOURCES COMMITTEE MEMBERS

FROM: SENATE RESOURCES COMMITTEE STAFF

RE: TESORO, CHEVRON AND MAPCO RESPONSE TO THE ALASKA PETROLEUM PRODUCT PRICING REPORT.

DATE: MAY 2, 1983

Attached for your information and review are the responses of the three companies mentioned in the DeLong-Pernela Petroleum Pricing Report.

Chevron U.S.A. Inc.
575 Market Street, San Francisco, CA 94105-2856

APR 12 1983

April 11, 1983

Operations and Business Planning
R. R. Bowles
General Manager
J. J. Motroni
Manager, Operations Planning
O. V. Larsen
Manager, Business Evaluation
J. C. Leutwyler
Manager, Strategic Planning
M. A. Javinsky
Manager, Investment Planning
R. F. Morse
Manager, Legislative and
Regulatory Evaluation

ALASKA PETROLEUM PRICING STUDY

Ms. Bettye Fahrenkamp, Chairman
Senate Committee on Resources
Alaska State Legislature
Pouch V State Capitol
Juneau, AK 99811

Dear Ms. Fahrenkamp:

Your letter of February 25 to Mr. Jim Howard requested Chevron's comments on the subject study prepared by Messrs. DeLong and Pernela. At the recent meeting with you and Mr. Palmer and Messrs. Alfrey, Leutwyler, Plummer, and Walsh on March 29, we committed to respond to your request and return to discuss our comments with you. We appreciate the opportunity to offer our comments which we have summarized below:

General Comments on Approach

The authors are to be commended for the assimilation of a large data base of product prices and a reasonably accurate understanding of the supply and distribution patterns of petroleum products in Alaska. On the other hand, we do not agree with their conclusions which suggest that product prices are established in any given geographical area based on the cost to the supplier of producing and transporting its product to that market. This is impossible in a competitive environment because no two suppliers have the same cost of producing/transporting a product to a given destination. Each supplier has different raw material, manufacturing, distribution, marketing, and overhead costs. It is competition that establishes product prices except, of course, in those areas where there is only one supplier, e.g. Western Alaska. Although the alternate cost of moving product from the West Coast (where that product also has a "cost" based on its alternate market value - not its cost to produce) may represent a non-Alaska refiner's cost to supply, the price the product will command in the Alaska market will be dictated by other factors - the most important of which is the demand for that product relative to other supplies available. The greater the volume of supply available, the greater the competition which will drive price down. Also, the number of companies supplying product has an impact on the supply/demand situation and competition. The future growth potential of the area will attract suppliers who might be willing to market at a loss now in anticipation of potential future profits as the market develops.

In the final analysis it boils down to the marketer's perception of the long range profitability of "doing business" at a given location. If a company does not believe it can compete profitably in a geographical area because of high cost of raw material supply or lack of an in-state refinery, then it will reconsider its future presence in that area.

Conversely, to minimize product prices at the consumer level, the State of Alaska will find it desirable to foster the environment necessary to encourage competition within the state. This objective can be accomplished, at least in part, if the state sells its royalty oil to all customers on an equitable basis. If different "premiums" are charged to purchasers of royalty crude, the State is introducing an inequity which will impact on refiners' ability to compete. This can only lead to increased prices for Alaska product.

Concerns with Study Conclusions

1. We do not believe that Alaskan prices are unfairly high.
Since cost is a major factor in any company's decision to compete in any market, our primary concern with the study is the authors' apparent lack of understanding of all of the costs associated with selling petroleum products in Alaska. For example, in developing whether posted prices at a given geographical location are "legitimate," the study looks at posted prices at another location and adds the "cost" to transport the product from that other location. The transportation cost assumed is that quoted by the commercial shipper(s) operating between the two locations. This is an over-simplification because there are terminalling costs associated with delivering the product to and receiving the product back from the shipper. In addition, there are typically in-transit product losses - e.g., 0.25 to 0.33% of the product is "lost" in each pipeline, marine or rail movement, and these are cumulative if more than one mode of transportation is involved. Because of Alaska's geography and relatively small volume of product demands, there are surcharges associated with: (a) moving products in small barges, light loaded tankers or very small tankers (significantly smaller than the GPM size assumed in the study), (b) lightering costs where the vessel cannot move to the dock fully laden and pilot fees where port configurations have special hazards, and (c) a myriad of other "fees" for special port charges, wharfage and deballasting costs. Finally, no charge has been included for the working capital cost associated with carrying inventory which is significant when interest rates are high and the inventory can be tied up for several days or even months because of long supply lines and slow turnover once it arrives at the delivery point because of low demand. These periods can approach 2-3 months for product sold in Fairbanks (and even longer periods in Western Alaska where ports are ice-locked for much of each year). On attached Table I, we have compared our estimated costs to move diesel from San Francisco to Anchorage with those reflected in the study. This comparison shows that actual cost to move product is 4-6¢/gal. more than reflected in the study.

2. Alaskan prices have not flip-flopped vis-a-vis West Coast prices.
It appears that the study has assumed that Platt's West Coast posted prices represent CTW prices. The Platt's postings actually represent "rack" prices for unbranded jobbers who purchase in excess of 6000 gal. lots. These prices more nearly track "spot prices" prevailing at the applicable West Coast locations at any given moment, and can be very different from a CTW price

because the spot price represents the acquisition cost of a large volume (e.g., a full ship's cargo) of product. These spot prices can fluctuate widely - particularly in a shortage situation - and differ significantly from a CTW price which represents the price for a small volume delivery (that Chevron defines as 400 to 6000 gal.) at a location supply point. The Platt's prices in January '80 for West Coast product were considerably higher than our corresponding CTW prices because of the fast runup in prices occurring at that time resulting from the shortage created by the Iranian crude curtailment. On the other hand, they were typically lower in '81 and '82 with the onset of the product surpluses in the spot market. This aberration explains the "flip-flop" noted in the study. If true West Coast CTW prices had been used instead of Platt's postings, the Alaskan CTW prices would have been consistently higher than the West Coast. This is confirmed by a comparison of Chevron's CTW postings summarized on the attached Table II.

3. Refinery Profitability Calculations are Misleading

Lastly, we believe that the study's representations of refinery profitability are very misleading. The casual reader could conclude that the calculations represent profitability of a marketer's entire Alaskan operation. This, of course, is fallacious because all marketers have substantial investments for other activities downstream from their refinery. For example, Chevron's investment in its service stations, terminals, bulk plants, trucks, barges, and tankers far exceed its refinery investment. If these investments are included, then the overall profitability of Chevron's operation in Alaska would be substantially less than that reflected in the study.

The above represent our major concerns. We have noted some apparent errors in the calculations but we see no purpose in elaborating on them here. We would be pleased to discuss them with you if you wish.

To summarize, market prices in the Railbelt are established by competition - not by the cost to deliver alternate product from the West Coast. We believe these prices are fair when the full cost of marketing products in Alaska are taken into consideration. Finally, we urge that the State of Alaska sell its royalty crude at equitable prices to all refiners to encourage competition which will ultimately provide products to its residents at the lowest price.

Further to the above, Chevron has been attempting to purchase Alaskan royalty oil on a long-term basis for several years and the legislature is currently considering a proposal to sell Chevron 13 MBD reflective of the capacity of our Nikiski refinery. Consistant with the arguments outlined above and as discussed with you recently, Chevron needs 38 MBD of royalty oil to produce its total volume of demands in Alaska including the volume of products imported. We need to be able to purchase the full 38 MBD to remain competitive with the other in-state refineries whose total Alaska demands are backed with royalty crude.

If you have any questions, please call Jack Leutwyler at (415) 394-3282.

Very truly yours,

R. R. Bowles /JCL

R. R. BOWLES

Attachments

TABLE I

ESTIMATED COSTS TO MOVE DIESEL FUEL

SAN FRANCISCO TO ANCHORAGE

(¢/GAL)

	JAN '80		JAN '81		JAN '82	
	REPORT	CHEV	REPORT	CHEV	REPORT	CHEV
SAN FRANCISCO TO ANCHORAGE[1] FREIGHT, WHARFAGE & LOSS ALLOW.	3.1	6.3	3.1	4.7	3.0	4.7
ANCHORAGE TERMINALLING COST	-	1.4	-	1.4	-	1.4
INVENTORY CARRYING COST[2]	-	1.5	-	1.3	-	0.8
TOTAL COST	3.1	9.2	3.1	7.4	3.0	6.9
CHEVRON vs REPORT COST		+6.1		+4.3		+3.9

(1) REPORT DATA FROM TABLE II-B-1a-c

(2) BASED ON 30-DAY HOLDING TIME WITH PROJECT VALUED AT S.F. CTW AT PRIME INTEREST RATE

TABLE II

CHEVRON'S CTW POSTED PRICES

(¢/GAL)

	JAN '80	JAN '81	JAN '82
LEADED REGULAR MOGAS			
SAN FRANCISCO	74.5	97.3	109.8
ANCHORAGE	76.5	99.3	115.8
FAIRBANKS	82.4	105.2	121.2
DIESEL - DF2			
SAN FRANCISCO	71.3	87.5	98.7
ANCHORAGE	75.1	94.2	106.0
FAIRBANKS	72.4	96.9	114.4

Tesoro Alaska Petroleum Company

W. Reed Williams
Vice President

April 29, 1983

Senator Bettye Fahrenkamp, Chairman
Senate Committee on Resources
Alaska State Legislature
Pouch V
State Capitol
Juneau, Alaska 99811

Re: Alaska Petroleum Product Pricing (APPP) Study

Dear Senator Fahrenkamp:

In response to your request, we have submitted under separate cover a detailed analysis of the above-referenced study. In addition, the following executive summary reports the conclusions of our review and analysis of the Alaska Petroleum Product Pricing (APPP) Study.

APPP Assertion:

Petroleum product prices charged by refiners in Alaska exceed the price of those products on the U.S. West Coast, plus freight to Alaska.

Tesoro Alaska Finding:

Tesoro Alaska's prices for gasoline, diesel and home heating oil in Alaska are consistently lower than the "West Coast plus freight" price and, in many instances, Tesoro Alaska's prices in Alaska are equal to or lower than West Coast prices excluding freight:

AGO 786854

8700 Tesoro Drive San Antonio, Texas 78286 (512) 828-8484

CENTS/GALLON AVERAGE PRICE DIFFERENCE VERSUS KENAI
1981-82

	Los Angeles	Portland	Seattle
Regular Gasoline	4.79	3.94	3.83
Heating Oil/Diesel	2.52	(0.07)	(0.23)

Note: Actual freight cost from the West Coast to Alaska is 6.5¢ to 7.5¢ per gallon

APPP Assertion:

The Alaskan market is somewhat isolated and, therefore, competitive factors that may be at work in the West Coast market do not exist in Alaska.

Tesoro Alaska Finding:

A price correlation study of West Coast and Alaska prices indicates that Alaska prices neither substantially lead nor lag West Coast prices over time, but reach the point of highest correlation with contemporaneous movement. This suggests that the California, Oregon, Washington, Alaska market area is competitive with prices sensitive to movements within the area:

1981-82 PRICE CORRELATION
(1.0 = exact)

	Los Angeles	Portland	Seattle
Regular Gasoline	0.81	0.90	0.88
Heating Oil/Diesel	0.69	0.60	0.58

APPP Assertion:

A pro forma analysis of Tesoro Alaska's refining profits suggests the Company realized an after tax cash flow of $42.4 million in 1981 and $55.5 million in 1982.

Tesoro Alaska Finding:

It was not necessary for APPP to construct a "pro forma" earnings analysis because Tesoro Petroleum Corporation's 1982 Annual Report, which was publicly available approximately two months prior to the publication of the APPP study, discloses the actual operating profit for Tesoro's Alaskan operations in 1981 and 1982.

The actual cash flow after deducting unallocated overhead, interest expense and pipeline operating profits for the years 1981 and 1982 was $22.2 million and $29.9 million, respectively, or about half the amount calculated by the APPP study. The return on investment calculated according to the same methodology as used in the APPP study, but using depreciated current value for the investment, is as follows:

	APPP	ACTUAL
1981	43%	14%
1982	57%	20%

Tesoro Alaska's analysis has also identified 40 additional specific errors, omissions, or misrepresentations in the text of the APPP study, the combination of which suggests that the study findings, as related to Tesoro Alaska's operations, are incorrect and not supportable by fact, some examples of which are as follows:

	APPP	ACTUAL
° Crude movement cost Drift River to Nikiski ($/Bbl)	$0.24	$2.02
° Crude movement cost Valdez to Nikiski	$0.41	$0.89

° In calculating Kenai refinery gate prices, the APPP study failed to deduct Federal taxes, State taxes, local transportation costs, trade discounts and jobber/dealer discounts from posted terminal prices, resulting in an overestimate of refinery gate prices by more than $7.50 per barrel.

We will be happy to discuss the details of our analysis with the Senate Resource Committee, as well as any legislator, in depth at your request.

Very truly yours,

W. Reed Williams

W. Reed Williams

WRW:dr

MAPCO ALASKA, inc.

April 8, 1983

Honorable Bettye Fahrenkamp
Chairman, Senate Committee on Resources
Pouch V
Juneau, Alaska 99811

Dear Senator Fahrenkamp:

Re: Alaska Petroleum Product Pricing Report

Earlier this year North Pole Refining ("NPR") received a copy of the PACIFIC-ALASKA, INC. report entitled "Alaska Petroleum Product Pricing" ("Pricing Report") dated February 1, 1983. We have reviewed this report which was prepared for the Senate Resources Committee by Lloyd M. Pernela and Louis F. DeLong.* In response to your specific request, we submit the following comments.

The focus of our comments will be on three areas: (i) price comparisons of no. 2 heating fuel, (ii) price reporting of jet A-1 fuel sales (principally at Fairbanks International Airport), and (iii) rate of return on investment. However, before addressing these areas, we will address several issues raised in the introduction to the Pricing Report and also provide some general comments which we feel are illustrative of omissions and errors in the Pricing Report and which, therefore, raise considerable doubts about the conclusions and opinions contained therein.

In the introduction of the Pricing Report an allegation is made that there is an apparent need for greater legislative oversight which would require more information from the industry on profit margins and return on investment. Although NPR does not want to assume the role of evaluating and ruling on constitutional and statutory issues, we nevertheless feel that current statutes are adequate to protect the consumer of petroleum products in Alaska. We believe the State Legislature and State administrative agencies are fulfilling their duties to the citizens of Alaska.

*Messrs. Pernela and DeLong are former employees of NPR. Also, Mr. DeLong sued MAPCO Inc., the parent company of NPR and MAPCO Alaska Inc., in April 1982. The suit has not been finally resolved.

The introduction further indicates that the Legislature's primary intention in providing royalty crude oil to in-state refiners was that it result in lower product prices to Alaskans. This supports the erroneous belief we feel is held by many Alaskans that royalty oil represents a special commercial advantage for in-state refiners. The fact is that NPR pays more for Alaska's royalty crude oil than it pays to any of its other crude oil suppliers. This misbelief is fueled by incomplete or misleading statements such as that found on page 61 of the Pricing Report: "Since NPR is close to the ANS crude oil source it has a geographical advantage over other users of ANS and one questions how much premium NPR must obtain for its heating oil relative to West Coast sources." The Pricing Report fails to mention the fact that approximately 60% of the crude oil used by California refiners is produced in California, with crude oil transport costs averaging substantially less than $1.00 per barrel, an amount considerably less than the tariff amount per barrel NPR pays to transport its ANS crude oil. Also, one must not lose sight of the fact that NPR, due to its geographical location, is the only Alaska and West Coast refinery which is not able to select different types of crude oil to purchase and, therefore, does not have the advantage of market place competition for pricing of the crude oil it runs at its refinery.

In general, the Pricing Report omits pertinent data or information and contains incorrect or imprecise statements and data which, if addressed or corrected, would significantly alter the conclusions reached in the Pricing Report. Some of the major omissions are:

1. In many instances, the origin of the data used in the text and in the tables appended to the Pricing Report is unknown. There simply is a consistent lack of documentation of the sources.

2. We question the cities (West Coast) selected with which to compare heating fuel prices with Fairbanks and Anchorage. As will become more evident in our discussion of no. 2 heating fuel, the cities selected may not provide valid or meaningful comparisons.

3. When discussing the cost of crude oil at NPR during 1980-1981, the Pricing Report fails to take into account the federal crude oil entitlement and small refinery bias programs. For instance, the tables on pages 59 and 61 omit the distortions in pricing patterns caused

by the DOE price control program resulting from regulating variances in the cost of crude oil. Furthermore, while NPR initially may have received a benefit under these programs, in the latter part of the period these programs resulted in cash outlays and, consequently, increased costs of doing business.

4. Even more glaring is the failure of the Pricing Report to discuss the impact of decontrol on crude oil costs and petroleum product prices. For instance, on page 56 the first paragraph in part provides:

> The pricing of petroleum products in Alaska . . . is of highest concern to Alaskans because of the magnitude of the fuel and gasoline cost increases that have occurred over the last three years in Alaska. There have been significant decreases in crude oil pricing and petroleum product prices in the Lower 48/worldwide.

Yet, the Pricing Report never addresses straight forward the increase in crude costs (and resulting increase in petroleum products prices) which occurred after decontrol in early 1981. And, of course, it has only been in the last twelve months or so that there have been decreases in crude oil pricing and petroleum product prices.

5. In the tables on pages 95-97 of the Pricing Report return oil costs have been omitted.

Examples of some of the errors contained in the Pricing Report are:

1. On page 16 the Pricing Report states that the GVEA pipeline interim tariff of 8.6 cents per barrel is still in effect. The tariff was changed to 6.8 cents during 1980.

2. The last paragraph on page 16 also states "the return oil is not assessed a tariff." The return oil is assessed the TAPS transportation tariff from the GVEA connection to Valdez in addition to the quality bank penalty referred to in the same paragraph. With respect to the quality bank referred to on page 16, an amount of 22 cents per degree API was proposed by the pipeline owners effective January 1, 1983. The

amount initially charged was 10 cents per degree API. The whole issue of the quality bank is pending in a proceeding before the FERC.

3. On page 17 in the first paragraph there is a statement that "most of the ANS producers publish a price at the ANS [sic]". Actually, only ARCO posts a price for ANS at Pump Station No. 1.

4. On pages 22 and 23 the Alaska Railroad's tariff for fuel oil (for volumes of 20 million gallons or more) between Anchorage and Fairbanks in December 1982 was 6.67 cents per gallon (not 7.90 cents per gallon) and 6.78 cents per gallon in January 1980 (not 6.17 cents per gallon).

5. On page 59, the "gross" price markups do not add up. Also, the CTW prices printed do not match those routinely gathered by NPR, although in some cases they fall within the range of our CTW prices.

6. Also on page 59 the Pricing Report defines both MARGIN and MARKUP. While it may not be an error to redefine "margin" or "markup" to mean something different from their normal meaning in business and commerce and as defined in Webster's, the use of the terms as redefined in the following text of the Pricing Report can be very misleading to a reader who interprets "margin" and "markup" as normally understood.

7. Although Mid America Pipeline Company is a subsidiary of MAPCO Inc., Mid America Pipeline Company did not acquire Earth Resources Company as reported on page 41; rather, MAPCO Inc. did.

Rather than attempting to point out all the incorrect statements and data, we feel our effort is better spent addressing in some detail the two major products which NPR produces and also discussing in a more general nature rate of return on investments.

PRICE COMPARISONS - NO. 2 FUEL OIL

Pages 58-65 of the Pricing Report are devoted to "Heating Oil Pricing in Alaska", with the focus primarily on the price of no. 2 heating fuel in Fairbanks compared to selected West Coast cities and Anchorage. We will deal with each comparison separately.

The Pricing Report spends several pages comparing Fairbanks and West Coast heating fuel prices.* We do not find the conclusions in the Pricing Report consistent with statistical data published by the Fairbanks North Star Borough's Community Research Center ("FNSB"). The FNSB Energy Report consistently shows no. 2 heating fuel selling to the consumer for less in Fairbanks than it does in Seattle. This report shows the Fairbanks price to be lower than that in Seattle by 2 cents per gallon in November 1980 and 13 cents per gallon in October 1982. In fact, the FNSB report shows that the price in Fairbanks is lower than the average of U.S. Cities (which average is derived from data published by the U.S. Bureau of Labor Statistics). Table I attached to this letter sets forth the FNSB data.

Furthermore, as anyone familiar with no. 2 heating fuel knows, this fuel has a common name but the physical characteristics necessarily vary considerably to reflect the climatological conditions of the geographical location in which the fuel is used. Comparing no. 2 heating fuel in Fairbanks with no. 2 heating fuel on the West Coast, as was done in the Pricing Report, is like comparing the cost of Cadillacs with the cost of Chevrolets because it fails to address differences in pour points (basically a factor of the amount of kerosene blended). West Coast no. 2 heating fuel requires little or no kerosene mixed with the heating fuel to achieve the pour points required in the West Coast markets. NPR's no. 2 heating fuel runs 40% to 50% kerosene, depending on the season, which makes it a significantly more valuable product.**

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*It is difficult to evaluate the comparisons used in the Pricing Report because in some instances "apples and oranges" have been compared. On pages 60-64, among others, the Pricing Report compares a Platt's contract dealer bulk fuel price (which has been designated CTW in the Pricing Report) to an actual CTW Fairbanks price. However, Platt's published prices are actually contract prices for large volumes at pipeline and barge terminals or, in other words, prices before the middleman handles the product while the Fairbanks CTW is for the most part the price after at least one middleman has handled it.

**On pages 58 and 59 of the Pricing Report, the NPR pour point information is inaccurate. Among other things, NPR does not produce a zero pour no. 2 heating fuel. Additionally, NPR's no. 1 heating fuel has a pour point of -60°F.

The Pricing Report also compares the price of no. 2 heating fuel in Fairbanks and Anchorage, despite the fact that the authors apparently do not consider comparisons with Anchorage to be valid.* Yet, the Pricing Report goes on to compare heating fuel prices in Fairbanks and Anchorage (again without making any allowance for the differences in pour points) and alleges that NPR posted prices are higher than Anchorage.** This conclusion is contrary to what we found in the tables contained in the Pricing Report*** and what public data shows. Public data compiled by the FNSB shows that the price per gallon paid by the residents of Fairbanks has been less than that paid by the residents of Anchorage. This data is set forth in Table II attached to this letter.

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*On page 61 in the first full paragraph the Pricing Report states:

> Anchorage is not the best basis of comparison because of the extensive use of natural gas in home/industrial heating . . . . Consequently, a more valid comparison is that made between NPR and Seattle, San Francisco, and Los Angeles.

The inference appears to be that Anchorage does not have enough sales of heating fuel because of the dominance of natural gas and, therefore, the price of heating fuel in Anchorage is "artificially" lowered because it is set by natural gas. (On page 5 the Pricing Report states that "Anchorage has the lowest cost heating energy in the entire United States".) However, sales of heating fuel in Anchorage are in the neighborhood of 30 million gallons a year. Furthermore, when compared to the three West Coast cities, Anchorage has the winter climate which most closely resembles Fairbanks and therefore should represent a more valid comparison.

**On page 24 the Pricing Report states: "If the NPR Posted prices in Fairbanks were identical to the Anchorage postings, then the residents of Alaska's Interior would save over $15.7 million on their fuel costs." This statement simply is incorrect and is not supported in the Pricing Report.

***For instance, refer to Tables IV-I-1a and IV-K-1a. Comparing line two of each table indicates that for ten of the twelve months in 1982 the retail price of no. 2 heating fuel in Fairbanks was less than in Anchorage.

Further, the benefit brought to the Interior of Alaska consumers by NPR is readily apparent in the FNSB published data which shows heating fuel prices in Fairbanks changing from significantly higher than Anchorage prior to NPR's existence to lower than Anchorage after NPR came on stream.

PRICE REPORTING - FAI JET A-1 FUEL SALES

Pages 29-35 of the Pricing Report address commercial jet fuel sales. The Pricing Report asserts that the price of jet fuel in Fairbanks is higher than in Anchorage and this higher price differential maintained by NPR is the reason for the market shift from Fairbanks International Airport ("FAI"). The posted prices at FAI cited in the Pricing Report are not those of NPR. They are of a higher priced supplier who sold less than 2% of the fuel dispensed at FAI during the past several years.

NPR played the major role in developing the international air cargo traffic at FAI. Needless to say, NPR is intensely interested in maintaining Fairbanks airline jet fuel volumes since these volumes, or lack of, affect the profitibility of the refinery. Certainly, volumes would be seriously affected if NPR products were priced out of the market, thus eliminating or reducing aircraft refueling business at the Fairbanks airport.

However, despite our efforts at FAI, there has been a shift of some airline traffic to Anchorage. It must be recognized that airline fueling operations at Fairbanks, like any other international airport, are affected by world-wide economic conditions. It is no secret that many, if not all airlines, have seen profits eroded considerably, if not eliminated competely, in recent years. Consequently, airlines have looked to effectuate operational efficiencies and reduce costs wherever possible. One method is to reduce station personnel and station operating costs by consolidating operations at a single airport in the same geographical area. Such appears to be the case with FAI. Some of the international carriers have consolidated their operations in Anchorage, moving their cargo flights to Anchorage since the Anchorage airport has the facilities and amenities the carriers feel are necessary to accommodate international passenger flights, but which are deemed by the airlines to be lacking at the Fairbanks airport.

NPR's marketing people are in constant touch with major international airline representatives to see what can be done to maintain or increase business at the Fairbanks airport.* NPR pricing policies are designed to attract airline fueling business at FAI, not drive it away.

RATE OF RETURN - INVESTMENT

A meaningful rate of return on investment must take into consideration the capital required to build facilities, the moneys required to handle daily inventories and accounts receivable and the stream of earnings over the life of the business. Failure to include all of these costs in the calculations will distort the final results. The Pricing Report falls into this latter category.

The total dollars invested in NPR is about three times the fixed asset base estimated in the Pricing Report. This fact by itself overstates the rate of return in the report by a factor of three without going into the many costs of doing business that were completely ignored in the Pricing Report. In addition, there was no consideration given to the added risks of constructing a refinery in the Interior of Alaska.

Similarly, it can be misleading to focus on a short time period and draw conclusions from the resulting data.** Based on two years of assumed financial data, the Pricing

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*Contrary to the implication on page 33 of the Pricing Report, NPR sells jet fuel at FAI and Anchorage by individual contracts with airlines and not to an airline consortium. In fact, no airline consortium of any type exists at Fairbanks. Similarly, and contrary to what is stated on pages 31-33 and 86 of the Pricing Report, in Anchorage there is no consortium buying jet fuel for airlines. The consortium in Anchorage was formed for the purpose of handling distribution of jet fuel after it has been purchased by the individual airlines.

**For instance, a review of available data shows that revenues of the State of Alaska were up four times in four years from 1979 to 1982. If that is all one relied upon, one could assume that revenues would quadruple every four years forever and, consequently, by the year 1994 revenues of the State would be up by $256 billion, which may not be an appropriate forecast.

Report alleges that the Tesoro and NPR refineries are paying for themselves in about two years. However, the Pricing Report fails to consider the cost of money during construction, prior years of start-up and operation, and the stream of earnings over the life of the facility. The fact of the matter is that since start-up, NPR has yet to recover its capital costs. Assuming the business climate remains favorable during the period, the projected rate of return for NPR the next five years is at best about 15 to 17.5% each year.

In conclusion, we (i) are not certain of the origin of the numbers used in the text and various tables of the Pricing Report, (ii) question the cities selected for price comparisons, and (iii) believe the Pricing Report contains obvious factual errors which raise substantial questions about the conclusions reached. We have attempted to point out some major issues or points which we feel respond to those issues which truly were the focus of the State Legislature in having a report prepared. Finally, we sincerely believe that our investment in NPR has resulted in a monetary savings to the Interior consumers of our products and has greatly benefited and continues to benefit the Fairbanks area.

Very truly yours,

John L. Seawell
President, MAPCO Alaska Inc.

JLS/fb
Attachments (2)

cc: Mr. W. H. Thompson, Jr.

TABLE II
HOME HEATING OIL COST COMPARISONS
(Per Gallon Delivered to Consumers)

	October 1976	October 1977	October 1978	October 1979	October 1980	October 1981	October 1982
Fairbanks Average	0.571	0.614	0.603	0.776	1.033	1.242	1.145
Anchorage	0.46	0.508	0.52	0.846	1.045	1.223	1.19

Data compiled by Fairbanks North Star Borough Community Research Center.

*The FNSB Community Research Center has not developed the above information for each month of each calendar year.

TABLE I
HOME HEATING FUEL OIL COST COMPARISONS
(Per Gallon Delivered to Consumers)

	November 1980	March 1981	June 1981	September 1981	December 1981	March 1982	October 1982
Fairbanks	1.06	1.21	1.21	1.21	1.24	1.20	1.15
Anchorage	1.07	1.20	1.23	1.23	1.24	1.25	1.19
Seattle	1.08	1.25	1.27	1.27	1.30	1.28	1.28
S. Cities	1.03	1.29	1.26	1.24	1.25	1.21	1.21

Fairbanks data calculated by the Fairbanks North Star Borough Community Research Center. Anchorage, Seattle and U.S. Cities Average compiled by FNSB Community Research Center from U.S. Bureau of Labor Statistics.

*Note that the above months are the only months for which the FNSB Community Research Center Compiled the Comparisons.

ALASKA PETROLEUM PRODUCT PRICING

A review of industry practice and policy
and its effect upon
energy costs to Alaskans

Prepared for the
SENATE RESOURCES COMMITTEE:

Senator Bettye Fahrenkamp, Chairman
Senator Robert H. Ziegler, Vice-Chairman
Senator Paul Fischer
Senator Richard I. Eliason
Senator Vic Fischer
Senator Bob Mulcahy
Senator Arliss Sturgulewski

by
Louis F. DeLong
Lloyd M. Pernela

PACIFIC-ALASKA, INC.
Fairbanks, Alaska

February 1,1983

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ACKNOWLEDGEMENTS

We wish to thank all the people to numerous to mention for their kind assistance in the development of this report. We wish to especially thank Mr. George C. Silides for his contribution of information at critical points and his assistance in the editing.

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LIST OF TABLES IN APPENDIX (CONT'D)

CHAPTER ONE

INTRODUCTION

A. PURPOSE OF STUDY

Alaskans in the different regions across our State do not share uniformly in the economic benifits associated with the production and development of our State's vast energy resources. The dichotomy is most striking. For example, Anchorage has the lowest cost heating energy in the entire United States while most other Alaska communities ,conversely, have the highest energy costs in the entire United States. Alaska's closeness to major petroleum energy resources would suggest other than high petroleum prices. Questions, therefore have arisen as to why one Alaskan should pay twelve times what it costs another to heat his home. Also, why should the prices of motor gasoline and diesel oil vary so drastically throughout the state? Are the differences in price justified or not? To determine the answer to these questions, this review of State and industry petroleum product policy is being undertaken.

The Legislature is required by law (see *) to see that the economic benefits of our State energy resources are shared by all Alaskans. For example, the legislature's intention in providing Alaska's royalty crude to in-state refiners, was that it should result in lower petroleum product prices to Alaskans. (see **). This has not been the result, and numerous communities and individuals have challenged the lack of Administrative compliance of Legislative intent, thru resolutions and petitions.

There is an apparent need for greater Legislative oversight. To provide that oversight, the Legislature will require better information than it has been receiving on the fundamental aspect of the industry; that of profit margins and return on investment.

* Section 2, Article VIII, Constitution of Alaska

** AS35.05.183, AS38.06.070

The Senate Resources Committee, in the fall of 1982, asked Pacific -Alaska, Inc. to investigate petroleum product pricing policy in Alaska. The focus was centered upon petroleum liquids because of the many complaints received from the public on the pricing of these products throughout Alaska. The natural gas industry was not considered, since it operates as a utility under the Alaska Public Utilities Commission and, as such, its costs and prices are subject to a publicly supervised "rates board".

The petroleum pricing investigation was Alaska consumer directed; that is, it reflects cost elements based upon the delivered cost of fuel and energy to the Alaska consumer. Our mission as developed was:

(1), Identify and review pertinent International and United States petroleum pricing policies;

(2), To review Alaska petroleum pricing policy, including but not limited to, crude costs, petroleum transportation costs, refiner's, wholesaler's and distributor's markup;

(3), To identify and review past State petroleum pricing incentive programs;

(4), To provide an analysis of the relationships among the in-state refiners, namely, Chevron, Tesoro and North Pole;

(5), To determine the competitive relationships between the Alaska refineries and "outside" refiners importing petroleum products into Alaska; and

(6), Based on the study findings, to recommend to the Legislature changes in existing legislation and regulations to insure a more competitive petroleum pricing environment throughout Alaska.

B. BACKGROUND TO PETROLEUM PRODUCT PRICING

The study of petroleum pricing is a multi-faceted endeavor. The average consumer of petroleum products probably does not realize the complex process that occurs in the manufacture, transportation and marketing of a gallon (or barrel) of petroleum product, be it gasoline, heating oil, or jet fuel. The path from a barrel of crude oil to the delivered refined product has distinct definable parts: namely crude production, crude transportation, product refining, product transportation, wholesaling, and distribution to consumer.

Each of these entities that contribute in making available a gallon of petroleum product to the final end user seeks compensation (including profit) for their investments of material and manpower in Alaska. In this study, the contributions that each entity makes in manufacturing, transporting and marketing the finished petroleum product is reviewed over the 1980-1982 period.

The pricing process starts with crude oil which must be sought, found, produced, cleaned and marketed. Once a buyer-seller relationship is established between the crude oil producer and a refiner for the crude oil it must be transported to the refiner's facilities. Of course, the value of a particular crude oil to a refiner is related to the petroleum products that can be made from the crude in question at the refiner facilities, namely the amount of the more valuable products (jet fuel, gasoline, diesels) that can be made from a crude oil when considering the cost of that crude at his refinery.

The transportation of the crude oil can be as simple as in the case of the North Pole Refinery receiving crude oil directly from the Trans Alaska Pipeline System (TAPS), or as complicated as in the case of Tesoro or Chevron who may secure crude oil from multiple sources namely, by TAPS in conjunction with the right size tanker from Valdez to Nikiski, from Cook Inlet by tanker or pipeline to Nikiski, and from overseas crude sources where the movement is in large ocean going vessels.

When the crude oil arrives at the refinery the decision has to be made as to what petroluem products will be made from the crude or mix of crudes. This decision involves taking into account product inventories in the refinery's market area, the drawdown of these product inventories, and the competition's refinery production and marketing efforts. In the case of the Chevron and North Pole refiners, which are currently running only ANS crude oil, and whose facilities are limited to simple distillation and blending of refined products, the decisions are fairly straight forward.

The Tesoro refinery on the other hand, is somewhat more sophisticated, allowing for more flexibility. The Alaska in-state refiners, however, do not have the flexibility that the large refiners on the West Coast

or the Pacific Rim enjoy, since these latter plants are fairly complex and have a greater ability to alter the physical composition of the refined fractions in the crude oil. The refiner offers his products at a rack price to both consumers (large volume) and wholesalers, and this price compensates him for the crude purchased, his operating and administrative expenses, and should provide him an adequate return on his investment. An attractive return on refinery investments is 15-20 % (DCF).

The wholesaler is generally responsible for receiving products from the refiner(s) and transporting these petroleum products to his terminal facilities where he maintains an inventory of products for sale, primarily to the distributors in the area serviced by his terminal. The wholesaler operates, generally under a company logo, e.g. Union, Chevron, and sells to distributors that also sell under that same logo. For example, a Chevron distributor will receive petroleum products from a terminal that supplies Chevron refined petroleum products and will market these directly to the public. The wholesaler does not generally deal with the consumer directly. Some wholesalers in Alaska do market directly to consumers that require large volumes at a "consumer tank wagon" (CTW) price. The wholesaler's primary function, however, is to maintain an adequate supply of petroleum products for the distributors that work thru him. For this service the wholesaler includes in his price to his distributors a fee that compensates him for handling the refined products and for his maintenance of inventory, plus a reward for his investment of money and time.

The consumer obtains his petroleum products from a distributor, either thru a service station or a heating oil delivery service. The distributors in general do not maintain product inventories but rely upon the wholesaler's terminal facilities, excepting in the remote areas of Alaska where the distributors do have some inventory capability. The distributor maintains a fleet of delivery vehicles which pick up products at the wholesaler's (in some cases directly from the refinery) terminal and delivers the required refined petroleum products to the individual customers. The distributor, in-turn, bills the end-user a price which reflects his cost of petroleum products, a return on his investment and time and the

recovery of his operating expenses, plus a profit element.

The consumer during the past few years has seen higher and higher prices charged to him on petroleum products he purchases and is becoming frustrated in his inability to obtain an explanation for these cost increases. The local distributor points to the wholesaler who in turn points to the refiner who mentions fluctuating crude prices, drastic imbalances between supply and demand, etc. There is little dialogue relating to the real issues, namely the relationship of petroleum prices with crude quality/cost, supply-demand, transportation, marketing costs and profit margins. Furthermore, because of the capacity of the limited number of entities making up the petroleum sector in Alaska, coupled with the difficulty that new entrants have in entering the market, the petroleum industry in Alaska operates in a limited entry environment. Because of this situation, the Alaska petroleum industry may be less than responsive to the dynamic economic forces of a "free market."

In the following pages an analysis of all the elements that contribute to the final refined petroleum product prices will be reviewed. In addition comparisons will be made on component markups (difference between transfer prices between two parties) over time, petroleum product pricing relative to the more responsive market on the West Coast, and the pricing and profitability of the Alaska refiners. After these relationships have been discussed, an executive summary addresses the cost-pricing relationship of petroleum products in Alaska.

C. DATA SOURCE

The information required to conduct this study on petroleum products pricing in Alaska was obtained from public data in conjunction with discussions with various refiners, wholesalers, and distributors.

The Alaska crude oil data was available thru the State Department of Natural Resources. The data on other crude costs was obtained from industry publications: Platt's OILGRAM Price News, Oil and Gas Journal, Petroleum Intelligence Weekly, and The Petroleum Economist.

The retail pricing of heating oils in Anchorage and Fairbanks is monitored by the Fairbanks North Star Borough (FNSB) Community Research Center. They also monitor heating oil prices in Anchorage.

The Lundberg Survey started monitoring Anchorage gasoline retail, wholesale prices and distributors' product margins in September 1981. Retail gasoline data for Fairbanks is monitored by the FNSB. The Lundberg data on gasoline prices for West Coast cities and Anchorage was used in the comparative analysis section.

Terminal consumer tank wagon (CTW) postings for heating oil, bunker fuel, fuel oils, and gasoline prices for Seattle, Los Angeles and San Francisco were obtained from Platt's OILGRAM price summaries. The U.S. Department of Energy "Monthly Petroleum Product Price Report" was a source of U.S. retail, CTW, and wholesale prices averages.

Public posted CTW prices (minimum 400 gallon purchase) were made available to the study by a number of wholesalers. In all instances, the actual wholesale prices were deemed proprietary and kept confidential so that the "in-house" relationships between CTW and wholesale prices was not exposed. To do so would have given the wholesaler's competitors an advantage in bidding for a customers business.

The CTW prices are representative of some wholesale prices but not all. For example, price discounts are known to exist to large industrial customers, but their magnitude is not known. The important point to keep in mind is that this price interface between wholesaler and distributor may vary about the averages, but this variance will not significantly affect the magnitude of the decision and conclusions.

Prices ex refinery, which are public information, were obtained from a variety of sources, and in many instances were cross checked against wholesalers acquisition costs corrected for transportation costs. In those cases where variances in costs did appear, they were minimal and little effect on the margin/profit analysis was noted.

The marine transportation costs were derived from (a) "Worldwide Tanker Nominal Freight Scale", published semi-annually by the Worldscale Association, New York, with monthly average freight rate assessments by type/size of vessel (AFRA) and (b) "American Tanker Rate Schedule" published by the Association of Ship Brokers and Agents, New York. Both these sources present a rate between two harbors, e.g. Nikiski and Los Angeles. Two other references of note are "Alaskan Tanker Fleet Economics" by Martingale, Inc. for the Alaska State Legislature dated December 20,1978 and "The Jones Act and Its Impact on the State of Alaska" prepared by Simat, Helliesen and Eichner for the Alaska Statehood Commission dated July 1982. There was general agreement between these studies and the published rates.

This study on Alaska petroleum pricing uses, the most expensive transportation rate, namely General Purpose Marine (GPM) tanker rates between Alaska ports and between Alaska and West Coast and Indonesian ports. Using GPM tariff is a most conservative assumption since it debited Alaska refiners a higher transportation cost than actually incurred. This was done because it was not possible to obtain the vessel rates in effect during the study period nor the actual size of the vessels used in transporting crude and petroleum products. The effect of using GPM tariffs was to deflate refinery margins/profits and to deflate the apparant differences between West Coast postings and Alaska petroleum product postings.

The Alaska Railroad provided their petroleum tariff over the study period, 1980 -1982. The Alaska Public Utilities Commission provided the intra-state pipeline tariffs.

The petroleum products demand and supply was derived from data from various sources: those already mentioned, the Port of Anchorage (volume), the State Department of Revenue (DR; consumption), the State Division of Energy and Power Development (DEPD; refiners supply), the ARR (volumes), the pipeline companies, the Army CORPS of Engineers (port volumes), State Department of Transportation and Public Facilities (DOTPF; airport volumes), the Federal Defense Fuel Supply Commission (DFSC; volumes), State Department of Natural Resources (DNR; consumption and production) and the U.S. Coast Guard (port volume movements). The DR which reported monthly data on consumption

and fuel type dropped its tabulation of regional totals in June 1982, leaving a large void in petroleum product consumption data.

CHAPTER TWO

ALASKA PETROLEUM PRICING AND TRANSPORTATION

In Alaska, the effect of transportation on petroleum products and crude oil prices is significant. Historically, the pricing of Alaska's petroleum products has been based on rack prices at a refinery in California or Washington State plus marine transportation including terminal fees. That pricing basis is radically changed today, although vestiges of the old system continue in spite of the fact that Alaska produces its own crude oil and has four operating refineries which utilize in State as well as "outside" crudes.

The Alaska crude oil prices at a production location are determined by a net-back process where-in the value of the crude at the West Coast/U.S. Gulf Coast refinery(s) is determined; then the transportation costs from the refinery to the producing field including the field gathering costs are subtracted from the value of the crude at the refinery(s). The result is the well-head price of that crude oil. Since the bulk of the ANS crude oil is used outside of Alaska, the Alaska refiners, who do not incur as large a crude oil transportation cost, pay a lower cost for their crude.

A. COOK INLET CRUDE OILS

The first Cook Inlet field the Swanson River Field was discovered July 19,1957. The field peaked in production in 1972 at 199,000 barrels per calender day (BPCD). The 1981 production at 31 million barrels was equal to 85,000 BPCD and is dropping at the rate of about 15 per cent annually. The source of a "sweet" crude (low sulfur content) of high gravity (average 35.4 degrees American Petroleum Index, hereafter refered to as API) close to the Alaska market was the impetus for the construction of the two Nikiski refineries in the sixties.

The Cook Inlet crudes are collected at one of two separate terminals: the Cook Inlet Pipeline Company terminal at Drift River on the west side of Cook Inlet and the Kenai Pipeline Company terminal at Nikiski on the east side. The price for Cook Inlet crudes is posted at the terminal by those willing to purchase these crudes for use in their refinerys: ARCO, Chevron, Mobil, and Union. In September of 1982 their base price (for 34.0 API and 35.0 API) varied from $26.20 per barrel (PB) to $27.45 PB as published in Platt's OILGRAM news. These postings adjust for differences in gravity of the oil received. Table II-A-1 summarizes the gravity of the various Cook Inlet Fields which vary from 40 API to 27 API, and which over the entire area average 35.4 API.

The State of Alaska in 1981 had approximately 77,800 BPCD of production on its Cook Inlet leases. The State receives 12.5 % of this oil either in-value (at the price the oils are sold at by the crude producers) or may take its Royalty oil volume in-kind (actual ownership of the oil and responsible for its disposition/sale). The State's Cook Inlet royalty oil (in-kind) is sold to Tesoro. The cost in 1981 averaged $28.71 PB whereas in 1982 it was $28.28 PB. This price is an average of the Cook Inlet postings in effect over a given month. Table II-A-2 summarizes the monthly volumes and the price paid by Tesoro. Remember that the posted offer on the Cook Inlet crudes at the producing field reflects the value of these crudes to refineries on the West Coast less their transportation costs. Tesoro therefore enjoys a transportation advantage (about $1.40 PB of crude oil) over West Coast refiners who process Cook Inlet crudes. On the other hand, for west side crude, Tesoro must incur a small transportation fee ($.24 PB) from the Drift River terminal to the Nikiski terminal by barge or tanker.

Tesoro relies heavily upon Cook-Inlet crude oil to meet its crude requirements so that Tesoro will have to seek other crudes by the middle eighties because of Cook Inlet declining production. Chevron has already modified its plant (designed for "sweet" Cook Inlet crudes) to process ANS crude oil.

B. THE TRANS ALASKA PIPELINE SYSTEM

The Trans Alaska Pipeline system (TAPS) moves crude from the Alaska North Slope (ANS) at Prudhoe Bay to Valdez, a deep water port on the Gulf of Alaska. The thru-put of the pipeline is determined by the field production limits set by the Alaska Oil and Gas Conversation Commission. The Sadlerochit Field's production is set at an annual 1.5 MM BPCD and the Kuparik field at 160 M BPCD.

The TAPS is owned and operated by eight oil companies; the largest corporate holding in TAPS is by the combination of SOHIO and British Petroleum. The owners each operate as a separate pipeline company; their initial filed tariffs filed with the ICC now within the Federal Energy Regulatory Commission averaged $6.20 PB. The current average of the eight different tariffs is $5.84 PB: however, the final tariffs have not been set by FERC. When they are set, the pipeline transportation bills will have to be retroactively adjusted for each shipper in the line. This transporation adjustment will then, retroactively in effect, change the price of the ANS crude oil at the well-head. Table II-A-3 summarizes the individual pipeline company rates.

A shipper of ANS crude using TAPS can pay one of eight different tariffs to move his crude from the ANS to Valdez or an intermediate point. Since most shippers seek the cheapest pipeline tariff, that owner of the cheapest capacity may not have enough "space" and the shipper's request will have to be prorated (space granted would be smaller than the request), and for the remainder of his volume he would go to the other carriers.

All shippers must participate in the TAPS quality bank which adjusts for crude quality entering the TAPS. At the North Slope, Kuparik field production (24 API) and the Sadlerochit field (26.4 API) enter the system. North Pole Refinery's "return oil" is injected into TAPS at about 19.4 API. All of the crude oils entering are comingled, and the crude oil received at Valdez is fairly uniform in quality and not much different from the Sadlerochit field crude (because of the

dilution effect) at the North Slope. All shippers are also assessed a line loss and fuel used volume which is approximatly 10 cents PB at todays crude costs.

The intra-state pipeline tariff for ANS crude oil moved from the North Slope thru TAPS to North Pole or Nikiski is regulated by the Alaska Public Utilities Commission (APUC), which inherited the responsibilities of the now defunct Alaska Pipeline Commission (APC). The intra-state tariff set by the APC is based on the revenue requirements of the pipeline owners, including a fair return on their investment book value. The APUC rate for movements from the ANS to Valdez is identical to the FERC rate, $5.84 PB. The APC rate for movements to North Pole averages $3.67 PB, and was approved on an interim basis using the carriers' original filed tariff. The APC rate has not been changed, even though the FERC filed rates have dropped 36 cents PB. (See Table II-A-3).

The difference in the TAPS tariff, between North Pole and Valdez provides the refinery at North Pole with a crude acquisition cost advantage over a refiner who receives his crude from Valdez of about $2.17 PB. The tariff difference recognizes North Pole as being much closer to ANS than Valdez.

NPR receives crude oil from TAPS thru the Golden Valley Electric Association's (GVEA) eight inch diameter pipeline. The design capacity of the system (pipeline and metering station) is 50,000 BPSD. The return oil from NPR, primarily residual but also unsold refined products, is reinjected into TAPS via GVEA's six inch diameter return line. The GVEA pipeline is regulated by the APUC. The original APC interim tariff of 8.6 cents PB of crude entering the refinery is still in effect. The return oil is not assessed a tariff. NPR pays into the quality bank a penalty of $.15 PB per API on about 7 API change. This seven degrees is the difference in gravity between the crude oil received into NPR and the returned oil pumped back thru GVEA pipeline into TAPS.

C. ALASKA NORTH SLOPE CRUDE OIL

The value of the Alaska North Slope (ANS) crude determined for State severance tax and royalty in-value payments is defined in an agreement between the crude oil producers and the State of Alaska as the selling price (at the point of transfer) of the oil less the transportation costs required to bring the oil from the ANS to the point of title change. The State's Royalty oil under currently producing leases is 12.5 volume per cent. Today most of the ANS producers publish a price at the ANS; the crude oil in-value and serverence tax payments to the State are based on this number. The fact that each crude oil producer reports a different monthly value to the State for the same crude oil reflects each end users various transportation costs and the different value of the crude oil at the end use refineries.

Based on current effective TAPS tariffs, the royalty oil in-value price at the well head was $25.64 PB in Feb'81 --- immediately after Federal decontrol of crude oil pricing. From this base price it decreased to a low of $18.42 PB in Mar'82, rose to $20.37 PB by Aug'82, and has now fallen to the current value, $19.97 PB. Table II-A-4a/c outlines these price trends over the 1980 -1982 period. As shown in the Table, the delivered price of ANS crude oil at NPR was $30.14 in Feb'81, fell to $22.83 in Mar'82, rose to $24.91 in Aug'82 and was $24.15 in Nov'82.

D. MARINE RATES

In the previous section the movement of crude oil from Valdez to Nikiski or other West Coast locations was outlined to show how it affected the cost of crude oil used in Alaska. The marine tanker rates used in this study are the published rates by the Worldscale Association and the Association of Ship Brokers and Agents. These rates define a base tariff per ton for a movement between two ports either a round trip or leg of a multi-port journey. Monthly factors that bring the semi-annual published rates current; these adjustments

are published monthly in various petroleum trade journals for different size tanker: General Purpose, Medium, Large 1, Large 2, VLCC, ULCC and Single Voyage (dirty). For the month of June 1982 the average freight rate assessments (AFRA), as a per cent of Worldscale published rates, were 184, 138, 78, 55, 40, 32, and 63, respectively. Port fees such as Anchorage's 7 cents PB are not included.

The calculated transportation costs, utilizying General Purpose Marine (GPM) tanker rates assumed in this study are shown in Table II-B-1a/c for crude oil, kerosene, and gasoline for ports connecting to Alaska locations and for tanker movements within Alaska. Table II-B-2a/c gives the Medium tanker rates for comparison. The General Purpose Marine tariff rate was chosen because it is the most conservative of the rates, since it utilizes the highest transportation costs to and within Alaska. In effect it overstates the refinery's and marketer's cost, since most tanker movements to/from Alaska are in larger vessels than the GPM category. Not knowing what size vessels each company utilizes for its marine movements, a tariff was chosen which could be improved upon in actual operations. Some of the pertinent tariff rates for Jun'82 are shown below.

General Purpose Marine Tariffs, June 1982

CRUDE	Drift River to Nikiski	$ .24 PB
	Valdez to Nikiski	$ .41 PB
	Indonesia to Nikiski	$3.39 PB
	Valdez to Los Angeles	$1.34 PB
GASOLINE	Los Angeles to Anchorage	$2.73 PB
	Los Angeles to Ketchikan	$1.73 PB
	Anacortes to Anchorage	$1.93 PB
	Anacortes to Ketchikan	$1.01 PB

The two Nikiski refineries (Tesoro and Chevron) supply petroleum products to Alaska coastal communities ,such as Valdez, Dutch Harbor, Ketchikan, Homer, Kodiak and the Alaska fishing fleet, and export some refined petroleum products to California, e.g. residual oil and light straight run naphtha. These coastal/export movements originate by petroleum product tanker(s) from the dock at Nikiski.

Marine freight rates are important to Alaskans for four reasons:

(a) they dictate the value of Alaska's crude oils,

(b) they determine Alaska's "closeness advantage" (e.g. at Nikiski a refiner can receive ANS crude at $.93 PB cheaper than a refiner in Los Angeles; Drift River terminal Cook Inlet crudes at approximately $1.10 less than a refiner in Los Angeles),

(c) they greatly influence the price level that an outside refiner can sell his petroleum products in Alaska, and

(d) they influence an Alaskan refiner in his ability to sell his "surplus" products in the West Coast market.

In a competitive market (ignoring economy of scale issues), the refiner on the West Coast would market his gasoline from his tank terminal to Alaska at a West Coast price plus gasoline marine freight; namely, terminal price plus $2.73 PB (transportation cost Los Angeles -- Anchorage). This assumes that there are no refineries in Alaska or any Alaska crude production. Such is not the case.

E. THE NIKISKI PIPELINE

The Nikiski Pipeline operates from the Nikiski refineries on the Kenai Peninsula to the Port of Anchorage terminal area. The ten-inch diameter products pipeline began operation on September 25,1976 and was constructed at a cost of slightly more than 22 million dollars. It is seventy miles long, and has a capacity of 40,000 barrels per day. Based on a thirty year life and an average thru-put of 21,000 barrels per day, the APC set the first year tariff rate at 68.8 cents PB, or 1.64 cents per gallon. The pipeline is owned and operated by the Tesoro Alaska Pipeline Company, a wholly owned subsidary of Tesoro.

At Nikiski the pipeline accepts petroleum products either from the Tesoro or the Chevron refinery. At the Port of Anchorage deliveries can be made to any of the petroleum products receiving terminals.

Refined products from the two Nikiski refineries destined for Anchorage and the regions served from Anchorage (Railbelt) move by this pipeline; the thru-put volumes reflect the volume of products

supplied to this market.

Nikiski Products Pipeline Annual Thruput

year	BPCD
1977	14.8M
1978	17.0M
1979	20.8M
1980	20.7M
1981	23.7M
1982	27.5M

The 1982 average annual pipeline thru-put (from the Chevron and Tesoro refineries) has increased more than 32% above the 1980 levels. This increase is primarily the result of the Tesoro's increased refinery capacity and the corresponding increase in the production of unleaded gasoline and commercial jet fuel in January 1981. During this 1980-1982 period Tesoro also captured a larger share of the Anchorage market, because of their geographical competitive advantage compared to "outside" refiners who previously supplied these products.

F. THE PORT OF ANCHORAGE

The Port of Anchorage receives petroleum product tankers at its dock and then directs petroleum supplies to any of the terminals located in the dock area: namely, the U.S. military, Tesoro, Union, Chevron, the Airline Consortium (formerly Shell's) or Texaco terminals. The Nikiski Pipeline can also deliver petroleum products to each terminal and each terminal in turn, can deliver petroleum products to the Anchorage International Airport via the six-inch 750 BPH products pipeline owned by the airline consortium. The petroleum product terminals in turn, can deliver to the Military Terminal and its Pipeline which connects with Elmendorf AFB and Fort Richardson. The only Anchorage Port terminal capable of receiving petroleum products from the Alaska Railroad (i.e. North Pole Refining's products) is Texaco. All terminals, on the other hand, are capable of delivery to the Alaska Railroad or to tank truck(s).

All petroleum movements across the Anchorage Port dock or its attendent property are taxed and recorded. The annual marine volumes (this excludes the Nikiski Pipeline volumes into the Port terminals) from 1976 to present, as shown below, indicates a dramatic decrease in the volume of petroleum product "imported" from "outside" Alaska. These figures also indicate the inability or desire of "outside" refiners to compete with in-state refiners.

PORT OF ANCHORAGE ANNUAL PETROLEUM MOVEMENTS
thousands of barrels per calender day

	IMPORTS			
year	foreign	domestic	total	exports
1976	7.1	25.7	33.4	
1977	8.4	13.9	22.4	
1978	7.9	11.4	19.3	.1
1979	7.1	5.9	13.0	.4
1980	4.8	6.5	11.2	.4
1981	1.1	6.1	7.2	
1982	.5	5.1	5.6	.4

The decreases in imported refined petroleum products into Anchorage are directly attributable to the following:

i. The Nikiski Pipeline eliminates the need to bring petroleum products by barge from the Nikiski refiners; the petroleum products are moved directly to the petroleum product terminals in Anchorage and, in turn, a large amount is transferred to the Anchorage International Airport.

ii. The North Pole Refinery which supplies Interior Alaska refined petroleum products except gasoline. NPR supplies jet fuel to both the Anchorage International Airport as well as the Fairbanks International Airport.

iii. The increased capacity of both the NPR in 1980 and the modifications to the Tesoro Refinery in 1978 and 1981.

iv. The decontrol of oil in January 1981, and the withdrawal of a foreign fuel supplier to the Anchorage jet fuel market.

v. The geographical economic advantage that an in state refinery has over "outside" refineries, because of its crude costs and

product transportation advantage.

The decreasing amounts of imported refined petroleum products into Alaska does indicate the increasing self sufficiency and ability of the Railbelt refiners to supply and successfully compete for that region's petroleum product requirements. Furthermore, thru various plant modifications and expansions at the Tesoro and North Pole refineries, the local supply of petroleum products has become more in line with demand.

The requirement for imports into Alaska is discussed in Chapter III (see jet fuel and demand-supply sections). The export of petroleum products to California thru the Anchorage Port is a result of the North Pole Refinery supplying Alaska's Interior demands. The movement of petroleum products from North Pole thru the Anchorage Port to destinations outside the State is by the preferential ARR Tariff 8-T, Item 445, i.e. is 92 cents per 100 pounds which is less than the ARR's largest volume tariff (lowest price) between Fairbanks and Anchorage for in-state consumed products at 101 cents per 100 pounds (Item 635).

G. THE ALASKA RAILROAD

The Alaska Railroad (ARR) provides tankcar and tank train service from Anchorage to various locations on its system. The primary petroleum movements are between the Anchorage Port terminal area and the Interior Alaska terminals: Nenana, Fairbanks, North Pole Refinery, and Eielson AFB.

The ARR's Tariff Number 8-T, "Local and Joint Rates On Petroleum and Petroleum Products, Carloads" defines the transportation rates for petroleum products in tankcars owned by the shippers. Table II-C-1 summarizes the changes in the tariff since January 1980. The average tariffs in effect for any given month during the 1980-1982 period are summarized in Table II-C-2 for motor gasoline (mogas) and in Table II-C-3 for heating oils.

The heating/diesel oil tariff (for volumes of 20 million gallons plus) between Anchorage and Fairbanks has risen from 6.17 cents per gallon

(c/g) in January 1980 to 7.90 c/g at the end of December 1982 or roughly 28 %. The State of Alaska consumer price indices over this period suggest that only a 21 % increase was needed to keep up with inflation on operation costs. The December 1982 tariff for movements of petroleum products from NPR to Nenana was 4.57 c/g; the tariff for the movement from Anchorage to Nenana was 7.90 c/g. The transportation savings therefore of supplying the Nenana market from Fairbanks versus Anchorage amounts to 3.5 c/g.

The cost of petroleum products in Alaska's Interior will obviously be higher if petroleum products have to be shipped to Fairbanks from Anchorage. The NPR, however, does not incur these transportation costs for the petroleum products it markets in the Interior of Alaska. If manufacturing costs are assumed about equal for a refiner in Anchorage and in Fairbanks, then the Anchorage refiner can not effectively compete in the Fairbanks region because the rail transportation cost is an added expense; the same argument is valid when a Fairbanks refinery ships petroleum products to Anchorage. In effect, a refinery in Alaska can only compete in the "other fellows market" if its total of petroleum product costs and operating costs are less than its competitor (refiner) by at least the amount of the transportation (ARR tariff) cost.

The "barrier" effect of the tariff expense is vividly detailed in the table below. The NPR refinery was completed in the latter part of the summer of 1977, and a major debottleneck project was completed in November 1980. The volume of petroleum products moved by the ARR from Anchorage to points east of Nenana as shown in the table below indicates that the ARR lost over 6,400 barrels per day (b/d) during the 1976-1982 period. This volume represents a revenue loss to the ARR of $7.8 million in 1982.

ALASKA RAILROAD PETROLEUM MOVEMENTS
(from Anchorage to points east of Nenana)

year	BPCD	+/-
1976	9,141	----
1977	9,170	+29
1978	4,506	-4,664
1979	3,177	-1,329
1980	3,399	+222
1981	2,592	-807
1982	2,682	+90

The majority of the ARR movements north from Anchorage are gasoline (mogas), aviation gasoline (avgas), and propane; refined petroleum products not produced by the NPR refinery and therefore must be obtained from Anchorage.

The ARR's confidentiality rules for a single shipper preclude disclosing the NPR volumes moved south to Anchorage; however, the Port of Anchorage recognizes that NPR moves a petroleum product to the West Coast. Also, it is known that the airlines "consortium" at the Anchorage airport which purchased the Chevron and Shell airport facilities purchases jet fuel from NPR at the Anchorage terminal site. Furthermore, during a given week, the NPR has operated two tank trains a week, plus up to twenty 20,000 gallon tank cars between North Pole and Anchorage to serve the Anchorage International Airport. Each tank train consists of eight 23,000 gallon tank cars. It is estimated that NPR supplied to the Anchorage International Airport about 2,600 BPCD of jet fuel in 198[illegible] and 2,300 BPCD in 1982. THE VOLUME OF PETROLEUM PRODUCT TRAFFIC ON THE ALASKA RAILROAD MOVING SOUTH TO ANCHORAGE IS ABOUT EQUAL TO THE VOLUME MOVING NORTH TO THE ALASKA INTERIOR.

The amount of petroleum products that were manufactured and sold in the Interior of Alaska (except for gasoline, AvGas, and propane) is reflected in the production level of NPR at approximately 13,200 b/d in 1982. If the NPR posted prices in Fairbanks were identical to the Anchorage postings, then the residents of Alaska's Interior would save over $15.7 million on their fuel costs. This assumption is reviewed

in more detail in Chapter IV.

H. THE MILITARY PIPELINES AND TERMINALS

The Defense Fuel Supply Center (DFSC) purchases petroleum products for the military operations in Alaska. The military operates various terminal facilities and pipelines in Alaska.

The major petroleum terminals are Whittier with 330 MB of storage, Anchorage with 358 MB, Haines with 390 MB, Fort Wainwright with 204 MB and Eielson AFB with 304 MB.

The Whittier terminal is located at the ice-free deep water port of Whittier on Prince William Sound. Petroleum products purchased for the military by DFSC on the West Coast for delivery to Railbelt region are delivered to this port terminal; the Whittier Military pipeline moves petroleum products (primarily JP-4) to the Anchorage port Military terminal; a distance of 61.7 miles. The eight-inch diameter line has a design rating of 24 MBPSD and cost $12.6 MM in 1967. At that time all of the military's Railbelt requirements were imported into Alaska, and an ice free port such as Whittier was desirable.

The Anchorage Military terminal serves Elmendorf AFB and Fort Richardson by feeder pipelines; the terminal also places petroleum products on ARR. The seventeen tanks at the military terminal connect with the various petroleum terminals at the Anchorge Port and can receive petroleum products from the Whittier pipeline. Shipments from NPR pass thru one of the petroleum terminals and then into the military terminal. Military shipments from the Nikiski refineries move by the Nikiski pipeline to the terminal.

The Eielson AFB and Fort Wainwright located in Alaska's Interior are connected directly to NPR by means of the old Haines Military products pipeline. This 27-mile section of the original eight-inch diameter 626-mile pipeline is still maintained and transports petroleum products from North Pole to the two bases. The design rating of this pipeline is 9,360 BPSD.

CHAPTER THREE

ALASKA PRODUCT DEMAND AND SUPPLY

A. ALASKA PRODUCT PURCHASE AND SUPPLY DATA

The State of Alaska consumption of petroleum products based upon State Department of Revenue (DR) data, exceeded 64 MBPCD in 1980, 66 MBPCD in 1981, and 76 MBPCD in 1982.

The data reported by refiners (NPR does not report) to the State Division of Energy and Power Development (DEPD) indicates direct sales by refiners of petroleum products to Alaskans at 67 MBPCD in 1980, 63 MBPCD in 1981, and 59 MBPCD in 1982.

Further, the State Department of Natural Resources (DNR) annually reports to the Legislature estimated petroleum product consumption in Alaska, and DEPD annually presents to the Legislature the State's energy plan which also projects and presents consumption estimates for the State.

Clearly, since all of the above do not agree, there is no one good source of petroleum product consumption. The sale of motor fuel petroleum products to final end user must be recorded and the amount of taxable or exempt volumes reported to DR. Table III-D-1 and Table III-D-2 summarize the reported volumes for taxed and exempt volumes by category, and reports end-use for the 1980-1982 period. Problems with this data, which is collected for only tax purposes, are the (a) confidential seal placed on it; (b) the very apparent lack of consistency in the DR report's classifications over the years; (c) no published information on who is reporting (when comparing current DR volumes with DEPD refiner volumes, the large increase in 1982 is most likely due to expanded reporting requirements than actual increase). Also, since the report addresses only motor fuel, some volumes, although exempt, are not reported: for example heating oil.

Furthermore, the regional breakdown is by the Alaska Judicial Districts. This breakdown was discontinued in June 1982, so that it is now not possible to identify petroleum product volumes for Southeast Alaska, the Yukon River Basin, North and Northwest Alaska, and South of the Alaska Range.

Tables III-D-3 and III-D-4 summarize the data by petroleum product type. The data indicates the following motor fuel use by Alaskans:

DR Motor Fuel Report Summary

Product	MBPC	
	1981	1982
Jet Fuel	26.1	29.1
Av-Gas	1.2	1.2
Gasoline	12.7	14.4
Diesel	26.1	31.6
Total	66.1	76.3

The large amount of diesel use reflects a number of industrial applications: electric generation, construction equipment, TAPS pump stations and both domestic and foreign fishing industry in Alaska waters.

The seasonality of Aviation Gasoline, and Motor Gasoline is reflected in the summer highs. The utilization of diesel, peaks both in the summer (construction activity) and during the winter when cold weather greatly increases heating oil consumption.

The DEPD data, which is refiner oriented, goes back to the days of Federal oil control and specifically mandated "buy-sell relationships", and "fuel set aside programs" of the U.S government, between those entities that refined petroleum products and those that purchased them. These (confidential) reports are required of all refiners by the U.S. Department Of Energy and a copy is sent to DEPD, the State agency responsible for the program administration. The reported data does not include NPR, nor does it include volumes of petroleum products purchased and sold by other than refiners, e.g. a wholesaler's volumes purchased in Anacortes Washington and brought into the State for sale. The data ,however, does include the volumes of petroleum products supplied by Texaco, Union, Chevron, Mobil, and

Tesoro.

The DEPD refiner data is confidential at the refiner level. Table III-E-1 and III-E-2 detail the information by month and year on a BPCD basis. The following summarizes that information.

DEPD REFINER SUPPLIED PETROLEUM PRODUCTS

Product	MBPCD	
	1981	1982est.
Propane	.3	.2
MoGas	12.3	12.9
#1 Oils	2.5	2.9
#2 Oils	13.8	14.4
AvGas	1.0	2.7
Jet A-1	19.3	18.2
Jet B; JP-4	1.6	1.5
#5;#6;Bunker	12.6	6.3
Total	63.4	59.2

The DEPD data, as reviewed, is not complete: many months lack refiner(s) inputs. NPR (at over 13 MBPCD of petroleum products) is not included, nor is ARCO's 14,100 BPCD refinery at the ANS and the TAPS pump stations' topping plants along the pipeline. These petroleum product volumes are included in the DR summaries. IF THE NPR VOLUMES ARE ADDED TO THE DEPD NUMBERS THE ANNUAL DEMAND FOR PETROLEUM PRODUCTS IN ALASKA WOULD BE 75.8 MBPCD IN 1981 AND 72.1 MBPCD IN 1982 AS SUPPLIED BY REFINERS.

The two data sets were analyzed in detail and when used in conjunction with other sources provided key details to develop the Railbelt scenario of demand and supply. Most data is of value when you know what it is telling you or not telling you; that requires knowledge of Alaska, refining, transportation, and the private and institutional framework of each particular piece of information.

B. Defense Supply Purchases

The Defense Fuel Supply Center (DFSC) in Arlington, Virginia purchases petroleum fuels for use by the military in Alaska. The requirements of the various petroleum products are defined in an annual solicitation which lists the points of delivery and the volume at each location. The wholesalers and refiners then submit bids on these lots. The DFSC selects the lowest price(s) offered. The volumes in Alaska are significant. The FY 1981 solicitation was for over 70 MM gallons of JP-4 to the Railbelt, 21 MM gallons of JP-5 to Kodiak and Adak, 9.8 MM gallons of arctic diesel fuel (DF-A), 0.5 MM gallons of Aviation Gasoline (AvGas) and 7.5 MM gallons of motor gasoline.

NPR in both 1981 and 1982, was awarded the Interior Alaska volumes and generally all of the Railbelts DF-A. The 45 MM gallons of JP-4 at Elmendorf AFB in 1981 was awarded in approximately thirds: Chevron, Tesoro, and one outside contract through Whittier. In FY 1982, NPR also replaced Tesoro as a supplier of JP-4 at Elmendorf AFB. The supply of these products does not follow the Federal government FY starting date of October 1, but rather from the contract award date. For example, the FY 1983 contract was awarded in December 1982, the FY 1982 contract was awarded in March 1982 and this required DFSC to "stretch" the FY 81 deliveries to the March 1982 date. In general the volume of products solicited by the military has slightly declined over the 1980-1982 period reflecting a constant budget and increased product prices.

C. COMMERCIAL JET FUEL SALES

Jet fuel in Alaska is big business. Commercial sales at the State's two largest airports, Anchorage and Fairbanks, will exceed 23,500 BPCD in calender year 1982. This volume, using Anchorage's posted terminal prices (which are lower than Fairbanks) will have a gross sale value in excess of $424 million. Jet fuel accounts for fully 60 per cent of an airlines operational costs.

Alaska has experienced a large growth in its two largest International airports (Anchorage and Fairbanks) and the jet fuel usage is shown in Table III-F-1. Since 1977 the jet fuel usage has increased by over 46 %, which is equivalent to an annual compounded growth rate of about 8 %. This growth has been shared by both airports, but not equally, as shown in the Table.

The dominant airport for jet fuel sales is Anchorage, at over 19,900 BPCD of Jet A-1 (1982). In 1978 its sales were 95 % of the Railbelt volume; however, Anchorage's position declined to 80 % in 1981 but has since risen to over 84 % in 1982. With the recent completion of the new International terminal at Anchorage, that airport's dramatic growth of domestic and international sales should continue.

Prior to 1978 the Fairbanks' airport serviced primarily domestic flights. In 1978 NPR began the sale of Jet A-1 fuel to domestic carriers based in Fairbanks, and to International cargo carriers traveling between the Orient and Europe. NPR was able to serve the International carriers because it offered a lower jet fuel price than Anchorage, coupled with a worldwide shortage of jet fuels. In addition Fairbanks claimed a faster airport turn around time, better weather during the winter, and a possible operational cost savings because of the shorter air routes between the Orient and Europe via Fairbanks compared to Anchorage. The availability of Jet-B (as a replacement for Jet A-1, a higher priced fuel) at Fairbanks at a low price was also an attraction for cargo carriers destined to foreign ports.

It is interesting to trace the events that have effected the change of market shares as outlined in the Table III-F-1. Fairbanks in 1979 did not have the airport accomodations to handle the foreign passenger traffic. The State in anticipation of serving foreign passenger carriers operating between the Orient and Europe upgraded the Fairbanks airport, but the anticipated passenger traffic did not occur. The reasons as to why the shift occurred from Anchorage to Fairbanks and then back from Fairbanks to Anchorage are discussed below.

As outlined on Table III-D-2, (summary of the DR Motor Fuels Reports), the Anchorage airport up until early 1982 received foreign produced jet fuel, listed as "Bonded Jet Fuel", a term from the oil control period. This product was supplied by Shell which, under the U.S. Department of Energy buyer-seller program, was bound to a supply commitment. The program mandated that in the case of an emergency or oil shortage, Shell (or Shell's contracted supplier) deliver supplies to the contracted buyer(s) that existed at the time the buy-sell program went into effect; in this case the air carriers at the Anchorage airport. With the decontrol of oil and the termination of all buy-sell relationships, Shell elected to not serve its Anchorage customers and this left a supply gap in the Railbelt region for jet fuel to the airlines.

To counteract this deficiency of jet fuel supplies to the Anchorage air carriers there was formed, in the summer of 1981, a "consortium" to purchase the required jet fuel at Anchorage. To minimize handling costs at Anchorage Port and Airport the "consortium" subsequently purchased Shell's pipeline from the Anchorage Port to the airport, Shell's terminal facilities at the Anchorage Port, and both Shell's and Chevron's product terminals at the airport. The cost of these acquisitions was reported at near $15MM.

The Anchorage "consortium" in 1982 purchased its jet fuel requirements from the Railbelt refiners (estimated at 15,870 BPCD), from West Coast refiners (estimated at 3,490 BPCD), and in December 1982 imported the annual equivalent of 540 BPCD of foreign derived Jet A-1. As discussed at the end of this Chapter, there does not exist sufficient Railbelt jet fuel production capacity to meet the large Railbelt jet fuel demand; imports are therefore necessary. The "consortium" is now in a very strong buyer position because there is only one buyer. This advantage is somewhat offset, however, because jet fuel demand in Alaska still exceeds Alaskan production so that the Alaska refineries are pricing their jet fuel to the airlines (consortium) on the price that the "consortium" is paying for their imported jet fuel landed into Alaska.

The above explanation does not explain the shifts in airport market shares between Anchorage and Fairbanks. The reasons for this market

shift can be found in the price of jet fuel sold at the airports involved. Table III-F-2 lists typical jet fuel terminal postings for Anchorage and Fairbanks for the period from January 1980 to the present. It is obvious that Fairbanks was an attractive airport in the first half of 1980 because of a lower price than Anchorage (maximum of 6.9 c/g lower). Furthermore the data indicates that in the fall of 1980, a major pricing policy change occured at NPR which has continued to the present day. This apparent pricing policy change eventualy negated any price attraction at the Fairbanks Airport, and in fact resulted in a higher price at Fairbanks than Anchorage (highest at 8 cents and currently 4.8 cents per gallon). THIS HIGHER PRICE, MORE THAN ANY OTHER REASON, IS THE CAUSE OF THE LOSS OF CARGO CARRIER BUSINESS TO THE ANCHORAGE AIRPORT IN 1982.

The fact that NPR IS SHIPPING JET FUEL TO ANCHORAGE AND ABSORBS THE ARR FREIGHT COST OF OVER SIX CENTS PER GALLON (at the largest volume tariff) would suggest that NPR COULD BE COMPETITIVE IN FAIRBANKS BY OFFERING A LOWER PRICE WHICH WOULD ATTRACT AIR CARRIERS. NPR is closer to the Fairbanks marketplace. The fact tht NPR is selling jet fuel in Anchorage at an obviously lower price than in Fairbanks and, in addition, paying the freight bill to achieve the lower net-back sale, is a puzzle.

NPR appears to have elected a pricing policy for jet fuel that associates a jet fuel price at or near parity with #1 heating oil rack price at NPR, because both products "come from the same kerosene storage tank". If this premise is accepted, then a drop in Fairbanks Jet A-1 price would also justify a drop in the price of heating oil, something which NPR appears reluctant to do. NPR seems willing to forgo attracting jet fuel sales/carriers to Fairbanks by lowering its jet fuel prices and is willing to absorb the ARR freight costs on the 2310 BPCD of jet fuel it sells to Anchorage.

Possibly this is why in December 1982 Japan Airlines moved the fueling of two 747 cargo flights, between Tokyo and New York City, from Fairbanks to Anchorage; this action diverted 990 BPCD of jet fuel sales to Anchorage from Fairbanks. Previously, in July 1982, Korean Airlines had returned to Anchorage from Fairbanks.

The indications are that the cost of jet fuel in the "Lower 48" is cheaper than the Anchorage CTW postings by 10 -19 cents per gallon. The airlines therefore will have an incentive to move, where possible, to the cheaper source of jet fuel since the cost of (jet) fuel is the major cost (60%) of an airlines operational expense.

A further development in the jet fuel demand for the Railbelt airports (Anchorage and Fairbanks) is the introduction of the fuel efficient aircraft (747SP) that can travel from Tokyo direct to Europe or New York City. Japan Airlines currently overflies Anchorage on European passenger flights, and plans to drop a DC-10 route between Tokyo and New York City in July 1983. This DC-10 route (two flights daily) currently refueling in Anchorage accounts for roughly 740 BPCD. As more efficient aircraft join the International carrier fleet, the demand and need for Anchorage and Fairbanks as a refueling point will tend to become less.

An interesting development is occurring in the supply of jet fuels to both Anchorage and Fairbanks with the entry of the "consortium" as a supplier to the airlines. One of the first benefits that the airlines received when the "consortium" started operations was to minimize the markup (difference between ex refinery and airport posting) on jet fuel sales. It is estimated that this markup was as high as 16-18 cents per gallon. The "consortium" has probably reduced this by 10 to 13 cents per gallon.

Another potential reduction that the "consortium" seems to be pursuing is a reduced price of jet fuel from the refineries in Alaska. The jet fuel sold in Alaska has a premium built into it which makes it higher priced than jet fuel supplies brought in from the "Lower 48". The Consortium, by importing foreign source cheap jet fuel, is upsetting the demand supply balance of the refineries and forcing them to down grade their jet fuel to kerosene (heating or diesel oils) which in turn, requires the refineries to reduce crude throughputs or export kerosene. This is painful to the refineries from a profitability standpoint, and the "consortium" by continuing to import foreign source cheap jet fuel will force the refineries to a price level that makes imported jet fuels marginal to the consortium.

D. RAILBELT DEMAND

The demand for petroleum products in the Railbelt was determined from a number of data sources, including but not limited to: the volumes and types of petroleum products moved thru the ports of Anchorage, Whittier, and Nikiski; the production of products at the Alaska refineries and the product/crude oil movements through the GVEA, Nikiski, and Whittier pipelines. Utilizing the above data and formulating an input/output model, the 1981 and 1982 Railbelt demand on a BPCD basis was determined as outlined below:

RAILBELT PRODUCT DEMAND

	MBPCD	
Product	1981	1982
MoGas	10.2	10.8
JP-4	4.6	4.6
JET B	1.7	.5
AvGas	.9	.7
Jet A-1	20.1	23.0
#1 HO/diesel/DFA	1.6	1.8
#2 HO/diesel	4.4	4.3
#4 FO	.6	.8
Asphalt	.6	.9
Total	44.0	46.5

The Railbelt volumes shown above reflect actual purchases and deliveries by refiners and wholesalers. Not included in the above figures are the TAPS turbine fuel manufactured and used exclusively by TAPS. Also year to year inventory changes would modify some of the above numbers in a minor way. For example, the changes in yearly inventory of the asphalt mix used in the manufacture of asphalt by Union at their topping plant at their Anchorage terminal is a clear indication of the types of problems encountered when interpreting data. In this example the numbers presented above do not reflect inventory carry-overs or drawdowns, yet in 1981 Union used 1980 asphalt in their plant, whereas in 1982 they imported asphalt mix and used it all in that year. The apparant "increase" in asphalt demand

therefore, as shown in the above table, is understated. This can be appreciated from a review and understanding of all of the facts.

Another example is Aviation Gasoline (AvGas) which apparantly declined a third in 1982. This is only partially correct, because in 1981 a large volume was imported carried over into 1982. However, the Railbelt in 1982 did experience a high decline in the demand for air freight transportation through Anchorage during the 1982 summer fishing season.

The Military JP-4 volumes were unchanged while motor gasoline saw an increase. The increase in #1 diesel is probably due to the diesel oil shipped by NPR to the ANS in 1982, however the demand for #2 heating oil and diesel would appear to be about equal for the two years. The use of #4 oil by the electric utility in Fairbanks is a function of coal as an alternative fuel for electric power.

E. ALASKA'S IN-STATE AND WEST COAST REFINING CAPACITY

Alaska has vast crude oil resources, and four companies own refineries in the State that utilize that crude and produce petroleum products for use in the regions that they serve. The table below summarizes the refineries by location and crude capacity.

Alaska In-State Refining Capacity

		Capacity	
Company	Location	BPCD	BPSD
ARCO	Prudhoe Bay	14,000	14,200
Chevron U.S.A.	Nikiski	22,000	na
MAPCO	North Pole	46,000	na
Tesoro	Nikiski	48,500	51,053
total		130,500	136,831

(Reference: "Oil and Gas Journal: 1982 Annual refining survey)

The next sections will discuss each Railbelt refiner. The ARCO refinery at Prudhoe Bay serves the operations at the North Slope and is a simple distillation operation manufacturing diesel fuel (1,890 BPCD). Our analysis did not address this refinery nor the simple topping plants located on the TAPS which provide diesel fuel (total of 5,930 BPCD) for the power turbines at the three pump stations. ONLY TWENTY STATES IN THE UNION HAVE MORE REFINING CAPACITY THAN ALASKA.

Alaska refiners operate "in the shadow" of the refining capacity on the West Coast. Historically, the refiners on the West Coast were the suppliers of petroleum products to Alaska. For example, in Southeast Alaska and the West Coast of Alaska these refineries still provide the bulk of the petroleum products. The Railbelt has become near self sufficient for petroleum products but, as previously discussed, some products are imported even into this region.

The West Coast refiners are important to Alaska petroleum product pricing because they are the "other" alternative as discussed in Chapter II. The table below summarizes the capacity on the West Coast

by refiners who operate in Alaska.

West Coast Refiner Serving Alaska Refining Capacity

State	Company	Location	Crude BPCD
California	Chevron	Bakersfield	26,000
	Chevron	El Segundo	405,000
	Chevron	Richmond	365,000
	Mobil	Torrance	123,500
	Texaco	Willmington	75,000
	Union	Los Angeles	108,000
	Union	Rodeo	111,000
	Total		1,213,500
Washington	Mobil	Ferndale	71,500
	Texaco	Anacortes	78,000
	Total		149,500
TOTAL			1,363,000

The total capacity in California is 2,487 MBPCD with forty refineries. The total capacity in Washington State is 389 MBPCD with seven refineries. With demand for petroleum products falling in California and Washington spare refining capacity exists. This capacity could be utilized to provide Alaskans petroleum products if they can be competitive, after paying for marine and handling in getting the product(s) to Anchorage which is the "gateway" to Alaska's largest marketplace, the Railbelt.

In the following discussions and analysis remember that the Alaska refiner/wholesalers who own and operate refineries on the West Coast have a refining capacity which exceeds by ten times the Alaska in-state refining capacity, and most own marine terminal facilities at the Port of Anchorage.

F. CHEVRON U.S.A. NIKISKI REFINERY

Chevron U.S.A. states that its initial sale of petroleum products in Alaska occured in 1889. They market products throughout the State and are the sole supplier to eighteen rural Alaska depots which, in turn, transship to other communities. Chevron also participated in the development of the Swanson River crude oil field (a Cook Inlet field) in the late fifties. In 1963 Chevron completed construction of a 22,000 BPCD refinery at Nikiski to process "sweet" Cook Inlet crudes from their Swanson River field (50 per cent interest), the Middle Ground Shoal (10 per cent), and their one-third interest in two of Shell's off-shore platforms.

The State of Alaska encouraged the construction of the Chevron Nikiski refinery through the Alaska Industrial Incentive Act (AS 43.25), which exempted the refinery from State income taxes for a period of ten years after the start of operations (AS.43.25.010.a) and exempted their property for a period of ten years from all city and borough property taxes (AS 43.25.010.b).

The Chevron U.S.A. corporation is one of the world's largest integrated petroleum and chemical corporations. In 1981 Chevron's share of the U.S. gasoline market was 5.2 per cent compared to Exxon's 6.8 per cent and Amoco's 7.3 per cent. The Chevron FY 1981 report stated that their profit in 1981 declined $19 million to $931 million, based on total sales of $17.883 billion. The Lundberg Newsletter indicated that Chevron's gasoline volumes in 1981 declined some 12 per cent from 1980 levels. Corporate operating statistics are summarized below.

Chevron U.S.A. Corporation FY Summary

	All Petroleum Activity			Total Corporation		
	$ MM					
	income	assets	sales	income	assets	sales
1980	931	9,260	17,883	2,401	22,162	41,553
1981	1,230	11,783	20,275	2,380	23,680	45,229

The Chevron nikiski refinery is twenty years old and continues to be part of the Chevron West Coast network of refineries with over 796,000

bpcd of refining capacity.

In 1963 Chevron at Nikiski invested more than $1 million in a vacuum distillation system to produce asphalt (shipped as an asphalt mixture) imported from Chevron's California refineries. In 1981 Chevron invested $150 thousand to modify the distillation still to process ANS crude oil. The assessed value of the plant by the Kenai Borough (see Table III-G-1) is currently 22.3 million dollars based on a replacement and depreciation methodology; the refinery entered the Kenai Borough tax role in 1974 at a value of $9.2 million. The refinery employs about twenty people.

In 1969 Chevron's Cook Inlet crude production totaled more than 76 MBPCD, which they ran in part in their Nikiski refinery and transported the remainder to their California refineries. In 1980 Chevron's production of Cook Inlet crude declined to 7 MBPCD (less than 10 per cent of the peak). In 1980 Chevron entered into a crude exchange agreement with Tesoro to supply them Chevron's Cook Inlet production. Chevron then modified its distillation facility to process ANS crude oil. During the summer season Chevron does not process crude oil but rather charges an asphalt mixture which, in a separation process, yields kerosene and about 1900 BPSD of asphalt, which is trucked to Anchorage and other locations in Alaska.

The Chevron refinery can be best characterized as a simple distillation unit and, in concept, is very similar to NPR with the exception of vacuum asphalt separation. Chevron currently processes ANS crude oil at a maximum throughput under 19 MBPSD. The maximum production of refined products that they can manufacture from ANS Crude oil is:

Straight Gasoline	4 per cent
JP-4	6 per cent
Jet A-1	13 per cent
#1/#2 Diesel	21 per cent
Residual	56 per cent

Chevron exports the straight run gasoline (light naphtha) to their El Segundo refinery (near Los Angeles) for processing into other petroleum products. The residual is sent to Chevron's Richmond

refinery (near San Francisco) for cracking into lighter petroleum products. A large percentage of the Nikiski Chevron production is moved from Nikiski to the various Alaska Gulf terminals, including Valdez, Kodiak, Dutch Harbor and Ketchikan. The kerosene fraction (15 to 18 per cent) from the distillation of ANS crude oil can meet both the Jet A-1 and #1 heating oil/diesel specifications. This permits flexibility in marketing kerosene derived refined products. The Chevron facility, when producing asphalt, imports a mixture of asphalt and kerosene which are both easily marketed in Alaska during the summer construction season.

Chevron is one of the major importers of gasoline into the State. The Lundberg survey states that Chevron is responsible for 40 per cent of motor gasoline retail service station sales. Chevron primarily imports Chevron's premium unleaded gasoline and receives other gasolines from Tesoro.

Chevron in its request to DNR for 45,000 BPCD of State Royalty oil, proposed that it would expend nearly $10 million at Nikiski to expand the refinery's capacity to 25,000 BPCD of ANS, therby increasing the production of refined petroleum products. The other 20,000 BPCD would offset the amount of petroleum products they import into Alaska from its California refineries. The actual amount of ANS processed at the Nikiski plant would vary depending upon the demand for asphalt.

Chevron, in a letter dated March 23,1981 to the DNR, tied the sale of Royalty oil to the price Alaskans pay for petroleum products; specifically it stated"

"..increased refinery operation by Chevron will insure a competitive refining/marketing climate in Alaska, and tend to hold down the cost of petroleum products to end-use consumers."

"Chevron has an extablished in-state refining and marketing network which can be expanded to insure a competitive market, and thereby maintain lower cost of products for Alaskan consumers."

"..it is in the States' best interest on a long-term basis to use the Royalty oil to:

(1) Further the economic development of the State and,

(2) Hold down the cost of petroleum products to the citizens of the State."

"Chevron is proposing to pay the State of Alaska 55 cents per barrel above the in-value price which the State has contracted to sell under contracts to..Alpetco..NPR...This Additional 55 cents per barrel will increase States' revenue by $6 million per year.."

G. MID AMERICA PIPELINE COMPANY'S NORTH POLE REFINERY

Mid America Pipeline Company (MAPCO), through a corporate takeover, acquired the assets of Earth Resources Company (ERC) in January 1981. Among the assets acquired was the 46,500 BPSD North Pole Refinery (NPR) located at North Pole, Alaska, approximately 13 miles southeast of Fairbanks. MAPCO is an integrated energy company involved primarily in the domestic exploration and development of oil and gas, pipeline operations, coal and mineral mining, and refining and marketing of petroleum products. In FY 1981 ending December 31,1981, MAPCO's total sales were approximately 2.2 Billion (MMM) dollars on total assets of $1.6 MMM; the total operating profit (before tax) was $134 million (MM).

MAPCO through the ERC acquisition also operates the 50,000 BPSD Delta refinery at Memphis, Tennessee. The two refineries' total sales were $844MM on $266MM assets, and yielded an operating profit of $37MM. This information was obtained from Mapco's latest annual report and indicates that the Memphis refinery operated at a loss. This is not the exception on profitability of refiners in the Lower 48, since most operated in the red in 1981.

MAPCO's refining profits constituted 28 per cent of the corporate profit (all from NPR) in FY 1981, compared to only 18 per cent share in the previous year. The two refineries averaged 80,776 BPCD in FY 1981, with NPR operating at approximately 95 % capacity.

NPR obtains its crude oil exclusively from the Alaska North Slope (ANS) by way of the Trans Alaska Pipeline System (TAPS) and the Golden Valley Electric Association's (GVEA) 2.4 mile six-inch and eight-inch pipelines. NPR returns approximately two-thirds of the crude (the

heavier portion of the crude which NPR is unable to market), to the TAPS by way of one of the two CVEA connecting pipelines. This, in effect, allows NPR to convert the residual portion of its processed feed to the refinery into a crude oil equivalent after paying a fifteen cents per degree gravity quality correction; this amounts to about $1.15 PB of material returned to TAPS. The quality of the ANS that the refinery receives is approximately 26.8 degree API; the return oil is approximately 19.4 degree API.

The construction of NPR was completed in August of 1977 to coincide with the start-up of TAPS. NPR was designed to run ANS crude oil at a rate of 25,000 BPSD over the life (25 years) of the plant. The refinery is a simple distillation unit manufacturing kerosene, light atmospheric gas oil (LAGO), heavy atmospheric gas oil (HAGO), straight run (SR) fractions (both heavy and light) and residual bottoms. Finished products are "blends" of the fractions obtained from the crude unit.

Special products, such as diesel fuel arctic (DF-A), are obtained by slightly varying the distillation tower operations; this is done on an exception basis to fill demand requirements.

When it initially started, the refinery made JP-4 (a mixture of SR and kerosene) , heating oils #1 and #2 and an electric turbine fuel designated #4 oil. In October 1978, the refinery also began the sale of Jet A-1 which is a kerosene based jet fuel (Jet B and JP-4 are naphtha based internal combustion aircraft fuels).

Considering the latest expansion at NPR to 46,500 BPSD, the maximum production of refined products would be:

Refined Products	BPSD
JP-4,JET-B	3,720
#1 HO/dsl,Jet A-1	8,370
#2 HO/dsl	2,420
#4 turbine	2,530

NPR was built without any of the tax incentives which were provided to Chevron and Tesoro by the State of Alaska. The cost of the NPR

refinery was calculated at $31 MM in 1977 by the Fairbanks North Star Borough, for tax assessment purposes. In 1980 NPR initiated a debottleneck project which increased the maximum throughput to 46,500 BPSD, and the current assessed value of the refinery is $40.1 MM (Table III-G-1).

The 2.4 mile GVEA pipeline and the 50,000 BPSD metering station connecting the GVEA pipeline with TAPS cost an estimated $4.4MM. The GVEA pipeline is a common carrier and regulated by the APUC which set the initial GVEA tariff at 8.6 cents per barrel of ANS crude received from TAPS. The return oil is reinjected into the TAPS downstream of the TAPS inlet to GVEA at no tariff cost.

NPR relies exclusively upon ANS for its crude charge since its purchase options are limited to the ANS producers, including the State Royalty oil. NPR has purchased ANS crude over its operating history from Exxon, Sohio, Arco, Placid-Hunt, and the State of Alaska. The crude arrangements allow for the return of the ANS residual portion (as much as sixty-five per cent) back to TAPS, except for the residual portion from the State Royalty oil, it is repurchased by the producers. The reduced crude from the Royalty crude must be accomodated by MAPCO. In the FY 1981 report MAPCO states:

> "For 1982, all return oil volume has been pre-sold under sales contracts or will be delivered under exchange agreements which is expected to avoid the level of losses realized on sales of this crude oil in 1981."

It is estimated that MAPCO had substantial losses on its crude oil sales in 1981 and by the admission of one of its senior executives in Alaska, this loss was recovered by higher margins on its NPR refined product sales.

The State Royalty Contract which was signed March 17,1978 allows for the purchase of 15 per cent of the State's ANS Royalty oil or, if available, a maximum of 35,000 BPD of Royalty oil. NPR is not required to provide the State the option to take the return oil. The State receives a price at the ANS that is calculated by a formula called "Exhibit B" in the original contract, and this price calculates to be slightly higher than the equivalent in-value price, see Table II-A-4.

H. TESORO PETROLEUM CORPORATION'S NIKISKI REFINERY

Tesoro Petroleum Corporation headquartered in San Antonio, Texas owns and operates the Tesoro refinery at Nikiski, and markets gasoline and diesel in Alaska under the Tesoro logo; in addition it is the major supplier of jet fuels to the Alaska market. Tesoro is a fully integrated petroleum company with activities encompasing exploration, production, refining, and marketing. The company is also engaged in coal development and in oil field services.

A review of the 1980/1981 profit-sales figures is shown below:

Tesoro Petroleum Corporation's FY Revenues and Profits

$ MM

	marketing and refining div.			total corportation		
	profits	assets	sales	profits	assets	sales
1980	95	218	2,314	182	708	3,528
1981	65	258	1,745	87	760	3,034

Note that the refining and marketing profit was 75 per cent of the total company profit in 1981 and resulted from 33 per cent of the company's assets! In 1980 the refining and marketing division profit was only 53 per cent of the total corporate profits.

Tesoro's total companywide refined products marketing activity resulted in sales of 132.7 MBPD in FY 1981 and sales of 137.9 MBPD in FY 1980:

MBPD Refined Product Sales

	1981	1980
Mogas	34.6	47.7
Jet Fuel	11.4	12.9
Distillates	59.1	33.4
Fuel Oil	23.8	43.8

Tesoro stated in their FY 1981 report the following:

> "It's noteworthy that Tesoro's refining and marketing results cut performed many domestic refiners during the past fiscal year. This performance was due in large measure to the location of the companies two refineries with respect to crude oil sources and refined products markets. By maintaining refinery configurations and operating levels matched to refined-product demands in the immediate market areas, Tesoro has been able to establish competitive positions that allow it to market effectively, even during depressed periods."

What should be emphasized is that Tesoro's high profitability is due to a large extent to its unique geographical location with regards to crude supply and market availability.

Tesoro owns and operates two refineries. The Carrizo Springs, Texas refinery with a capacity of 26,100 BPD operated during FY 1981 at only 6,893 BPD. The Nikiski refinery FY 1981 capacity was rated at 48,500 BPD with a throughput of 42,636 BPD. In effect the Nikiski refinery accounted for over 86 per cent of Tesoro's refinery production.

The Nikiski refinery is capable of receiving crude oil from tanker and/or barges at the Port of Nikiski on the west side of the Kenai Peninsula; it also can receive Cook Inlet crude oil from the Kenai Pipeline Company.

Refined petroleum products are available at the refinery rack, the Nikiski rig tenders dock, and at the Anchorage Port terminal(s) which receive products shipped through Tesoro's Nikiski Pipeline. The location of the Tesoro refinery was determined because of the closeness of (a) the Cook Inlet Oil fields which minimized crude transportation costs and (b) Railbelt region which contains the majority of the State's refined product market.

The Nikiski refinery was constructed in 1969 with an initial capacity of 17,500 BPSD. In 1975 a 6,000 BPSD naphtha reformer was added for the production of gasoline direct from crude oil. The refinery's thru-put was increased to 48,500 BPSD in 1978. In 1981 the addition of a 7,500 BPSD heavy gasoil hydrocracker was added, and the naphtha reforming capacity increased to 12,000 BPSD. The maximum operating

capacity of the refinery is 51,053 BPSD and 48,500 BPCD, as reported by the "Oil and Gas Journal: 1982 Annual Refining Summary."

The Kenai Borough's assessed value (see Table III-G-1) of the Tesoro refinery in 1982 was $101.7 MM, reflecting the expansions of the refinery over its thirteen years of operation; normal project economics usually project a fifteen year life of a refinery. The 1981 expansion cost slightly under $60MM. The refinery employs eighty people out of Tesoro's total employment in Alaska of 150 employees.

Based on data presented by Tesoro a typical product slate at a 48,500 BPSD thru-put yields following refined products:

Typical Tesoro Product Slate

	BPCD
Propane	190
Mogas;JetB/JP-4	13,350
JetA-1	12,200
#2Diesel,#2HO	4,200
Residual	16,500

While the Tesoro refinery is capable of producing the above product volumes, the actual volumes of refined products produced will vary with the amount of and the quality of crude charged to the refinery. In addition, because of the various types of processing units at the Tesoro refinery, this refinery has more flexibility in varying its yield pattern than that available at the simpler Chevron Nikiski and North Pole refineries whose main control of product volumes is by crude volume and selective cut-points variation on the distillation column. Tesoro, by changing the feed quantities to the reformer and/or hydrocracker, may vary the amount and type of products manufactured and still maintain product specifications. This flexibility is important, since it allows a refiner to pursue the most attractive priced products such as mogas and Jet A-1.

Tesoro markets only a portion of its products directly to the Alaska consumer; primarily through its 75 Alaskan retail outlets. Tesoro enters into extensive product exchange agreements with the major Alaskan wholesalers and distributors for a large proportion of its production. These exchange agreements are apparantly a big reason for

Tesoro's Alaska success. Texaco, Union, and Chevron accept petroleum products from Tesoro in Alaska which are then marketed under the trademark of Texaco, Union or Chevron. These companies either purchase or exchange (directly or indirectly) Tesoro Nikiski refinery products in Alaska for crude or refined products in the lower 48 states for Tesoro to market. For example in FY 1981, Tesoro's marketing division had over 81 service stations in California averaging 119 BPCD per station for a total of 9640 BPCD of gasoline and diesel; Tesoro has no refining capacity in California, but because of its Alaskan product exchanges with Union, Texaco, and Chevron it was able to obtain supplies in that market.

About three quarters of the Tesoro products sold in Alaska are moved into the Railbelt region and total approximately 26,260 BPCD of products in 1982 (see Table III-H-2). Tesoro's refinery also supplies about 3,440 BPCD to other Alaska communities such as Dutch Harbor, Adak, Valdez, Kodiak, and Ketchikan. In most of these communities Tesoro refinery products are marketed by others such as Texaco, Union and Chevron. These products are shipped by barge or tanker from Nikiski.

Tesoro's current residual product is equivalent to a low sulfur #6 fuel oil which is sold to large marine craft, such as the Alaska foreign fishing fleet and to utilities for power generation. The demand in Alaska for #6 fuel oil is limited and Tesoro's residual oil is purchased primarily by San Diego Gas and Electric Company because of its low sulfur content. Tesoro pays the shipping charges (probably a cheaper backhaul rate) from Nikiski to California and attempts to maximize the use of "sweet crudes" in its refinery crude oil feed to ensure a low sulfur residual fuel oil. The Tesoro FY 1981 report stated that the amount of residual oil manufactured at the Nikiski refinery was about 30 per cent of the product yield; the indication is that this residual yield can only be achieved with little (less than 15 per cent) ANS crude oil in the refinery feedstock. If a "sour crude" (high sulfur content) was charged to the Nikiski refinery the fuel oil produced would contain a higher sulfur level and the price it now commands would have to be lowered. (Table V-Q-1a/b summarizes heavy fuel oil prices in the Lower 48 less transportation from Nikiski: namely, Bunker-C, and #6 Fuel Oil prices for both 0.3 per

cent sulfur content and 1.0+ per cent sulfur content.)

The Tesoro Nikiski refinery was originally designed to operate on "sweet" crudes from Cook Inlet. These crudes are high gravity crudes which average 35.5 degree API (see Table II-A-1), are low in sulfur, and produce high proportions of valuable light products --- they are valuable as refiner crude feedstocks. A refiner is willing to pay a higher cost for these lighter crude oils than he would for a heavier gravity crude oil, such as ANS of 26.8 degree API. Kerosene, for example, has a gravity of 39 degree API and light atomspheric gas oil (LAGO) about 30.5 degree API. Consequently, the higher the gravity of the crude feedstock the greater the amount of the lighter, high valued, products made This eventually means less barrels of crude must be charged as refinery crude feedstock to meet the desired demands for Alaska: mogas, Jet A-1 (kerosene) and diesel oils. The Cook Inlet Royalty oil volumes taken, and average field price paid by Tesoro, are summarized in Table II-A-2.

A typical crude feedstock composition to the Nikiski refinery is shown below:

Typical Tesoro Crude Slate Composition

	BPCD	
Crude Type	1981	1982
ANS	4,820	5,400
Tesoro's Indonesian	2,800	2,550
Cook Inlet Royalty	9,730	8,460
Cook Inlet Purchase	22,830	28,770
total	40,180	45,200

Tesoro has indicated that it can not accomodate more than 15% ANS crude in its crude feedstock mix in order to maintain its sale of low sulfur heavy fuel oil to San Diego Gas and Electric.

Tesoro purchases Indonesian crude from its own production from the Sanga Sanga Field in Kalimantan, the Pamusian Field on Tarakan Island, and the Samboja Field. The official price for these crudes was $31.30 in 1980 and $34.80 thereafter. The Tesoro FY 1981 report stated that its Indonesian sales resulted in a $31 MM operating profit with a

profit/assets ratio of 208%. The Indonesian crudes are of high gravity, "sweet" and similar in quality to Cook Inlet crudes.

The west side Cook Inlet production is "gathered" at the Drift River terminal by Cook Inlet Pipeline Company, and that amount purchased by Tesoro is barged or shipped by tanker to the Nikiski dock (usually adjunct to a crude oil tanker movement from Drift River terminal to the West Coast), and then delivered to the refinery by pipeline. The 1982 marine cost for this tanker shipment of west side Cook Inlet crude was about $.24 per barrel (see Table II-B-1). Approximately 85% of the Cook Inlet production is gathered on the West side of the Inlet.

The East side Cook Inlet production sold to Tesoro is delivered directly to the refinery by the Kenai Pipeline Company. Tesoro owns no Cook Inlet production and must exchange or outright purchase the Cook Inlet crude(s) from the producers namely: Union, Arco, Phillips, Chevron, Marathon, Amoco, Mobil, Shell or Getty.

Tesoro has two State Royalty crude oil contracts approved by the legislature. The Cook Inlet Contract sells all of the State's Cook Inlet Royalty share, 12.5% of total production, to Tesoro. The original contract was dated January 31,1969 --- the year the refinery was completed --- and this contract was extended March 8,1977 and on February 24, 1978. The price is exactly that which the State would have received if it had taken the oil "in-value" as opposed to "in-kind". The Cook Inlet Royalty volumes are summarized in Table II-A-2.

The Cook Inlet field production is declining, and its current production level is about 66,200 BPCD; the estimated production is 52,600 in 1983, 41,900 in 1984, and 33,200 in 1985. These declining production levels present a supply problem to Tesoro beyond 1984, since they prefer sweet high gravity crudes. Tesoro is, therefore, evaluating some of the following alternatives:

(1), to modify their existing plant to handle the "sour" ANS crude oil; this will require the removal of the sulfur in the residual fuel oil.

(2), forgo any plant modification and process ANS crude but

sell the high sulfur residual fuel oil at lower price than what is currently obtained.

(3), import more low sulfur, high gravity foreign crudes. In todays marketplace such crudes are readily available at an attractive price.

The second crude oil contract that Tesoro has is the Alaska North Slope State Royalty Contract dated February 26,1982; it runs for twelve years and became effective January 1,1983. It provides Tesoro with 24.5% of the States ANS Royalty crude oil up to 46,000 BPCD, less the Cook Inlet Royalty Crude oil anticipated to be received under the Cook Inlet contract during the month of July of any given year. A penalty of 1.25% of the Royalty price per barrel is assessed by the State if Tesoro underlifts or does not take the ANS crude.

The maximum amount of ANS crude that the Tesoro refinery configuration is capable of handling, while still meeting the sulfur restrictions on its residual fuel oil sold in California, is approximately 15% (about 7,000 BPD) when operating with Cook Inlet and Indonesian crudes. The State contract allows Tesoro to trade/exchange the Royalty oil it purchases to meet the needs of the Nikiski refinery. If the refinery is not modified, Tesoro will have to enter into exchange agreements for foreign crude, or sell low valued high sulfur fuel oil. In a departure from the North Pole ANS Royalty crude contract, the State has a "call" on any residual fuel oil(s) sold by Tesoro, as well as a "claim" on any future Nikiski coke production.

The price paid by Tesoro for the Royalty ANS crude oil it receives is the "in-value" price that the State would have received, less the field gathering and transportation costs which Tesoro pays to the producers. The price of ANS Royalty oil under the different price formulas is given in Table II-A-4. The price Tesoro pays for the Royalty oil is less than NPR pays under the NPR-State contract's "Exhibit B" formula. The difference is currently 33 cents PB, and is at the same pickup point as the NPR pickup point, namely Pump Station #1 of TAPS. Tesoro, as well as Chevron, however, must transport the ANS crude through the length of the TAPS paying the APUC intra state tariff --- equal to the interim $5.84 current inter-state FERC rate (see Table II-A-3), and then move the ANS crude from Valdez to Nikiski

which costs at least $.41 per barrel (see Table II-B-1).

I. RAILBELT PRODUCT DEMAND SUPPLY BALANCE

Based on the information gathered and described above, an approximate detailed product balance for the Railbelt region was constructed for 1981 and 1982. The purpose of the material balance is to develop an overall picture of imports into the Railbelt and the levels of product manufactured by the three refineries. The intent here is to define in a general sense what is "going on" in the Railbelt. Since access to confidential refinery and importer files was denied an "exact" model is not possible. The level of detail developed here, however, is sufficient for the purpose of this pricing study.

The two product supply/demand balances are given in Table III-H-1 and III-H-2 for 1981 and 1982, respectively. Knowledge of the volumes of jet fuel consumed in the Railbelt, the product volumes moving across the Anchorage and Nikiski docks, the volumes moved on the ARR, and through the GVEA, Nikiski and Whittier pipelines, along with the knowledge of what the refineries produce, allows the construction of an input/output model around each region and refinery. This computerized model provided the basis for the Railbelt product supply/demand balance.

What each refiner's product production was came from an assessment of the average crude mix they were running over a period (year) and the petroleum products that could be manufactured from that(those) crude(s). The fact that Chevron and NPR utilize only ANS crude oil defines, within a small error range, the amount of petroleum products that they are manufacturing with their simple distillation processes. Tesoro is more sophisticated since they can vary the quantity of their manufactured petroleum products. For example, JP-4 and gasoline each require naphtha stocks which are available from simple distillation, from a hydrocracker, or from a reformer which may accept feedstock from the distillation unit or hydrocracker. Consequently, if there is a drop in JP-4 demand, Tesoro can reduce crude throughput or make more motor gasoline.

The Chevron numbers (because of [illegible] batch mode of operating) do not reflect on an annual average ba[illegible]D) the actual stream day thru-puts. For example the cr[illegible]es were 12,300 BPCD in 1981 and 11,800 BPCD in 1982, and are equivalent to approximately an 18,000 BPSD thru-put when running ANS crude. The production figures, also, include the manufacture of asphalt and kerosene as a by-product during the summer months.

It was difficult to assess the extent to which Tesoro or Chevron was the party exporting the petroleum products through the Nikiski dock to other Alaska locations, or the extent to which each's volumes were the ones shipped through the Nikiski products pipeline. Based on discussions, an allocation was made between the two refineries, however, the allocation does not change the volumes nor volume by product though the Nikiski pipeline nor Nikiski port.

Finally, the definition of certain refined products is flexible. The Alaska refiners' kerosene derived products are, in many instances, identical products, but are sold under different labels. It is virtually impossible, without access to shipping data, to know whether the estimated 1340 BPCD of #1 oil out of Nikiski bound for other Alaska ports is Jet A-1, #1 Diesel, #1 Heating Oil, or DF-A. Again an arbitrary allocation was made based on discussion(s) which indicate these volumes, to be Jet A-1.

The table below (taken from Table III-H-1 and III-H-2) outlines the dramatic decrease on the imports of petroleum products into the Railbelt at the Anchorage Port. The reason is the expanded production at Tesoro and NPR, coupled with a decline in AvGas demand. The JP-4 that is imported (DFSC purchase) moves primarily through Whittier, not the Port of Anchorage (an exception was 1981 when the equivalent of 330 BPCD was imported at Anchorage).

RAILBELT IMPORT SUMMARY: Anchorage and Whittier Ports

	BPCD		
Product	1981	1982	+/-
Mogas	820	620	- 200
JP-4	1,600	630	- 970
Av-Gas	940	710	- 230
Jet A-1	3,880	4,030	+ 150
#2 Oil	1,170	140	-1,030
Asphalt	0	120	+ 120
total	8,410	6,250	-2,160

The decrease in mogas imports resulted from Tesoro's increased production and sale of this petroleum product in the Railbelt. Most of the imported mogas is Chevron's premium unleaded; Union also imports some regular and unleaded volumes. Most of the premium leaded, regular unleaded and leaded used in the Railbelt originates at the Tesoro refinery. TESORO MANUFACTURES OVER 94 PER CENT OF THE GASOLINE CONSUMED IN THE RAILBELT.

The decrease in the imports of #2 oils was due to the increased capacity at both Tesoro and NPR. The AvGas decrease was due to a decline in the demand for AvGas in the Railbelt region (probably due to the declining activity of fish processers at Anchorage) and the fact that there was an inventory spill over from 1981 into 1982. The increase in asphalt mix imports in 1982 is a result of large inventories present during the 1981 construction season, which required no asphalt imports that year.

The increase in Jet A-1 imports of 150 BPCD masks the increased production by Tesoro (2,870 BPCD) and NPR (260 BPCD) and the fact that demand at the two airports increased over 1890 BPCD. Specifically there was a decline in Jet B demand at the Fairbanks airport of 1.1 MBPCD (mostly foreign cargo carriers) and the transfer of 600 BPCD of Jet A-1 to Anchorage. Also NPR shipments to Anchorage of Jet A-1 decreased an estimated 300 BPCD, but Jet A-1 sales at the Fairbanks airport increased by 560 BPCD whereas Jet B sales decreased an estimated.

The total production of the three refineries is summarized below:

TOTAL PRODUCTION OF RAILBELT REFINERIES

	MBPCD					
Product	Chevron		Tesoro		NPR	
	1981	1982	1981	1982	1981	1982
Mogas			10.5	11.5		
Jet B					1.6	.6
JP-4	.9	.8	.6	1.0	1.5	2.1
Jet A-1	2.3	2.3	9.8	12.6	5.1	5.4
#1 Oil					1.6	1.8
#2 Oil	.7	.7	3.5	3.9	2.0	2.6
Turbine					.6	.8
Asphalt	.6	.7				
TOTAL	4.5	4.5	24.4	29.0	12.4	13.3
crude	12.3	11.8	40.2	45.2	41.3	43.0

The above information presents a good profile of what petroleum products each refinery is providing the Railbelt and other Alaska communities. Not included are marine fuel oil sales in the Gulf of Alaska.

Chevron in 1982 manufactured 260,000 barrels of asphalt, a 30,000 barrel increase over 1981. The amount of kerosene (40 per cent) used to make the asphalt mixture (meet viscosity/pour limitations for transport to Alaska) accounts for the total quantity of products manufactured remaining about constant while crude charge declined for Chevron's refinery.

Obviously, Tesoro with the ability to manufacture 60+ per cent of its crude charge into products is the most important refiner in supplying jet fuel and motor gasoline. Tesoro can supply all of the Railbelts' regular gasoline demand (leaded and unleaded) which, from the data, Tesoro apparantly did to a large extent in the two study years.

The most significant deficiency in Railbelt petroleum product manufacturing capacity is Jet A-1. The demand for jet fuel at the

airports increased overall with Anchorage increasing faster than Fairbanks.

The import of JP-4 appears to be a policy decision on the part of the DFSC to keep the Whittier pipeline operational, since the military consistently brings JP-4 into the region even when there is an excess capability in the three refineries; for example Tesoro was not awarded a JP-4 contract in FY 1983.

The operation of the Chevron Nikiski refinery is done in conjunction with the other Chevron refineries in their system, so that exchange of crude or refined products (e.g. residual, SR, and asphalt mix) are closely coordinated.

Tesoro's crude supply mix is dictated in large part to maintaining the low sulfur #6 fuel oil that they now produce as their residual material. They are also evaluating changes in crude mix (crude flexibility) against capital investments, while minimizing sulfur level on their #6 fuel oil.

The next chapter, Chapter IV, will discuss prices in Alaska and compare these with outside postings and retail prices. Chapter V will analyze the operation of the refineries in Alaska using the prices developed in Chapter IV and thru-puts discussed above.

CHAPTER FOUR

ALASKA PRODUCT PRICING

The pricing of petroleum products in Alaska has followed the traditional historical pattern of other areas, and is of highest concern to Alaskans because of the magnitude of the fuel and gasoline cost increases that have occured over the last three years in Alaska. There have been significant decreases in crude oil pricing and petroleum product prices in the Lower 48/worldwide. These decreases have been identified in the local press, and Alaskans have expressed concern and questioned the prices they are paying for refined products purchased locally, compared to "outside" prices.

A. BRIEF GENERAL HISTORY OF PETROLEUM PRODUCT PRICING

Up to about the mid sixties the petroleum products used in Alaska were "imported". A base price on the West Coast determined by a refiners rack price, plus marine transportation and handling to bring the product to Alaska, determined the local market price; the Alaska price fluctuated with the base price at the refiners rack (e.g. California or Washington State). Many of the integrated refiners operated in Alaska during this period; namely, Mobil, Shell, Chevron, Texaco, and Union. The local prices basically reflected the competition on the West Coast amongst the refiners.

In the middle fifties commercial quantities of crude oil were discovered on the Kenai Peninsula and later at the Alaska North Slope. A refiner(s) could recognize the cost advantages of placing a refinery at or near the crude source to take advantage of the lower crude transportation costs to his refining site; also transportation costs would be saved by supplying the local markets from the locally situated refinery. The refiner also recognized that his small refinery unit (designed to meet his

demands) would be unable to supply his competitors supplies who would have to continue importing products at the old imported costs. These costs incured by his competitors, would dictate a minimum market price for the locally consumed products. In this situation the local refiner(s) has no incentive to reduce prices below the competitor's cost levels, since the local refiner can sell all of his output at this price; in effect the local refiner becomes a price follower. He thereby enjoys a larger profit than his competitor when selling at the same prices, because his costs are less than his competitors. The local refiner is limited on the price he can charge because if his price is higher than an import parity (West Coast plus transportation cost), a West Coast refinery could underbid the local party.

The "outside" refiner recognizes the strengths of the "local" refiner, namely, his "high markup" which the local refiner could lower (although taking smaller profits) to make his petroleum products more attractive. Consequently, a careful and dynamic price structure (balance) is always in effect.

At the time that the region's refining capacity for a given petroleum product equals or exceeds the demand, then the local refiner(s) becomes the price leader(s); an "outside" refiner can not economically match the geographic advantage that the local refiner(s) possesses.

In this latter development, the local refiners' compete amongst themselves for the available market except in the monopoly case where only one refiner makes a sufficient petroleum product volume to meet or exceed local demand. In a free market sitation, the existing local refiners being accustomed to a "large" margin, reluctantly drop their price(s) and thereby reduce the return on their local investment; less margin leads to less profit. The local refiners cost advantage over "outside" product imports is narrowed. Furthermore, when the "outside" refinery has surplus product, he is prepared to take a less than usual refinery netback at his refinery, and would be willing to sell his product into the local market at less than import

parity. Unless the local refinery meets this new price level he will lose market volume; which he is reluctant t do since this volume is profitable. To meet the competition, the local refinery will reduce his prices.

What occurs above between the local refinery and the "outside" refinery also can and does occur among local refinery(s). When this happens prices should fall and a competitive price at a competitive rate of return be obtained for the refinery.

B. ALASKA'S PETROLEUM PRODUCT PRICES

The purpose of this chapter is to analyze Alaska's petroleum product prices. The final price paid by Alaskans is traced from crude oil, through the refiner, through the wholesaler (if different from the refiner), and then the local distributor. A detailed look at heating oil and gasoline prices in the Alaska communities of Fairbanks, Anchorage, and Ketchikan is made. The prices in these communities are then further compared with prices offered at the retail level and posted rack level in Seattle, Los Angeles, and San Francisco. From this presentation the reader will have a quantitative analysis of product pricing in Alaska. The presentation will allow Alaskans to appreciate whether the petroleum product prices they pay are reasonable, relative to what "others" in the U.S.A. are paying. The Chapter first reviews heating oil and then gasoline prices over the 1980-1982 period.

C. HEATING OIL PRICING IN ALASKA

The different regions of Alaska utilize different heating oils. Fairbanks, because of the extreme cold winter weather, utilizes #1 heating oil with a -55 degree Fahrenheit minimum pour point for above ground storage and utilize #2 heating oil for buried tanks -15 degree Fahrenheit pour point in winter and 0 degree Fahrenheit pour point in summer. The #2 oil heating is sold primarily in South Central and Southeast Alaska. For comparison

only #2 oil data is available in the trade journals for the West Coast.

Each month the Fairbanks North Star Borough Community Research Center tabulates the average prices of #1 and #2 heating oil at the distributor retail level for Fairbanks and Anchorage. A summary of #1 and #2 retail data, wholesaler Consumer Tank Wagon (CTW), and NPR rack prices is presented in Tables IV-I-1a thru IV-I-1b together with their respective markups for the study period, January 1980 to December 1982.

FAIRBANKS #2 HEATING OIL DATA

	price, c/g			
	Jan'80	Jan'81	Jan'82	Nov'82
Retail	79	111	123	114
CTW	71	100	113	104
NPR	64	91	105	93
	price markup, c/g			
retail	7.7	10.6	10.5	10.0
wholesaler	5.4	7.8	5.6	9.2
NPR	21.3	30.9	45.2	35.0
Gross	36.2	51.2	63.4	56.4

From the Tables IV-I-1a/b, the #2 retail prices rose steadily from 79 c/g in Jan'80 to 124 c/g, a high in Feb'82, and have since declined to 114 c/g by Dec'82. The CTW (price sold by a wholesaler to a consumer in large volumes) rose from 71 c/g to 113 c/g in Jan'82 and declined to 104 c/g by Dec'82. The NPR rack price of #2 started out at 64 c/g in Jan'80, went to 105 c/g in Jan'82, and then declined to 93 c/g by Dec'82.

A DISTRIBUTOR'S MARGIN IS DEFINED, HEREAFTER, AS THE RETAIL SELLING PRICE LESS THE WHOLESALE PRICE HE PAYS THE WHOLESALER. The study did not have access to wholesale prices for heating oils; the study was provided with wholesaler public CTW postings. Therefore, in this analysis of heating oil a surrogate measure ,markup, is used in place of margin. MARKUP IS DEFINED, HEREAFTER, AS THE RETAIL PRICE LESS THE WHOLESALER'S CTW PRICE. In actuality, the price a distributor pays to

the wholesaler may be somewhat different from the CTW price. In general the wholesale prices are "pegged" in the distributor's purchase contract to the wholesaler's CTW posted price. This allows the wholesaler to change all the contracts at once by merely changing his posting. The Fairbanks distributor markups rose from 7.7 c/g in Jan'80 to about 10.6 c/g at the start of 1981 and have remained constant thru Dec'82 at about 10 c/g. The Anchorage distributor markups over 1981-1982 have varied from 17 c/g to 21 c/g.

The wholesalers markups (CTW price less acquisition cost from the refinery) rose from 5.4 c/g in Jan'80 to over a high of about 7.0 c/g in 1980; since then they have dropped to a low of 5.6 c/g during 1981/1982 and by the end of 1982 rose to 9 c/g.

The NPR #2 posted rack price markup over crude was 21.3 c/g in Jan'80 and rose to over twice that level to 48.3 c/g in Feb'82; it has declined to 35.0 c/g by the end of 1982.

Tables IV-I-2-a/c for the 1980-1982 period provides a comparison of Fairbanks CTW prices relative to Anchorage, Los Angeles, San Francisco, and Seattle. Anchorage because, of its low priced natural gas, does not utilize heating oil to the extent of other Alaska areas. (consequently the volumes moved by a HO retailer in Anchorage are limited, and his unit costs of doing business do not have an economy of scale to it that higher volumes attract; accordingly, margins are higher).

Anchorage retail prices at the start of 1980 were greater than Fairbanks by 13.4 c/g. This margin eroded over the year so that by Jan'81 Fairbanks was 0.7 c/g higher than Anchorage. For a significant part of 1981 Anchorage prices exceeded Fairbanks by 1-2 c/g. At the start of 1982 Fairbanks slightly exceeded Anchorage, and then in the Spring of 1982 were less than Anchorage by four to six c/g.

Fairbanks wholesaler CTW prices less Anchorage wholesaler CTW prices indicated about a negative 5 c/g at the start of 1980. By the fall of 1980 the Fairbanks wholesaler CTW prices were 4.7 c/g higher than Anchorage, and this increased in 1981 to 8-9 c/g. In the Spring of

1982 it began to decline and by December 1982 Fairbanks was only about 1.7 c/g higher than Anchorage.

Anchorage is not the best basis of comparison because of the extensive use of natural gas in home/industrial heating. This fact restricts heating oil sales in Anchorage (see Table III-H-1 for movements of HO into the Railbelt region). Consequently, a more valid comparison is that made between NPR and Seattle, San Francisco, and Los Angeles. These West Coast areas are of particular interest because they also contain the bulk of the refining capacity on the West Coast. For example, if a price in LA plus marine transportation to Alaska and ARR transportation to Interior Alaska is less than what the Interior Alaska market price is, then the opportunity exists to bring alternative (West Coast imports) supply into the Interior at a cheaper cost to the end user.

Fairbanks CTW Price Compared To Outside CTW

	Jan'80	Jan'81	Jan'82	Oct'82
Seattle	-5.1	+16.5	+17.7	+10.0
San Francisco	-8.7	+19.2	+19.4	+12.3
Los Angeles	-8.7	+20.3	+20.8	+11.2

What these figures indicate is that, FAIRBANKS IN EARLY 1980 ENJOYED A 5-9 C/G PRICE ADVANTAGE (LOWER COST) OVER THE WEST COAST PRICES. That ADVANTAGE CHANGED OVER 1980/1981 TO BECOME 16-20 C/G HIGHER THAN WEST COAST CTW POSTINGS. Since NPR is close to the ANS crude oil source it has a geographical advantage over other users of ANS and one questions how much premium NPR must obtain for its heating oil relative to West Coast sources.

Fairbanks CTW Price Compared to Outside CTW
(corrected for marine and ARR trans. costs)

	Jan'80	Jan'81	Jan'82	Oct'82
Seattle	-13.9	+7.0	+7.8	-0.1
SF	-18.0	+9.2	+8.9	+1.7
LA	-18.4	+9.8	+9.9	+0.2

The above figures clearly indicate that comparisons of West Coast rack prices (corrected for transportation) with Fairbanks prices does not indicate the true petroleum market place dynamics. In other words, the price in Fairbanks is not based on a West Coast alternative. However, during the period from mid-1980 to early 1982, an importer of West Coast products could bring petroleum products from the West Coast into the Interior of Alaska and undersell, on a parity basis, NPR offered products by 1 to 11 c/g. At the beginning of 1982 NPR began to reduce this "premium" and by the end of 1982 the premium has almost disappeared.

Tables IV-I-3a/b outline the cost components making up the Fairbanks retail price for #1 and #2 heating oils starting with crude costs at NPR; also shown are the NPR markup, ARR freight to Fairbanks and the CTW and distributors markup. Crude costs at NPR began at 40.9 c/g in Jan'80, rose to a high of 71.8 c/g in Feb'81 and are 57.5 c/g in Nov'82.

Tables IV-I-4a/b indicates by month for the 1980/1982 period the same data as discussed above only presented as a per cent of the crude price for a given month. A few months are summarized below:

Fairbanks #2 Heating Oil Cost Components
(As Percentage of Monthly Crude Cost)

	North Pole MU	ARR freight	CTW MU	distr. MU	retail price
Jan'80	50	4	13	18	184
Jan'81	52	3	13	18	185
Jan'82	75	3	9	17	205
Nov'82	61	4	16	17	198

Table IV-I-5-a/b presents data similar to that shown in I-3a/b and I-4a/b, but indicates by month the percent change in the individual cost components making up the #2 retail heating oil price relative to a Jan'80 level, month by month, for the 1980/82 period. Some monthly data from Tables IV-I-5a/b is outlined below.

Fairbanks Price Composition As % of Jan'80

	crude @ NPR	NPR MU	ARR	CTW MU	distr MU	retail price
Jan'81	39.3	44.7	12.0	44.1	37.5	40.3
Jan'82	40.3	112.1	20.0	4.0	35.8	56.3
Nov'82	34.0	64.2	28.0	70.7	28.7	44.0

Note that #2 heating oil's retail price has increased 44 per cent over the period in question while crude oil price has increased only 34 per cent. This is highlighted by the fact that NPR's markup has increased by 64 per cent; other large markups have increased at the CTW level.

Tables IV-J-1a/b and Tables IV-J-2a/b compare heating oil CTW posted prices for Bethel, Fairbanks, Anchorage and Ketchikan with West Coast cities: Seattle, San Francisco and Los Angeles. The West Coast CTW data was obtained from Platt's Oilgram Monthly Price Summary. What these two tables indicate is that the pricing of #2 oil in the West Coast market is a dynamic process since prices across the board are not very different --- if they were, one region would move products into the high cost region and prices would adjust back to the competive level. The West Coast prices at the end of 1982 have increased about 14-22 % from January 1980; Alaska's prices are 39-46 % of January 1980 prices! The October 1982 #2 heating oil CTW price on the West Coast was 93-91 c/g, whereas Alaska varied from 101-111 c/g.

At times, the CTW heating oil price in Fairbanks has exceeded the #2 heating oil price in Dutch Harbor! In fact, the prices in Dutch Harbor and Bethel are reasonable compared to Fairbanks and Anchorage. These distribution centers must carry sufficient inventory from the summer thru spring of the next year. The price of the petroleum products purchased for the inventory defines the markup for most of the year. Another factor in distributor markup is that these communities do not have the economics of scale that exist in the urban areas of Alaska; consequently, the retail price may be higher resulting from the larger cost per unit of doing business. The main point is that the CTW prices in these two centers are reasonable compared to other Alaska points.

Tables IV-K-1a/c present Heating oil (#1 and #2) pricing data in the Anchorage area for the years 1980-1982 at both the retail and wholesaler level; also Anchorage CTW prices relative to Seattle, San Francisco, Los Angeles and Houston.

As mentioned previously, heating oil sales in Anchorage are affected in a large measure by natural gas which is the dominant fuel in this market. Accordingly, the heating oil market there is not a dynamic one, and price comparisons using Anchorage as a basis can be misleading. What is meaningful from these Tables, however, is that over the period 1980-1982 the distributor, selling heating oil in Anchorage has maintained his markup, namely 14-15 c/g although at times it has increased to 19 c/g for a short time. Probably a distributor has tried to raise his margin (prices), but every time he attempts this it drives more of his customers to natural gas. He is stymied and, while his markup has remained steady, his profit margin has decreased due to escalating costs.

This erosion in profitability and location premium is highlighted by the fact that in early 1980 heating oil parity price (Anchorage CTW terminal less Outside Platt's less GPM) in Anchorage was at a 3 to 7 c/g premium over West Coast supply sources. In mid 1980 this premium disappeared, and Anchorage heating oil was selling at a 3 to 6 c/g discount relative to a West Coast parity price. Over the next two years this discount increased to 7 to 9 c/g.

Tables IV-L-1a/c illustrate Ketchikan pricing data for #2 heating oil (major heating oil component sold in Southeast), as well as price comparisons to West Coast terminal postings.

What the data illustrates is that over the period 1980-1982 the wholesaler has maintained a fairly constant markup level --- about 17 to 18 c/g, although there have been dips to as low as 14 c/g and highs to 25 c/g. In general, the mean has been about the 17-18 c/g level.

The Ketchikan terminal CTW price seems to be based on the Nikiski terminal price plus GPM freight to Ketchikan. However, there is still

a premium built into the Ketchikan price relative to Nikiski. Another guide to compare Ketchikan competitiveness (due to the forementioned problems with Anchorage/ Nikiski prices) is to review Ketchikan terminal CTW prices less West Coast Platt's rack prices less GPM freight rates. This relationship indicates that Ketchikan, which was obtaining its #2 oil at a discount from West Coast parity in the early 1980's, began to pay a premium starting in mid-1980; by the end of 1980 it was at a 10-13 c/g premium (higher than West Coast parity) and this premium level has stayed at about this level over the 1981/1982 period.

D. MOTOR GASOLINE PRICING IN ALASKA

There are four grades of motor gasoline sold in Alaska, namely regular leaded, regular unleaded, premium unleaded and premium leaded. From a pricing standpoint these four grades of gasoline are marketed on a self service and full service basis. Accordingly, rather than analyze every grade's pricing irregularities and inconsistences, pricing trends and the more obviouus imbalances on comparative pricing among various Alaska locations versus the West Coast Rack Prices will be reported.

When reviewing Tables IV-M-1a/c, "Fairbanks Gasoline Analysis and Comparison", one is struck by the relatively stable (constant) price of motor gasoline in Fairbanks at the retail level over the last year and a half. At the wholesaler level the prices increased significantly during 1980 and early 1981 and have more or less stabilized (as have retail prices) since then. Service station markups (distributor) which bottomed at the 13 to 26 c/g level in early 1981 are approaching the early 1980 levels which are 23-29 c/g. At 1982 year end the markups were 18 to 28 c/g, however, they have been increasing since mid-1982.

Another interesting correlation obtained from Tables IV-M-1 is the "premium" (over parity price) Fairbanks is paying for gasoline moved into the Interior relative to the Anchorage terminal price. The

Fairbanks terminal price, less the Anchorage terminal price less the ARR tariff, should show no premium or discount if the two terminal prices are at parity. In 1980/1981 the parity between the two locations was close. In early 1982, however, Fairbanks began to pay a premium over Anchorage parity for the gasoline sold in the Interior. This premium increased continuously in 1982, and is now slightly over 5 c/g for the gasoline sold in Fairbanks.

The consistency in retail prices in Fairbanks over the past eighteen months is shown in Tables IV-N-1a/b which present the retail prices for both regular leaded and unleaded gasoline over the 1980/1982 period in Fairbanks, Anchorage, and the West Coast cities of Seattle, San Francisco, and Los Angeles. Note that the West Coast retail price in these areas over the last eighteen months has been responsive to competitive market forces and has moved downward --- this movement occured during a period that Fairbanks retail prices have remained almost constant.

Tables IV-N-1c/d present the same retail data as above but corrected for both State and Federal taxes. The Federal mogas tax is 4 c/g. The State of Alaska mogas tax is 8 c/g. The State of California has a 7 c/g tax plus a surtax of 6 per cent on the total price (including the Federal tax and the California 7 c/g highway tax). The State of Washington's tax is 12 c/g (which during the last half of 1981 was 13.5 c/g) for a total of 16 c/g Federal and State.

The following table summarizes the retail prices for regular leaded motor gasoline in the five cities over the study period, 1980-1982.

RETAIL REGULAR LEADED PRICES CORRECTED FOR TAX

	FAI	ANC	SEA	SF	LA
Feb'80	115.2	NA	99.7	104.6	105.0
Jan'81	122.4	NA	103.3	105.8	104.0
Jan'82	136.2	118.6	110.3	111.7	109.1
Dec'82	136.2	110.9	93.3	97.4	93.6

In the last month of 1982, Fairbanks residents paid 42.6 c/g more than Seattle or Los Angeles residents, and Anchorage residents paid 17.3 c/g more. Whereas, the West Coast has responded to market dynamics in 1982 (a drop of over 15.5 c/g) the Fairbanks market has remained constant! The Anchorage price has dropped only 8.7 c/g!

Tables IV-N-2a/d present a comparison of the retail price in Fairbanks and Anchorage corrected for transportation and taxes with West Coast cities and briefly summarized below for regular leaded self service price.

Retail Price Comparisons corrected for trans. and taxes

	Fairbanks				Anchorage		
	ANC	SEA	SF	LA	SEA	SF	LA
Feb'80	NA	7.5	2.0	1.3	NA	NA	NA
Jan'81	NA	10.6	7.6	9.0	NA	NA	NA
Jan'82	10.8	17.0	15.1	17.4	6.2	4.3	6.6
Dec'82	17.2	32.8	28.2	31.7	15.6	11.0	14.5

This table reconfirms the observation above, that the retail price difference between Fairbanks and the West Coast has been growing even when corrected for transportation and taxes! The same conclusion holds true for Anchorage. This table indicates that the alternative of bringing West Coast product into these two cities at selling at parity with existing price would be viable because of the large "markup" available as indicated in the table.

Tables IV-N-3a/b present Lundberg Letter wholesale prices at Anchorage, Seattle, San Francisco, and Los Angeles for self service. The table indicates a regular leaded (RL) drop from September 1981 at 115 c/g to 105 c/g in Dec'82, or roughly a drop of 10 c/g. This does not compare to a drop of over 17 c/g on the West Coast. Clearly Anchorage wholesale pricing is not the same as the West Coast.

Tables IV-N-4 compares Anchorage and West Coast wholesale prices for regular leaded and unleaded corrected for GPM transportation to Alaska for the period that the Lundberg Letter monitored Anchorage, starting Sep'81. Highlights of that Table are given below.

Anchorage Wholesale RL Price Comparison
(corrected for GPM transportation)

	SEA	SF	LA
Sept'81	4.1	3.7	3.2
Mar'82	14.4	14.7	14.0
Dec'82	11.6	9.4	10.3

This table indicates that in 1982 one could purchase RL in Los Angeles and transport it to Alaska and sell it wholesale and realize the above "markup" if your price was at parity with Anchorage.

Table IV-N-5a/b presents the Lundberg Letter's implied margin between retail price and wholesale price corrected for motor gasoline taxes. Anchorage distributor margins have remained almost constant at about 5.4 c/g. West Coast margins on RL self service since Sept'81 which were about the same as Anchorage have decreased to a Dec'82 level of 1.2 c/g to 3.6 c/g. Table IV-N-6 presents a comparison of Anchorage with Seattle, San Francisco, and Los Angeles for the period Sep'81 thru Dec'82. These comparisons indicate that Anchorage distributor margins in Dec'82, having remained constant, were 4.0 c/g higher than West Coast margins which have been declining. THE ABOVE ANALYSIS INDICATES THAT SINCE MARGINS ARE RELATIVELY CONSTANT IN ANCHORAGE THE PRIMARY PRICE DETERMINANT IN ANCHORAGE IS THE WHOLESALE PRICE WHICH IS SIGNIFICANTLY ABOVE WEST COAST PRICES CORRECTED FOR TRANSPORTATION.

Retail motor gasoline price data was available for Fairbanks from the Fairbanks North Star Borough Community Research Center. The only other retail information available for Alaska was the Lundberg Letter for Anchorage. The Lundberg Letter also monitors wholesale price and calculates an implied margin. The other data that was available was the CTW motor gasoline prices for Fairbanks, Anchorage, Dutch Harbor, Bethel, and Ketchikan. The following analysis utilizes this information, and as in the heating oil discussion, the term markup is the difference (where available) between the retail price and the wholesaler's CTW posted price.

Table IV-N-7a/b presents the public posted CTW prices for the Alaska terminals in the study and the West Coast. Striking is the lack of movement in price in the Alaska market compared to the West Coast, and the Fairbanks' prices in the Table are only exceeded, at times, by Bethel. Generally, Dutch Harbor has a lowe' price than Ketchikan (which contradicts what one would expect given GPM tanker costs and the size of the two communities). Bethel in the last half of 1982 did not change its price reflecting the inventory cost. The following table summarizes points over the study period.

Regular leaded posted CTW prices in Alaska

	Jan'80	Jan'81	Jan'82	Nov'82
ANC	79.9	102.9	112.3	107.2
BET	94.2	117.0	124.5	121.0
DUT	90.6	103.9	116.5	107.3
FAI	85.8	108.8	120.1	119.0
KET	79.6	102.9	114.7	110.7
Regular leaded posted prices on West Coast				
SEA	84.5	92.7	101.0	94.3
SF	82.6	91.2	95.8	92.8
LA	82.6	91.1	95.4	90.8

Tables IV-N-8a/c compares the Alaska communities CTW price with Seattle, San Francisco and Los Angeles, respectively, for regular leaded motor gasoline corrected for transportation (GPM). From the tables it is clear that Alaska enjoyed a lower price at the start of 1980 and that this has switched around completely by the start of 1981 where Alaskans were paying a "premium" above the alternative of West Coast.

RL CTW At Alaska Cities Comparison With Los Angeles CTW

(corrected for transportation)

	FAI	ANC	KET	DUT	BET
Jan'80	-5.5	-5.9	-4.5	-5.3	-5.7
Jan'81	+8.4	+8.8	+10.2	+9.6	+8.8
Jan'82	+15.0	+13.9	+17.6	+11.0	+21.0
Nov'82	+18.2	+13.5	+18.1	+13.5	+17.2

Tables IV-N-9a/b present the calculated distributor markups determined from the CTW prices for Fairbanks, Anchorage and West Coast cities. The distributor markup in Fairbanks remained constant at about 16 c/g to 17 c/g, and in Anchorage the distributors' markup also remained constant, albeit, at a lower level of 5 c/g to 6 c/g. Juxtaposed is the West Coast where at Jan'80 the markup was 15 c/g, it has subsequently declined to 8 c/g by Nov'82.

Table IV-N-10a/b presents a comparison of distributor margins (retail less wholesale as reported by the Lundberg letter) and markups (retail price less the CTW price). A shift has occured from the early 1980's where the CTW price was greater than wholesale to the 1981-1982 period where the CTW price is less than Lundberg Letter's reported wholesale price to distributors on the West Coast. In Anchorage the CTW and wholesale price reached parity in fall 1982. This supports the use of the markup as an indicant of distributor margin.

WHAT THE ABOVE SEEMS TO INDICATE IS THAT ALASKAN MARKETS ARE NOT RESPONDING AS QUICKLY (IF IT DOES AT ALL) TO MARKET FORCES AS IS OCCURING ON THE WEST COAST MARKET.

CHAPTER FIVE

ALASKA IN-STATE REFINING PROFITABLILITY

In determining the profitability of Alaska refinery(s), data from 1981 and 1982 was used. The information on pricing of products and crude for these years was complete and consistent; these two years also encompass the period free of the Federal Oil Controls commencing with decontrol in January 1981. It was not the intent of the study to exactly model or define the profitability of an particular refiner, but to determine levels of magnitude of profitability between Alaska refiners and with other refiners in the industry. The level of detail ,herein, is sufficient to attain a good appreciation of how the Alaska refiners are profiting from their Alaska operations.

A. NORTH POLE REFINERY

Utilizing the pricing data shown in Table V-O-1 and the product volume data in Table III-H-1 and III-H-2, the NPR revenue estimates for the years 1981 and 1982 were calculated as outlined in Tables V-P-1 and V-P-2. These Tables are the basis for determining NPR's return on investment.

A review of the refinery's total revenue, crude cost and product markup (refinery price less raw material costs) over the 1981/1982 period collaborates the trend outlined in Chapter IV, namely that once decontrol became effective (end of January 1981), refinery markup (profitability) increased till mid-1982. At that time the markup began a slight decrease. What may have motivated this reduction in refinery markups was the expressed concern of the Interior consumers to their elected public officials/legislators. By mid-1982 there was sufficient concern that the legislators perceived the need for a preliminary study on the pricing of petroleum products in the Interior

of Alaska.

Table V-P-2a/b present 1981 and 1982 volumes, average product realizations and markups. Some interesting results from reviewing these two tables indicate the following:

--- During 1982, the refinery averaged about 800 BPCD more crude throughput (over 1981), yet the total cost of crude to the refinery for 1981 and 1982 was about the same. In effect, the cost of a barrel of crude to NPR during 1982 was about two dollars lower than 1981.

--- The average product realization on a dollar per barrel ($ PB) remained about the same namely $41.65 PB, during 1981 and 1982.

--- The margin per barrel as a result of the overall lower cost of crude to the refinery was $3.15 PB (7.5 c/g) more in 1982 versus 1981.

--- It must be noted that NPR does not manufacture any motor gasoline or asphalt. Also the return oil is pumped back to TAPS, and the value of this material as shown (in the Tables V-P), is delivered crude value less a gravity decrease penalty, less the GVEA pipeline tariff on delivered crude.

--- The unit gross margins for 1981 and 1982, namely $10.17 PB and $12.38 PB, when multiplied by the 1981 and 1982 BPCD product volumes shows a yearly gross margin of 46 and 60 million dollars.

The profitability of a refinery is determined by subtracting the "other" costs from the gross margin. These costs include interest, depreciation, operating costs and taxes.

NPR <u>"operations" cost</u> in 1981/1982 amounted to $2.96 and $2.88 per barrel respectively. These conservative figures were arrived at by using "Petroleum Intelligence Weekly" reported average refinery operating cost for all U.S. refineries set at $.65 PB of crude charge for 1982. The number and type of refineries operating in the U.S. is

quite varied with respect to operation costs. Since the Chevron and NPR refineries are simple hydroskimming type refineries, typical of the lowest operating cost refineries in the U.S., the extrapolation of the average U.S. operating cost for all refineries to Alaska's skimming operations is a most conservative application. This "operations" cost figure is for the refinery alone; because, this study does not include distribution operations costs and profits as part of the refinery operations.

This average for all U.S. refineries was multiplied by 1.30 to take into effect the higher Alaska costs. The $.845 figure ($.65 x 1.3) was multiplied by 1.1 to reflect the higher Fairbanks costs. The $.93 PB ($84.5 x 1.1) was then corrected for the fact that approximately three plus barrels of crude must be charged at NPR for every barrel of product manufactured. If the $.93 PB figure is divided by the per cent of each crude barrel in 1982 that is manufactured into refined petroleum products then the $2.88 PB figure for 1982 is obtained.

The same reasoning as above was used to obtain a 1981 operations cost at the refinery; however, a correction for inflation must be made for the period 1982 to 1981. The State of Alaska's inflation factor (6.3% for 1982 from 1981) was used to obtain a comparable 1981 operating cost. When this is done, the 1982 $.845 PB cost element deflates to $.80 PB. Applying the 10 per cent Fairbanks cost adjustment and then dividing this number by the percentage of refined products manufactured from crude, the 1981 "operations" unit cost of $2.96 PB is obtained.

The depreciation cost was determined by using a fifteen year life and straight line amortization.

Insurance and taxes' cost (local/borough but not including State and Federal) were estimated to be at 2 per cent of the refinery cost which was taken from the Borough assessed value of $40.0 million.

Interest was estimated at 11 per cent, however, this interest was only applied to 70 per cent ($28 million) of the plant cost. It is assumed that $12 million is equity investment.

The total of all the North Pole operating costs in 1981 and 1982 amount to $4.56 and $4.38 per barrel of product manufactured. This is subtracted from the gross margin figures(s) of $10.17 and $12.38 PB to yield an income of $5.61 and $8.00 PB of product manufactured. Stating this another way, the refinery produced a profit of $25.4 million and $38.8 million in 1981/1982 respectively. The table below highlights some of these statistics for 1981 and 1982.

DERIVED NORTH POLE REFINERY INCOME STATEMENT

	1981		1982	
	MM$/yr products	$PB	MM$/yr products	$PB
Product Revenue	188.6	41.7	201.9	41.7
Crude Purchases	142.5	31.5	141.9	29.3
Gross Margin	46.1	10.2	60.0	12.4
Operation Costs	20.7	4.6	21.2	4.4
Net Income	25.4	5.6	38.8	8.0
Income(after 54% tax)	11.7	2.6	17.8	4.3
Payout, years	3.2		2.2	
DCF,return %	31		46	

A review of the above table indicates that the NPR refinery improved its profit in 1982 above a very attractive 1981 income base. In effect NPR increased its net income by over 50 per cent in 1982 relative to 1981; also its DCF return on investment by the same percentage. What is worth noting in the above table is that the NPR refinery is paying for itself every two years. Normally, refineries try to attract a return of 15-18% (straight line) and to pay for themselves in 5-7 years. Over the past ten years this desired return level of 15-18% for U.S. refineries has not been achievable --- in fact many refineries have been and are operating in the red (loss).

B. Nikiski Refineries (Tesoro and Chevron)

Tables V-Q-1a/b present the base data on crude costs and product price net backs at the Nikiski refineries for 1981 and 1982 respectively.

The crude costs are shown for ANS, Indonesian, Cook Inlet (West and East side) crudes. The ANS crude costs (using the average in-value price) include TAPS pipeline loss, the TAPS tariff, and the GPM freight from Valdez to Nikiski. The Cook Inlet crudes from the West Side include a GPM freight cost to Nikiski on the East Side. The Indonesian crudes are at the official price plus GPM freight to Nikiski. The asphalt mix (used as an input during the summer by Chevron) price is the summer CTW price reported in Platt's Oilgram for "cutback" asphalt on the West Coast discounted by 30 percent, since asphalt is a difficult product to place in the West Coast market. The alternate product made from the asphalt is high sulfur fuel oil --- a low economic return product in California which is very sensitive to air quality levels. In addition, the asphalt mix is an inter-company transfer from a company refinery in California. For these reasons the asphalt mix was discounted. To bring the asphalt mix to Nikiski, a GPM tariff was added to the discounted West Coast Platt's price on cutback asphalt.

The product net back prices at Nikiski are the Anchorage terminal postings (except for gasoline which is the Anchorage wholesale price) less the Nikiski pipeline charges on the Nikiski to Anchorage movement. The Nikiski Fuel Oil #6, prices which vary with sulfur percentage, are U.S. average prices corrected for General Purpose Marine (GPM) freight from Nikiski to Los Angeles. The Nikiski Bunker C price is a Los Angeles terminal price corrected for GPM from Nikiski to Los Angeles to achieve a net back price at the refinery. The asphalt price from Nikiski was the contractor price for the two years.

C. TESORO NIKISKI REFINERY

Tables V-R-1a/b present revenue and crude costs for the Tesoro Refinery for the 1981-1982 period. These tables indicate that in early 1981 (decontrol of oil took place in January) the margin (difference between revenues and crude costs) increased significantly, and that this margin gain has been retained over the remaining 1981/1982 period. It is interesting to note that while margins have increased, product revenue and crude costs on a per barrel basis have decreased.

Tables V-R-2a/b present this data more specifically on an annual basis: In 1982 Tesoro processed about 5 MBPCD more crude (a 10 % increase over 1981), yet its total crude cost only went up about 2-3 per cent (unit cost decreased) while its total product realization increased about 6-7%. In effect, Tesoro was able to make more petroleum products at minor increased cost in raw material. While its product realization decreased somewhat, this decrease was more than offset by the cheaper cost of raw materials.

The result of this increase in margins (both on a unit basis and annual total) is outlined in Tables V-R-3a/b, Tesoro's Income Statements. The product revenue and crude purchase figures are from Tables R-1 and R-2a/b.

The operational costs were calculated using the same basis and factors as in the North Pole discussion except, (a) the Interior Alaska factor was not applied to Nikiski and (b) Tesoro refinery is somewhat more sophisticated than the Chevron and NPR refineries which are hydroskimming plants. Since the U.S. average refinery cost of $.65 was for all types ofU.S. refinery plants, a 60 per cent increase to the average number was applied to compensate for the cost applicable to the Tesoro refinery; the Tesoro Alaska operational cost therefore became $1.36 PB in 1982 and $1.28 PB in 1981.

Not included in the refinery inputs is neither the natural gas the refinery purchases, nor the refinery's sale of propane. For the natural gas, no data was available on the volume purchased or the price paid. For the propane no data was available on posted price. The refinery cost and refinery revenue on propane sales may or may not cancel each other, but the effect on the directional economics should not be great. A summary of the Tesoro refinery economics is outlined below.

DERIVED TESORO INCOME STATEMENT

	1981		1982	
	MM$/yr	$PB product	MM$/yr	$PB product
Product Revenue	590.3	40.9	631.0	38.9
Crude Purchases	462.7	32.1	474.3	29.2
Gross Margin	127.6	8.8	156.7	9.7
Operating Cost	35.4	2.4	36.0	2.2
Net Income	92.2	6.4	120.7	7.5
Income(after 54% tax)	42.4	2.9	55.5	3.4
Payout, years	2.3		1.8	
DCF Return, %	43		57	

In effect Tesoro increased their margin, by approximately 35 per cent. This is indicated in the above income levels, comparing 1981 with 1982, and resulted in Tesoro improving upon their already attractive 1981 financial results; namely a payout decreasing from 2.3 years to 1.8 years, and a DCF rate of return increasing from 44 to 57 per cent.

D. CHEVRON NIKISKI REFINERY

Tables V-S-1a/b present the product revenue and crude costs for the Chevron refinery at Nikiski. The unit prices for crude oil products are based on the values as shown in V-Q-1a/b and discussed earlier. Chevron's residual oil is priced as a high sulfur fuel oil (greater than one per cent); the value of this material as a Chevron refinery feedstock for cracking was not available. Chevron consequently did not in the analysis receive the $25 PB that Tesoro receives for its low sulfur residual in 1982, but approximately $23 PB because of the high sulfur content.

Chevron also takes its excess refined straight run naphtha (SR) and exports this to its West Coast refineries where it is used in benzene and gasoline manufacture. This product is not identified separately in the revenue figures for lack of price data. Instead, the volume is included in the residual totals; this results in a conservative profit margin because of the high value of SR.

It should be noted that the asphalt and product revenues which are indicated over all twelve months of the year are "notional" inputs, since the asphalt is sold together with the kerosene by-product (from the asphalt mix processed) only over the summer months of the Alaska construction season. The same is true of the other products which Chevron manufactures during the fall, spring and winter when it processes crude oil in the unit. The "notional" basis is on a BPCD basis in the annual summaries, so that it does result in the correct cost figures and revenue amounts over a calender year. This approach was necessary, because Chevron operates in a batch mode: crude or asphalt.

A review of the V-S-1a/b tables indicates that while the product revenue on a unit basis is decreasing over the 1981/1982 period, refinery raw material (crude oil plus asphalt mix) costs have

decreased also. The net effect is that the Chevron margins have improved; going from a negative position in 1981 to above $3 PB in 1982. This is vividly shown in Tables V-S-2a/b. Chevron had a decrease in crude thru-put in 1982 of about 3-4 per cent and, while its product revenue went down 6 per cent, its crude costs went down 10 per cent relative to 1981. This increase in unit margins from $.65 to $3.29 PB of product sold --- an increase of 500 per cent in margin was a salient factor in Chevron's profit turn around in 1982. The Table below presents Chevron's economic statistics for the 1981/1982 period.

DERIVED CHEVRON INCOME STATEMENTS

	1981		1982	
	MM$/yr	product	MM$/yr	product
Product Revenue	154.2	32.0	143.7	30.9
Crude Purchase	151.0	31.3	128.4	27.6
Gross Margins	3.2	.7	15.3	3.3
Operating Costs	4.6	1.0	4.6	1.0
Net Income	(1.4)	(0.3)	10.7	2.3
Income (after 54% tax)	(1.4)	(0.3)	4.9	1.1
Payout, years	neg.		4.6	
DCR Return, %	neg.		21.0	

Chevron operates as part of a large network of refineries. It just recently converted its operation to run ANS crude oil and thru product pricing and crude oil cost improvements their position greatly improved from 1981 to 1982.

E. COMPARISON OF GROSS MARGINS WITH OUTSIDE REFINERS

The "U.S. Refining --- Rotan Mosle Gross Margin Index" published quarterly by Rotan Mosle's (a Wall Street Brokerage House) Oil and Gas Research Division out of Houston Texas provides a basis of comparison between the Alaska refiners and "others". For the first three quarters of 1982, the refinery gross margin for six U.S. refiners

("others") that represent the industry were: $4.17 PB; $5.04 PB; and $6.49 PB, respectively for the first three calender quarters. The 1982 calculated gross margin of NPR was $12.38 PB; the gross margin for Tesoro was $9.65 PB; and the gross margin for Chevron was $3.29 PB.

These numbers, which reflect the 1982 gross markup above crude costs for product prices, clearly indicate that:

NPR gross margin exceeded "others" by a 1.9 to 3.0 factor;
Tesoro gross margin exceeded "other" by a 1.5 to 2.3 factor;
Chevron gross margin did not exceed the index.

CHAPTER SIX

EXECUTIVE SUMMARY

--- The demand for petroleum products in Alaska increased about 6 per cent (4 MBPD) in 1982 over 1981. Chevron maintained their volume level, but, NPR increased their product volumes by 800 BPCD, and Tesoro increased their product volumes by about 4,700 BPCD. While this increase is greater than the year to year volume increase of products sold in Alaska, it indicates that product imports into the State decreased. In effect Alaska is becoming more self sufficient in supplying itself with refined products. (Table III-H).

--- In calculating tanker/barge rates a number of tariffs (dollars per ton) are quoted for movements between two ports, depending on the size vessel used. Since it was difficult to determine the vessels each company used in its actual crude/product movements, a General Purpose Marine (GPM) rate tariff (which is the highest tariff quoted) was used. It is the most conservative basis, since the study then utilizes the highest cost element of ocean transportation in the product price buildup of an equivalent delivered product price. Actually, the oil companies incur lower transportation costs than shown in this study (company owned and larger vessels), and this difference (savings) actually increases the oil companies profit. (Table II-B).

--- The Alaska Railroad (ARR) freight rates have increased 28% (1.6 cents per gallon) for the Anchorage Fairbanks movement over the 1980-1982 period. Nonetheless, when comparing ARR freight rates to comparable rail movements in the Lower 48, the ARR rates are very reasonable. (Table II-C).

--- Refinery investments have been/are extremely profitable in Alaska. The following table indicates the profitability of the three Alaskan refineries for the period 1981/1982; also included are payouts, DCF's,

net income after tax, and original plant investments.

ALASKA IN-STATE REFINERIES RETURN ON INVESTMENT

	North Pole		Tesoro		Chevron	
	1982	1981	1982	1981	1982	1981
Income (AT), MM$	17.8	11.7	55.5	42.4	4.9	-1.4
Payout, years	2.2	3.2	1.8	2.3	2.1	neg
DCF, %	46	31	57	43	21	neg
Investment MM$	40.0	40.0	101.7	101.7	22.3	22.3

It should be noted that the Alaska refineries are paying for themselves in about 2 years, at a time that many refineries around the world are going bankrupt and/or operating in the red. Furthermore the profit levels (16-60 % DCF's) indicate that Alaska's refineries are among the most profitable in the U.S.A. In the last year the profitability of the refineries in Alaska more than doubled from an already very profitable return basis. (Tables V-P, V-R, V-S).

A primary reason for the high profitability of the Alaska refineries is that the pricing basis that they are using for their refined products greatly exceeds the sum of West Coast ex refinery price plus ocean transportation cost plus terminal and handling costs; this in spite of the fact that the Alaskan refineries are using mostly local crude oils which are favorably priced relative to their refinery location. (See Chapter III).

--- Another reason for the high profitability of the Alaska refineries is that the reductions in crude pricings are not being reflected in the Alaska market price of the refined products. (See Chapter IV).

--- Cook Inlet production of crude oil is decreasing and is presently about 66 MBPCD (June 1982). This decrease in Cook Inlet production is important to Tesoro's profitability which is dependent upon low sulfur crude to manufacture low sulfur fuel oil for sale to San Diego Power and Light. (Table II-A-1 & 2).

--- The price of Alaska North Slope (ANS) Royalty crude oil at Pump Station #1 of TAPS is not the same for all in-state refineries. North Pole refinery is paying about 3[illegible]-40 cents per barrel (varies monthly) more for its Royalty ANS crude than Tesoro at P.S. #1. (Table II-A-4). However delivered costs of ANS crude are less for NPR than for Tesoro and Chevron because of NPR's location on the TAPS.

--- Following decontrol (January 1981) the price of ANS has dropped about $7-8 PB over the next 14 months. Since Mar'82, the ANS crude price has increased about $1.50 PB --- this during a period that domestic crude costs in the lower 48 have been dropping. (Table II-A-4).

--- Tesoro is responsible for over 95 per cent of the gasoline used in the Railbelt. The imports into the Railbelt at Anchorage (less than 5 per cent of total) consist of super unleaded product and other gasoline stocks. Most regular leaded, and unleaded, and premium leaded motor gasoline is manufactured by Tesoro.

--- The price of motor gasoline in Fairbanks at the retail level increased significantly during 1980, a period of increased costs of crude oil. Starting in early 1981 until today, gasoline prices have remained steady in spite of significant decreases in crude costs. The motor gasoline retail market has reacted to cost increases on the upside but not on the downside. This lack of a market reaction to declining costs seems to indicate a "structured" non-competitive retail environment in Fairbanks. (Table IV-M).

--- When comparing Fairbanks' retail motor gasoline prices with Anchorage retail prices, and when considering the freight to move the motor gasoline from Anchorage to Fairbanks on the ARR, the price of motor gasoline in Fairbanks in 1982 is about 17 cents per gallon higher (a premium) than Anchorage retail price plus ARR freight. This premium of 17 cents per gallon has steadily built up over 1982; the premium amounted to only 6 cents per gallon in Sept'81. The justification for such a premium is difficult to identify, since the retail price in Anchorage since Sept'81 to Dec'82 dropped about 12 cents per gallon (Table IV-N-1 thru IV-N-10).

--- The Fairbanks distributor markups have remained constant at about 16 c/g over the last year and a half, and the Anchorage distributor markups relatively constant at 6 c/g. As a comparison, the markup in Seattle has decreased from about 10 c/g to 3 c/g by Nov'82. The margins for distributors in Anchorage reflect this conclusion and have remained constant at about 5 c/g while on the West Coast they have dropped from 7 c/g to 2-3 c/g over the period Sept'81 to Dec'82. The markup in Fairbanks is over 2.5 times that of Anchorage distributors.

--- When comparing retail gasoline prices in Fairbanks and Anchorage with Seattle, San Francisco, and Los Angeles, there is a significant "premium" paid for motor gasoline in Alaska relative to the West Coast. Anchorage in Dec'82 is paying about 8 to 12 cents per gallon higher for regular gasolines at self service stations than at similar service stations on the West Coast; Fairbanks is paying 29-37 cents per gallon more. When the retail prices are corrected for motor gasoline taxes, Fairbanks pays 38-42 cents per gallon more; Anchorage pays 23-27 cents per gallon more.

It is interesting to note that the retail price in self service stations in Fairbanks has remained steady over the 1982 period, whereas in Anchorage, Seattle, San Francisco and Los Angeles the decrease in price during 1982 has been significant. The following table outlines this point. (Table IV-N-1).

RETAIL SS GASOLINE PRICE CHANGE OVER 1982

location	cents per gallon
Fairbanks	0 drop
Anchorage	8 drop
Seattle	15 drop
San Francisco	15 drop
Los Angeles	16 drop

--- When considering regular unleaded and premium motor gasoline (high octane) the pricing and margin trends move along the same patterns as shown for regular gasoline as discussed above. What is different, is the margin levels at the retail, wholesale and distributor levels. The relative comparisons of Fairbanks and Anchorage, however, with Seattle, San Francisco and Los Angeles indicate the same trend, namely that prices in the Lower 48 cities are significantly lower than in Alaska, and that prices in the Lower 48 are reacting positively to competitive forces, whereas in Anchorage they are reacting only somewhat and in Fairbanks they are not reacting at all. (Table IV-N).

--- The CTW posted motor gasoline prices across Alaska indicate that Anchorage (Nikiski) maybe the basis for mogas pricing, because all prices are higher than Nikiski and appear to vary in similar pattern. For example, Ketchikan is 5 c/g higher than Anchorage which is striking because of the proximity of Ketchikan to the West Coast refineries. Obviously, an "Alaska" pricing policy is being followed which has no relationship to the West Coast alternative, except to be higher. (Table IV-N-7)

--- As a general statement it can be stated that the prices of motor gasoline products at the Alaska retail and wholesaler level have remained about constant over a two year period while retail and wholesaler prices elsewhere have dropped. Not surprisedly, crude costs, also, dropped during this period. As a result Alaska refiner/wholesaler margins (hence profits) have increased dramatically; in some instances by 80 per cent.

--- The higher cost of jet fuel at Fairbanks relative to Anchorage has resulted in some air carrriers picking up more of their jet fuel volumes (700 -800 BPD) at the cheaper Anchorage jet fuel supply source.

--- In the period 1980/1982, Fairbanks has gone from a 6 cents per gallon lower price than Anchorage to a 4 cents per gallon higher price. Furthermore this shift (in the pick up of jet fuel) to Anchorage has required NPR to move jet fuel to Anchorage and to pay for the transportation --- Fairbanks to Anchorage; a cost of about 7

cents per gallon. (Table III-F).

--- Jet fuel demand in Alaska is growing at about 8.7 per cent per year; this is the fastest growth of a petroleum product in the State. Most of this demand for jet fuel is in Anchorage --- 85 per cent of the Railbelt's jet fuel demand is in Anchorage. (Table III-[illegible]).

--- A "consortium" has been formed at both Anchorage and Fairbanks airports which negotiates on behalf of the airlines to obtain jet fuel at a most favorable price for the airlines. In order to achieve a lower price at both Anchorage and Fairbanks, the "consortium" is importing (foreign) cheaper supplies of jet fuel into Alaska (starting December 1982). This creates imbalances in the Alaska supply-demand of jet fuel, which in turn puts pressure on the refinery suppliers to either lower their prices of this high profit product (in order to secure the sale and minimize the export of jet fuel out of Alaska), or to cut crude rates at their refinery to counter a surplus production of jet fuel. (general comment)

--- Heating oil prices in Anchorage, which for most of 1981 and the beginning of 1982 were about the same as Fairbanks, have increased above the Fairbanks level in the latter part of 1982. This increase (4 cents per gallon) however must be tempered by the fact that very little heating oil is sold in Anchorage because of cheap natural gas. Also, because of the limited amount of heating oil sold into the Anchorage market, little economy of scale is experienced so costs are higher per unit. This is reflected in the higher unit cost of heating oils in Anchorage, as well as higher dealer margins.

--- When comparing heating oil prices in Alaska (Fairbanks, Anchorage and Ketchikan) relative to West Coast locations, there has been a complete flip-flop during the 1980-1982 period. In early 1980 the Alaska locations had a lower price than West Coast locations of 4 to 8 cents per gallon. Around mid 1980 the price difference disappeared, and today the Alaska locations are experiencing a 7--- 12 cents per gallon higher price. It must be emphasized that most of this price difference <u>exceeds</u> transportation costs from the West Coast to Alaska locations. (Table IV-I-2, Table IV-K-1, Table IV-L-1).

--- In the period 1980-1982, the cost of crude at the North Pole refinery has gone up about 35 per cent; however, the margin on diesel oil manufactured at the refinery has gone up almost twice this amount (about 60 per cent) or, in cents per gallon, from 23 to 38 cents. (Table IV-I-5 and IV-I-3)

--- There is an almost total vacuum in the collection, analysis and assimilation of meaningful sale/cost data on the pricing of petroleum products in Alaska. The only two entities involved in the collection of meaningful pricing data on petroleum products in the State are the Fairbanks North Star Borough Community Research Center and Rural Alaska Community Action Program (RurAlCap) --- they are to be complimented for undertaking this data collection. (General Comment).

--- Because of an almost complete lack of meaningful data on petroleum pricing in Alaska, the Legislature is unable to oversee, and the Administration is unable to achieve, proper implementation of the various Statutes and Regulations in effect which are supposed to guarantee to the Alaskan citizen the maximum benefit of crude oil price. Today's sales price for refined petroleum products, which is higher than material moved from the Lower 48 to Alaska locations, precludes any benefits to Alaskans. (General Comment).

--- The Borough tax payments for the Tesoro and NPR refineries are about the same in spite of the fact that the assessment on the Tesoro refinery is 2.5 times that of NPR, i.e. 100 MM$ to 40 MM$. (Table III-G)

--- The Alaska Public Utilities Commission (APUC) which inherited the duties of the Alaska Pipeline Commission (APC) has not reviewed the intra-state tariffs of Trans-Alaska Pipeline System (TAPS), the Golden Valley Electric Association (GVEA) or the Nikiski Pipeline since the tariffs were first established. The APUC/APC is required to review the tariffs in effect at any given time, and ensure that the APC originally established pipeline tariff(s) methodology is adhered to by the pipeline companys. The APC method would allow an annual declining tariff because of annual reduction in the depreciated value of the

pipeline. (General Comment).

--- The State, through its long term sale of Royalty oil at "in-value" prices, makes possible the profit of the in-state refineries that receive this oil. It can represent directly (as in the case of NPR) or indirectly (as in the case of Tesoro) a major percentage of the refiners crude slate. (General Comment).

--- Existing Royalty oil contracts do not specifically address "benefiting Alaskans" when an in-state refinery utilizes the Royalty oil. It is interesting to note that every in-state purchaser that has applied/purchased Royalty oil has implied or stated directly that his purchase/acquisition of Royalty oil will result in lower petroleum product prices to Alaskans. This is hardly the case when an Alaskan must pay for refined petroleum products manufactured in Alaska, a price equal to West Coast product prices plus transportation/handling costs, p[illegible] <u>sizeable premium.</u> (General Comment).

--- There is presently no requirement for instate refineries and marketers to report, to government agencies, pricing/operating data so that the Legislature and Administration can insure that;

(1) "Alaskans" are truly benefiting from in-state use of Royalty oil, and

(2) "Alaskans" our not taken advantage of due to our "isolation" from a dynamic market. (General Comment).

GLOSSARY OF TERMS USED

ANS	Alaska North Slope, usually refers to ANS crude oil
API	in degrees, specific gravity measure, American Petroleum Index
ARR	Alaska Railroad
AvGas	Aviation Gasoline, naphtha based fuel
B	barrel, equivalent to 42 U.S. gallons
BPD	barrels per day, a general term, either BPCD or BPSD
BPCD	barrels per calender day, a period average
BPSD	barrels per stream day, actual thru-put
c/g	cents per gallon
CTW	a wholesaler's public posted consumer tank wagon price
DEPD	State Division of Energy and Power Development
DNR	State Department of Natural Resources
DOTPF	State Department of Transportation and Public Facilities
DR	State Department of Revenue
F	Fahrenheit
FY	fiscal year
gate	delivered into the refinery
GPM	general purpose tanker freight rates
M	thousand
MM	million
markup	difference between retail price and wholesaler's CTW price
margin	difference between retail price and wholesale price
mogas	motor gasoline (regular or premium; leaded or unleaded)
PB	per barrel
rack	point of product delivery and title transfer at refinery
SR	straight run, a naphtha stream from distillation
TAPS	Trans Alaska Pipeline System

APPENDIX OF TABLES

TABLE II-A-1

Cook Inlet Crude Oil Production Summary Degree API

June 1982	deg. API	MBPCD
Westside		
Granite Point 1	41.00	3.31
Granite Point 2	41.00	5.92
Granite Point 3	33.00	0.33
Trading Bay Pool	27.00	3.41
Trading Bay Unit	35.00	43.82
Pool API/sum	35.43	56.79
Eastside		
Middle Grand Shoal	36.00	8.66
S.Mid. Grand Shoal	32.00	1.08
Pool API/sum	35.55	9.74
Cook Inlet		
Pool API/total	35.44	66.53

TABLE II-A-2

TESORO COOK INLET STATE ROYALTY CRUDE OIL PURCHASES, 1981-82
west and east side, 26-41 degree gravity

	VOLUME B	COST $	PRICE $/B	BPCD	
JAN81	325753	2123457	6.52	10508	@control $
FEB	288598	9339107	32.36	10307	@decontrol
MAR	313576	9978101	31.82	10115	
APR	291967	9228873	31.61	9732	
MAY	299389	9464400	31.61	9658	
JUN	303922	9423861	31.01	10131	
JUL	303778	9414941	30.99	9799	
AUG	291901	8845250	30.30	9416	
SEPT	280586	8499013	30.29	9353	
OCT	296005	8867207	29.96	9540	
NOV	278295	8337339	29.96	9276	
DEC81	276079	8412075	30.47	8906	
SUM/YR	3549849	101933624	28.71	9726	
JAN82	267279	7919467	29.63	8622	
FEB	235585	6979400	29.63	8414	
MAR	260509	7459420	28.63	8404	
APR	246431	6801670	27.60	8214	
MAY	257638	7134874	27.69	8311	
JUN	246815	6670209	27.03	8227	
JUL	265730	7495356	28.21	8572	
AUG	265730	7459576	28.07	8572	
SEPT	270196	7612179	28.17	9007	
OCT	257587	7231380	28.07	8309	
NOV	259357	7338933	28.30	8645	
DEC82	NA	NA	NA	NA	
SUM/11	2832855	80102464	28.28	8456	

TABLE II-A-3

TRANS ALASKA PIPELINE TARIFF, $/barrel

OWNER	OWNERSHIP	FERC RATE 8/20/77	FERC RATE 1/1/82	FERC RATE 9/1/82	APUC FM ANS TO GVEA P/L	
EXXON	.203378	6.27	5.30	5.30	3.76	(A)
SOHIO	.333363	6.16	6.16	6.16	3.70	(A)
ARCO	.213547	6.04	6.04	6.04	3.63	(A)
UNION	.01356	6.09	6.09	6.09	3.66	(A)
MOBIL	.040845	6.31	6.31	6.31	3.67	(B)
AMERADA HESS	.015	6.44	6.44	6.44	3.78	(B)
BP	.166745	6.35	6.35	5.40	3.54	(B)
PHILLIPS	.013561	6.22	6.22	6.22	3.86	(B)
sum/average	.999999	6.20	6.00	5.84	3.67	

Note (a)APUC Docket P77-8/11
(b)APUC Docket P78-5

LEGEND FOR TABLES II-A-4 a thru c

Decontrol — the volume ratio of that oil sold at market determined price to total.

Control — the volume ratio of that oil sold at the Federal DOE determined price to total.

FIELD — the cost to pay for operating the field and collection system.

control — the Federal DOE determined price of ANS oil at Pump station #1.

decontr — the market determined weighted average price for the oil, as reported by each producer.

Ex-"B" — the weighted average price paid by North Pole Refining under their State contract.

ANS-ave — the weighted (under DOE controls) total price for ANS crude oil with decontrol and control price.

"b" ave — the weighted (under DOE controls) total price paid by NPR to the State of Alaska.

TAPS-NP — the TAPS tariff to GVEA pipeline connection at North Pole.

pl loss — the approximate value of the oil used by TAPS as fuel and assessed to each shipper on a volume basis.

GVEA pl — the GVEA pipeline tariff to transport oil from TAPS to the NPR refinery.

ANS@npr — the total Exhibit-B cost of ANS crude oil delivered to the NPR refinery gate, dollars per barrel.

@np c/g — the total Exhibit-B cost of ANS crude oil delivered to refinery gate, cents per gallon.

TAPSval — the TAPS tariff from Pump Station #1 to tanker at Valdez.

pl loss — as above.

ANS@val — the weighted average price of ANS oil at Valdez, dollars per barrel.

@va c/g — the weighted average price of ANS oil at Valdez, cents per gallon.

TABLE II-A-4a

ANS average prices at PS#1, NPR, and Valdez
$/b

	JAN82	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC82
Federal controlled price ratio												
Decontrol	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Control	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FIELD control	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
decontr	21.13	19.52	18.42	18.78	19.02	20.29	20.24	20.37	20.34	20.33	19.97	NA
Ex-'B'	21.43	20.15	18.98	19.01	19.14	20.87	20.87	21.06	20.82	20.83	20.30	NA
ANS-ave	21.13	19.52	18.42	18.78	19.02	20.29	20.24	20.37	20.34	20.33	19.97	NA
'b' ave	21.43	20.15	18.98	19.01	19.14	20.87	20.87	21.06	20.82	20.83	20.30	NA
TAPS-NP	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67
pl loss	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
GVEA pl	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
ANS@npr	25.28	24.00	22.83	22.86	22.99	24.72	24.72	24.91	24.67	24.68	24.15	NA
@np c/g	60.19	57.14	54.36	54.43	54.74	58.86	58.86	59.31	58.74	58.76	57.50	NA
TAPSval	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	5.84	5.84	5.84	5.84
pl loss	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
ANS@val	27.23	25.62	24.52	24.88	25.12	26.39	26.34	26.47	26.28	26.27	25.91	NA
@va c/g	64.83	61.00	58.38	59.24	59.81	62.83	62.71	63.02	62.57	62.54	61.69	NA

See Legend for explanation of terms.

TABLE II-A-4b

----------ANS average prices at PS#1, NPR, and Valdez----------
$/b

	JAN81	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC81
Decontrol	0.60	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Control	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FIELD	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
ANS-dc	24.92	25.64	25.61	25.13	23.88	23.24	23.17	22.65	22.05	22.14	22.04	21.86
ANS-con	14.99											
Ex-'B'	25.48	26.29	26.22	25.76	24.23	23.74	23.66	23.06	22.27	22.33	22.22	22.00
ANS-ave	20.93	25.64	25.61	25.13	23.88	23.24	23.17	22.65	22.05	22.14	22.04	21.86
'b' ave	21.26	26.29	26.22	25.76	24.23	23.74	23.66	23.06	22.27	22.33	22.22	22.00
TAPS-NP	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67
pl loss	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
GVEA pl	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
ANS@npr	25.11	30.14	30.07	29.61	28.08	27.59	27.51	26.91	26.12	26.18	.07	25.85
@np c/g	59.79	71.76	71.60	70.50	66.86	6 .69	65.50	64.07	62.19	62.33	2.07	61.55
TAPSval	6.20	6.20	6.20	6.20	6.20	6.20	6.20	6.20	6.20	6.20	6.20	6.20
pl loss	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
ANS@val	27.23	31.94	31.91	31.43	30.18	29.54	29.47	28.9	28.35	28.44	28.34	28.16
@va c/g	64.83	76.05	75.98	74.83	71.86	70.33	70.17	68.93	67.50	67.71	67.48	67.05

TABLE II-A-4c

----------ANS average prices at PS#1, NPR, and Valdez----------
$/b

	JAN80	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC80
Decontrol	0.05	0.09	0.14	0.18	0.23	0.28	0.32	0.37	0.41	0.46	0.51	0.55
Control	0.95	0.91	0.86	0.82	0.77	0.72	0.68	0.63	0.59	0.54	0.49	0.45
FIELD	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	55	0.55	0.55	0.55
ANS-de	24.19	24.71	25.07	24.31	23.09	22.97	21.62	21.55	21.53	20.84	22.25	24.13
ANS-con	13.66	13.75	13.85	13.95	14.03	14.16	14.27	14.38	14.50	14.62	14.77	14.87
Ex-'B'	24.81	25.04	25.40	25.44	25.40	25.21	22.85	22.56	22.60	21.27	22.90	24.54
ANS-ave	14.14	14.76	15.40	15.86	16.11	16.59	16.64	17.02	17.41	17.48	18.55	19.98
'b' ave	14.17	14.79	15.44	16.06	16.65	17.21	17.03	17.39	17.85	17.68	18.88	20.21
TAPS-NP	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67
pl loss	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
GVEA pl	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
ANS@npr	18.02	18.64	19.29	19.91	20.50	21.06	20.88	21.24	21.70	21.53	22.73	24.06
@np c/g	42.91	44.38	45.94	47.41	48.80	50.14	49.72	50.57	51.67	51.26	54.13	57.28
TAPSval	6.20	6.20	6.20	6.20	6.20	6.20	6.20	6.20	6.20	6.20	6.20	6.20
pl loss	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
ANS@val	20.44	21.06	21.70	22.16	22.41	22.89	22.94	23.32	23.71	23.78	24.85	26.28
@va c/g	48.44	49.90	51.42	52.51	53.13	54.27	54.37	55.28	56.22	56.38	58.94	62.34

LEGEND FOR TABLES II-B-1a/c AND TABLES II-B-2a/c

general and medium marine freight rates

general — refers to the general purpose marine tanker Worldscale designation.
MEDIUM — refers to the medium marine tanker Worldscale designation.
MOGAS — refers to Motor Gasoline at 6.08 pounds per gallon.
CRUDE OIL — refers to Crude Oil at 7.45 pounds per gallon.
KEROSENE — refers to kerosene derived fuels such as heating oil or Jet A-1, the average weight used is 6.83 pounds per gallon.

Following are port codes, where the "port" is a region defined in Worldscale tariff:

Ana	Anacortes, Washington
Anc	Anchorage, Alaska
Dri	Drift River, Alaska: terminal of the Cook Inlet pipeline
DUT	Dutch Harbor, Alaska
Hou	Houston, Texas
KET	Ketchikan, Alaska
LA	Los Angeles, California
Nik	Nikiski, Alaska
Sang	Sanga Sanga, Indonesia
SF	San Francisco, California
Val	Valdez, Alaska

TABLE II-B-1a

ALASKA MARINE PETROLEUM FREIGHT RATES FOR 1982

	JAN82	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
generalTANKER CRUDE OIL TRANSPORTATION, $/BARREL									(312.98 lbs/bbl)		
Val-Ana	1.00	1.03	0.99	0.94	0.94	0.91	0.99	0.96	0.94	0.92	0.96
Val-SF	1.29	1.32	1.27	1.21	1.21	1.17	1.27	1.23	1.21	1.18	1.23
Val-LA	1.47	1.51	1.45	1.38	1.38	1.34	1.45	1.41	1.39	1.35	1.41
Val-Hou	4.75	4.85	4.68	4.49	4.49	4.38	4.63	4.50	4.45	4.34	4.51
Dri-Ana	1.01	1.03	0.99	0.95	0.95	0.92	0.99	0.96	0.95	0.92	0.96
Dri-SF	1.28	1.31	1.26	1.20	1.20	1.17	1.26	1.22	1.21	1.17	1.23
Dri-LA	1.47	1.51	1.45	1.38	1.38	1.34	1.45	1.41	1.38	1.35	1.41
Nik-SF	1.29	1.32	1.27	1.21	1.21	1.18	1.27	1.23	1.21	1.18	1.23
Nik-LA	1.48	1.51	1.45	1.39	1.39	1.35	1.45	1.41	1.39	1.35	1.41
NIK-VAL	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41
DRI-NIK	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
SangNik	3.71	3.80	3.65	3.48	3.48	3.39	3.57	3.47	3.42	3.32	3.47
generalTANKER MOGAS TRANSPORTATION RATES, CENTS/GALLON									(255.4 lbs/bbl)		
KET-NIK	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
Ket-Ana	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Ket-SF	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
Ket-LA	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73
ANC-NIK	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51
Anc-Ana	2.11	2.16	2.08	1.98	1.98	1.93	2.08	2.02	1.99	1.93	2.02
Anc-SF	2.62	2.68	2.58	2.46	2.46	2.39	2.58	2.51	2.47	2.40	2.51
Anc-LA	2.99	3.06	2.94	2.81	2.80	2.73	2.94	2.86	2.82	2.74	2.86
DUT-NIK	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
DUT-SEA	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93
Dut-SF	2.75	2.81	2.70	2.58	2.57	2.51	2.70	2.62	2.58	2.51	2.62
Dut-LA	3.09	3.16	3.04	2.90	2.89	2.82	3.04	2.95	2.91	2.83	2.95
generalTANKER KEROSENE TRANSPORTATION RATES, CENTS/GALLON									(287.0 lbs/bbl)		
KET-NIK	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38
Ket-Ana	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
Ket-SF	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67
Ket-LA	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94
ANC-NIK	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57
Anc-Ana	2.37	2.43	2.34	2.23	2.22	2.17	2.34	2.27	2.24	2.17	2.27
Anc-SF	2.95	3.02	2.90	2.77	2.76	2.69	2.90	2.82	2.77	2.70	2.82
Anc-LA	3.36	3.44	3.30	3.15	3.15	3.07	3.31	3.21	3.16	3.08	3.21
DUT-NIK	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
DUT-SEA	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17
Dut-SF	3.09	3.16	3.03	2.90	2.89	2.82	3.04	2.95	2.90	2.82	2.95
Dut-LA	3.47	3.55	3.41	3.26	3.25	3.17	3.42	3.32	3.27	3.18	3.32

derived from: American Tanker Rate Schedule; Worldwide Tanker Nominal Freight Scale

ALASKA MARINE PETROLEUM FREIGHT RATES FOR 1981

	JAN81	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC81
generalTANKER CRUDE OIL TRANSPORTATION, $/BARREL									(312.98 lbs/bbl)			
Val-Ana	1.05	1.10	1.08	1.08	1.05	1.03	0.99	0.96	0.95	0.91	0.94	0.91
Val-SF	1.35	1.41	1.39	1.39	1.36	1.32	1.28	1.24	1.22	1.17	1.21	1.18
Val-LA	1.51	1.59	1.56	1.56	1.52	1.49	1.46	1.41	1.39	1.34	1.39	1.34
Val-Hou	4.80	5.01	4.94	4.93	4.83	4.72	4.81	4.68	4.63	4.45	4.61	4.48
Dri-Ana	1.05	1.11	1.09	1.09	1.06	1.04	1.01	0.98	0.97	0.92	0.96	0.93
Dri-SF	1.34	1.41	1.39	1.38	1.35	1.32	1.28	1.24	1.22	1.17	1.22	1.18
Dri-LA	1.51	1.58	1.56	1.55	1.52	1.48	1.47	1.42	1.40	1.34	1.40	1.35
Nik-SF	1.35	1.41	1.39	1.39	1.36	1.32	1.29	1.25	1.23	1.18	1.23	1.19
Nik-LA	1.52	1.59	1.56	1.56	1.53	1.49	1.47	1.43	1.41	1.35	1.40	1.36
NIK-VAL	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38
DRI-NIK	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
SangNik	3.97	4.17	4.10	4.09	4.00	3.90	3.78	3.66	3.62	3.46	3.60	3.48
generalTANKER MOGAS TRANSPORTATION RATES,CENTS/GALLON									(255.4 lbs/bbl)			
KET-NIK	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11
Ket-Ana	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Ket-SF	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36
Ket-LA	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58
ANC-NIK	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
Anc-Ana	2.22	2.33	2.29	2.29	2.24	2.18	2.11	2.05	2.02	1.94	2.01	1.95
Anc-SF	2.75	2.89	2.84	2.84	2.78	2.71	2.62	2.54	2.51	2.40	2.50	2.42
Anc-LA	3.08	3.23	3.18	3.18	3.11	3.03	2.99	2.89	2.86	2.73	2.84	2.75
DUT-NIK	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
DUT-SEA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dut-SF	2.87	3.01	2.96	2.96	2.89	2.82	2.75	2.66	2.63	2.52	2.61	2.53
Dut-LA	3.16	3.32	3.27	3.26	3.19	3.11	3.08	2.99	2.95	2.82	2.93	2.84
generalTANKER KEROSENE TRANSPORTATION RATES, CENTS/GALLON									(287.0 lbs/bbl)			
KET-NIK	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
Ket-Ana	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Ket-SF	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53
Ket-LA	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77
ANC-NIK	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
Anc-Ana	2.50	2.62	2.58	2.57	2.52	2.45	2.38	2.30	2.27	2.18	2.26	2.19
Anc-SF	3.10	3.25	3.20	3.19	3.12	3.04	2.95	2.86	2.82	2.70	2.80	2.71
Anc-LA	3.46	3.63	3.57	3.57	3.49	3.40	3.35	3.25	3.21	3.07	3.19	3.09
DUT-NIK	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
DUT-SEA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dut-SF	3.22	3.38	3.33	3.32	3.25	3.17	3.09	2.99	2.95	2.83	2.94	2.84
Dut-LA	3.55	3.73	3.67	3.67	3.58	3.49	3.46	3.36	3.31	3.17	3.29	3.19

derived from: American Tanker Rate Schedule; Worldwide Tanker Nominal Freight Scale

TABLE II-B-1c

ALASKA MARINE PETROLEUM FREIGHT RATES FOR 1980

	JAN80	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC80
generalTANKER CRUDE OIL TRANSPORTATION, $/BARREL									(312.98 lbs/bbl)			
Val-Ana	1.09	1.18	1.05	1.04	1.04	1.03	0.97	1.01	0.98	0.97	0.99	1.03
Val-SF	1.35	1.46	1.31	1.29	1.29	1.28	1.22	1.27	1.24	1.23	1.25	1.29
Val-LA	1.56	1.68	1.50	1.48	1.49	1.47	1.41	1.48	1.44	1.42	1.44	1.50
Val-Hou	4.55	4.90	4.41	4.35	4.36	4.32	4.17	4.34	4.24	4.19	4.26	4.41
Dri-Ana	1.09	1.18	1.05	1.04	1.04	1.03	0.98	1.03	1.00	0.99	1.01	1.04
Dri-SF	1.33	1.44	1.29	1.27	1.27	1.26	1.22	1.27	1.24	1.22	1.24	1.29
Dri-LA	1.59	1.71	1.53	1.51	1.52	1.50	1.46	1.52	1.48	1.47	1.49	1.55
Nik-SF	1.34	1.45	1.30	1.28	1.28	1.27	1.23	1.28	1.25	1.24	1.26	1.30
Nik-LA	1.56	1.69	1.51	1.49	1.49	1.48	1.44	1.50	1.46	1.44	1.47	1.52
NIK-VAL	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
DRI-NIK	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
SangNik	3.73	4.03	3.61	3.55	3.56	3.53	3.58	3.73	3.64	3.59	3.66	3.79
generalTANKER MOGAS TRANSPORTATION RATES, CENTS/GALLON									(255.4 lbs/bbl)			
KET-NIK	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Ket-Ana	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Ket-SF	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31
Ket-LA	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54
ANC-NIK	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
Anc-Ana	2.28	2.47	2.21	2.17	2.18	2.16	2.05	2.14	2.09	2.06	2.10	2.18
Anc-SF	2.78	3.00	2.69	2.64	2.65	2.63	2.53	2.64	2.57	2.54	2.58	2.68
Anc-LA	3.18	3.43	3.07	3.03	3.04	3.01	2.90	3.03	2.95	2.92	2.97	3.08
DUT-NIK	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
DUT-SEA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dut-SF	2.87	3.10	2.78	2.73	2.74	2.72	2.63	2.75	2.68	2.65	2.69	2.79
Dut-LA	3.26	3.52	3.15	3.10	3.11	3.08	3.00	3.13	3.05	3.02	3.07	3.18
generalTANKER KEROSENE TRANSPORTATION RATES, CENTS/GALLON									(287.0 lbs/bbl)			
KET-NIK	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21
Ket-Ana	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ket-SF	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48
Ket-LA	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73
ANC-NIK	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51
Anc-Ana	2.56	2.77	2.48	2.44	2.45	2.43	2.31	2.41	2.35	2.32	2.36	2.45
Anc-SF	3.12	3.37	3.02	2.97	2.98	2.95	2.84	2.96	2.88	2.85	2.90	3.01
Anc-LA	3.57	3.86	3.45	3.40	3.41	3.38	3.26	3.41	3.32	3.28	3.33	3.46
DUT-NIK	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
DUT-SEA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dut-SF	3.22	3.49	3.12	3.07	3.08	3.05	2.96	3.09	3.01	2.97	3.02	3.14
Dut-LA	3.66	3.95	3.54	3.48	3.50	3.46	3.37	3.52	3.43	3.39	3.45	3.58

derived from: American Tanker Rate Schedule; Worldwide Tanker Nominal Freight Scale

ALASKA MARINE PETROLEUM FREIGHT RATES FOR 1980

	JAN80	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC80
MEDIUM TANKER CRUDE OIL TRANSPORTATION, $/BARREL (312.98 lbs/bbl)												
Val-Ana	0.91	1.08	0.88	0.81	0.81	0.78	0.71	0.71	0.73	0.74	0.76	0.82
Val-SF	1.12	1.34	1.09	1.01	1.00	0.97	0.90	0.90	0.92	0.94	0.95	1.03
Val-LA	1.30	1.54	1.25	1.16	1.15	1.12	1.04	1.04	1.07	1.08	1.10	1.19
Val-Hou	3.84	4.51	3.71	3.47	3.44	3.35	3.15	3.15	3.22	3.26	3.32	3.56
Dri-Ana	0.91	1.08	0.88	0.81	0.81	0.78	0.73	0.73	0.74	0.75	0.77	0.83
Dri-SF	1.11	1.32	1.07	0.99	0.98	0.96	0.90	0.90	0.92	0.93	0.95	1.03
Dri-LA	1.32	1.57	1.28	1.18	1.17	1.14	1.08	1.08	1.10	1.12	1.14	1.23
Nik-SF	1.12	1.33	1.08	1.00	0.99	0.97	0.91	0.91	0.93	0.94	0.96	1.04
Nik-LA	1.30	1.55	1.26	1.17	1.16	1.13	1.06	1.06	1.09	1.10	1.12	1.21
NIK-VAL	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
DRI-NIK	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
SangNik	3.11	3.69	3.00	2.79	2.76	2.68	2.64	2.64	2.71	2.74	2.79	3.02
MEDIUM TANKER MOGAS TRANSPORTATION RATES, CENTS/GALLON (255.4 lbs/bbl)												
KET-NIK	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Ket-Ana	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Ket-SF	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31
Ket-LA	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54
ANC-NIK	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
Anc-Ana	1.90	2.26	1.84	1.71	1.69	1.64	1.52	1.52	1.55	1.57	1.60	1.73
Anc-SF	2.31	2.75	2.23	2.07	2.05	2.00	1.86	1.86	1.91	1.93	1.97	2.13
Anc-LA	2.64	3.14	2.55	2.37	2.35	2.29	2.14	2.14	2.20	2.23	2.27	2.45
DUT-NIK	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
DUT-SEA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dut-SF	2.39	2.84	2.31	2.14	2.12	2.07	1.94	1.94	1.99	2.02	2.06	2.22
Dut-LA	2.71	3.22	2.62	2.43	2.41	2.34	2.22	2.22	2.27	2.30	2.35	2.53
MEDIUM TANKER KEROSENE TRANSPORTATION RATES, CENTS/GALLON (287.0 lbs/bbl)												
KET-NIK	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21
Ket-Ana	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ket-SF	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48
Ket-LA	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73
ANC-NIK	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51
Anc-Ana	2.14	2.54	2.06	1.92	1.90	1.85	1.70	1.70	1.75	1.77	1.80	1.95
Anc-SF	2.60	3.09	2.51	2.33	2.31	2.25	2.09	2.09	2.15	2.17	2.22	2.39
Anc-LA	2.97	3.53	2.87	2.67	2.64	2.57	2.41	2.41	2.47	2.50	2.55	2.75
DUT-NIK	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
DUT-SEA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dut-SF	2.69	3.19	2.59	2.41	2.39	2.32	2.18	2.18	2.24	2.27	2.31	2.50
Dut-LA	3.05	3.62	2.94	2.73	2.71	2.63	2.49	2.49	2.55	2.58	2.63	2.85

derived from: American Tanker Rate Schedule; Worldwide Tanker Nominal Freight Scale

ALASKA MARINE PETROLEUM FREIGHT RATES FOR 1981

	JAN81	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC81
MEDIUM TANKER CRUDE OIL TRANSPORTATION, $/BARREL (312.98 lbs/bbl)												
Val-Ana	0.90	0.91	0.81	0.80	0.76	0.72	0.77	0.71	0.67	0.69	0.68	0.69
Val-SF	1.16	1.17	1.05	1.03	0.98	0.93	0.99	0.92	0.86	0.89	0.87	0.89
Val-LA	1.30	1.31	1.18	1.16	1.09	1.05	1.14	1.05	0.98	1.01	1.00	1.02
Val-Hou	4.21	4.23	3.85	3.79	3.62	3.48	3.87	3.60	3.42	3.51	3.45	3.51
Dri-Ana	0.91	0.92	0.82	0.81	0.76	0.73	0.79	0.73	0.68	0.70	0.69	0.70
Dri-SF	1.16	1.16	1.04	1.03	0.97	0.93	1.00	0.92	0.86	0.89	0.88	0.89
Dri-LA	1.30	1.31	1.17	1.15	1.09	1.04	1.14	1.05	0.99	1.02	1.00	1.02
Nik-SF	1.16	1.17	1.05	1.03	0.98	0.93	1.01	0.93	0.87	0.90	0.88	0.90
Nik-LA	1.31	1.32	1.18	1.16	1.10	1.05	1.15	1.06	1.00	1.03	1.01	1.03
NIK-VAL	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38
DRI-NIK	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
SangNik	3.42	3.45	3.09	3.04	2.87	2.75	2.95	2.72	2.55	2.63	2.58	2.63
MEDIUM TANKER MOGAS TRANSPORTATION RATES, CENTS/GALLON (255.4 lbs/bbl)												
KET-NIK	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11
Ket-Ana	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Ket-SF	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36
Ket-LA	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58
ANC-NIK	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
Anc-Ana	1.92	1.93	1.73	1.70	1.61	1.54	1.65	1.52	1.43	1.47	1.45	1.47
Anc-SF	2.37	2.39	2.15	2.11	1.99	1.91	2.04	1.88	1.77	1.82	1.79	1.83
Anc-LA	2.66	2.67	2.40	2.36	2.23	2.13	2.33	2.14	2.02	2.08	2.04	2.08
DUT-NIK	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
DUT-SEA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dut-SF	2.47	2.49	2.23	2.19	2.08	1.98	2.14	1.97	1.85	1.91	1.88	1.91
Dut-LA	2.73	2.75	2.46	2.42	2.29	2.19	2.40	2.21	2.08	2.14	2.11	2.15
MEDIUM TANKER KEROSENE TRANSPORTATION RATES, CENTS/GALLON (287.0 lbs/bbl)												
KET-NIK	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
Ket-Ana	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Ket-SF	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53
Ket-LA	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77
ANC-NIK	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
Anc-Ana	2.15	2.17	1.94	1.91	1.81	1.73	1.85	1.71	1.60	1.65	1.62	1.66
Anc-SF	2.67	2.69	2.41	2.37	2.24	2.14	2.30	2.12	1.99	2.05	2.01	2.05
Anc-LA	2.98	3.00	2.70	2.65	2.51	2.39	2.62	2.41	2.27	2.33	2.29	2.34
DUT-NIK	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
DUT-SEA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dut-SF	2.78	2.80	2.51	2.47	2.33	2.23	2.41	2.22	2.08	2.15	2.11	2.15
Dut-LA	3.06	3.09	2.77	2.72	2.57	2.46	2.70	2.49	2.34	2.41	2.37	2.41

derived from: American Tanker Rate Schedule; Worldwide Tanker Nominal Freight Scale

TABLE II-B-2c
ALASKA MARINE PETROLEUM FREIGHT RATES FOR 1982

	JAN82	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
MEDIUM TANKER CRUDE OIL TRANSPORTATION, $/BARREL (312.98 lbs/bbl)											
Val-Ana	0.76	0.77	0.72	0.73	0.70	0.69	0.72	0.70	0.70	0.71	0.71
Val-SF	0.98	0.99	0.93	0.93	0.90	0.89	0.93	0.90	0.90	0.91	0.92
Val-LA	1.12	1.13	1.07	1.07	1.03	1.02	1.07	1.03	1.02	1.04	1.05
Val-Hou	3.73	3.76	3.58	3.58	3.46	3.45	3.54	3.43	3.42	3.47	3.49
Dri-Ana	0.77	0.77	0.73	0.73	0.70	0.70	0.73	0.70	0.70	0.71	0.72
Dri-SF	0.97	0.98	0.93	0.93	0.89	0.89	0.93	0.89	0.89	0.91	0.91
Dri-LA	1.12	1.13	1.06	1.07	1.02	1.02	1.06	1.03	1.02	1.04	1.05
Nik-SF	0.98	0.99	0.93	0.93	0.90	0.89	0.93	0.90	0.90	0.91	0.92
Nik-LA	1.12	1.13	1.07	1.07	1.03	1.03	1.07	1.03	1.03	1.05	1.05
NIK-VAL	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41
DRI-NIK	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
SangNik	2.82	2.84	2.69	2.69	2.58	2.57	2.63	2.53	2.53	2.57	2.58
MEDIUM TANKER MOGAS TRANSPORTATION RATES, CENTS/GALLON (255.4 lbs/bbl)											
KET-NIK	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
Ket-Ana	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Ket-SF	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
Ket-LA	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73
ANC-NIK	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51
Anc-Ana	1.60	1.62	1.53	1.53	1.47	1.47	1.53	1.47	1.47	1.49	1.50
Anc-SF	1.99	2.01	1.90	1.90	1.83	1.82	1.90	1.83	1.82	1.85	1.87
Anc-LA	2.27	2.29	2.16	2.17	2.08	2.07	2.16	2.09	2.08	2.12	2.13
DUT-NIK	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
DUT-SEA	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93
Dut-SF	2.08	2.10	1.99	1.99	1.91	1.90	1.99	1.92	1.91	1.94	1.95
Dut-LA	2.35	2.37	2.24	2.24	2.15	2.14	2.24	2.16	2.15	2.18	2.20
MEDIUM TANKER KEROSENE TRANSPORTATION RATES, CENTS/GALLON (287.0 lbs/bbl)											
KET-NIK	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38
Ket-Ana	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
Ket-SF	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67
Ket-LA	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94
ANC-NIK	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57
Anc-Ana	1.80	1.82	1.72	1.72	1.65	1.65	1.72	1.66	1.65	1.68	1.69
Anc-SF	2.24	2.26	2.13	2.14	2.05	2.04	2.13	2.06	2.05	2.08	2.10
Anc-LA	2.55	2.57	2.43	2.44	2.34	2.33	2.43	2.34	2.34	2.38	2.39
DUT-NIK	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
DUT-SEA	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17
Dut-SF	2.34	2.36	2.23	2.24	2.15	2.14	2.23	2.15	2.15	2.18	2.20
Dut-LA	2.63	2.66	2.51	2.52	2.42	2.41	2.51	2.42	2.41	2.45	2.47

derived from: American Tanker Rate Schedule; Worldwide Tanker Nominal Freight Scale

TABLE II-C-1

ALASKA RAILROAD PETROLEUM TARIFF SUMMARY, cents/100 lbs.

Effective Thru December 31, 1982

TARIFF/SUPPLEMENT			8-O	8-P	8-P/1	8-P/2	8-P/3	8-Q	8-q/1	8-R	8-S	8-T
EFFECTIVE MONTH			NOV	APR	MAY	JAN	MAR	MAY	JUN	AUG	DEC	JUL
DAY			02	07	21	01	03	04	25	09	09	06
YEAR		Volume	1979	1980	1980	1981	1981	1981	1981	1981	1981	1982
FAI fm NPR	#440	tankcar	31	33	33	35	36	36	38	38	38	40
	#440	20M+min	25	27	27	28	29	29	30	30	30	32
FAI fm ANC	#635	tankcar	147	157	157	165	170	170	179	179	179	188
or	#635	20M+min	127	136	136	143	147	147	154	154	154	162
ANC fm NPR	#635	7.5MMyr	NA	NA	NA	NA	NA	NA	NA	NA	NA	142
or	#635	10 MMyr	NA	NA	NA	NA	NA	NA	NA	NA	NA	134
Nenana fm ANC	#635	15 MMyr	97	104	104	109	112	112	118	118	118	124
	#635	20 MMyr	89	96	96	101	104	104	109	109	109	114
	#635	30 MMyr	NA	NA	NA	NA	NA	NA	NA	NA	96	101
Nenana fm NPR	#440	tankcar	57	61	61	64	66	66	69	69	69	72
	#440	20M+min	51	55	55	58	60	60	63	63	63	66
Palmer fm ANC	#555	tankcar	34	36	36	38	39	39	41	41	41	43
Palmer fm NPR	#440	tankcar	NA	NA	146	153	158	158	166	166	166	174
	#440	20M+min	NA	NA	126	132	136	136	143	143	143	150

Volume defines the size of shipment (a tankcar or minimum of 20,000 gallons) or the amount of petroleum products shipped annually, e.g. 7.5 million gallons (7.5MMyr).

TABLE II-C-2a
MOTOR GASOLINE
ARR TARIFF SUMMARY TARIFF TABLE LEGEND

origin/destination	item#	size	LEGEND
FAI fm NPR	#440	tankcar	col.1
	#440	20M+min	col.2
FAI fm ANC	#635	tankcar	col.3
or	#635	20M+min	col.4
ANC fm NPR	#635	7.5MMyr	col.5
or	#635	10 MMyr	col.6
Nenana fm ANC	#635	15 MMyr	col.7
	#635	20 MMyr	col.8
	#635	30 MMyr	col.9
Nenana fm NPR	#440	tankcar	col.10
	#440	20M+min	col.11
Palmer fm ANC	#555	tankcar	col.12
Palmer fm NPR	#440	tankcar	col.13
	#440	20M+min	col.14

MOGAS	JAN80	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC80
col.1	1.93	1.93	1.93	2.02	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05
col.2	1.55	1.55	1.55	1.65	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68
col.3	9.13	9.13	9.13	9.63	9.75	9.75	9.75	9.75	9.75	9.75	9.75	9.75
col.4	7.89	7.89	7.89	8.33	8.45	8.45	8.45	8.45	8.45	8.45	8.45	8.45
col.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
col.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
col.7	6.04	6.04	6.04	6.37	6.46	6.46	6.46	6.46	6.46	6.46	6.46	6.46
col.8	5.53	5.53	5.53	5.87	5.96	5.96	5.96	5.96	5.96	5.96	5.96	5.96
col.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
col.10	3.54	3.54	3.54	3.74	3.79	3.79	3.79	3.79	3.79	3.79	3.79	3.79
col.11	3.17	3.17	3.17	3.37	3.42	3.42	3.42	3.42	3.42	3.42	3.42	3.42
col.12	2.11	2.11	2.11	2.21	2.24	2.24	2.24	2.24	2.24	2.24	2.24	2.24
col.13	NA	NA	NA	NA	9.07	9.07	9.07	9.07	9.07	9.07	9.07	9.07
col.14	NA	NA	NA	NA	7.82	7.82	7.82	7.82	7.82	7.82	7.82	7.82

TABLE II-C-2b

MOGAS	JAN81	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC81
col.1	2.17	2.17	2.23	2.24	2.24	2.26	2.36	2.36	2.36	2.36	2.36	2.36
col.2	1.74	1.74	1.80	1.80	1.80	1.81	1.86	1.86	1.86	1.86	1.86	1.86
col.3	10.25	10.25	10.54	10.56	10.56	10.67	11.12	11.12	11.12	11.12	11.12	11.12
col.4	8.88	8.88	9.11	9.13	9.13	9.22	9.56	9.56	9.56	9.56	9.56	9.56
col.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
col.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
col.7	6.77	6.77	6.94	6.96	6.96	7.03	7.33	7.33	7.33	7.33	7.33	7.33
col.8	6.27	6.27	6.45	6.46	6.46	6.52	6.77	6.77	6.77	6.77	6.77	6.77
col.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.96
col.10	3.97	3.97	4.09	4.10	4.10	4.14	4.28	4.28	4.28	4.28	4.28	4.28
col.11	3.60	3.60	3.72	3.73	3.73	3.76	3.91	3.91	3.91	3.91	3.91	3.91
col.12	2.36	2.36	2.42	2.42	2.42	2.45	2.55	2.55	2.55	2.55	2.55	2.55
col.13	9.50	9.50	9.79	9.81	9.81	9.91	10.31	10.31	10.31	10.31	10.31	10.31
col.14	8.20	8.20	8.43	8.45	8.45	8.53	8.88	8.88	8.88	8.88	8.88	8.88

MOGAS	JAN82	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC82
col.1	2.36	2.36	2.36	2.36	2.36	2.36	2.46	2.48	2.48	2.48	2.48	NA
col.2	1.86	1.86	1.86	1.86	1.86	1.86	1.97	1.99	1.99	1.99	1.99	NA
col.3	11.12	11.12	11.12	11.12	11.12	11.12	11.58	11.67	11.67	11.67	11.67	NA
col.4	9.56	9.56	9.56	9.56	9.56	9.56	9.98	10.06	10.06	10.06	10.06	NA
col.5	NA	NA	NA	NA	NA	NA	NA	8.82	8.82	8.82	8.82	NA
col.6	NA	NA	NA	NA	NA	NA	NA	8.32	8.32	8.32	8.32	NA
col.7	7.33	7.33	7.33	7.33	7.33	7.33	7.64	7.70	7.70	7.70	7.70	NA
col.8	6.77	6.77	6.77	6.77	6.77	6.77	7.03	7.08	7.08	7.08	7.08	NA
col.9	5.96	5.96	5.96	5.96	5.96	5.96	6.22	6.27	6.27	6.27	6.27	NA
col.10	4.28	4.28	4.28	4.28	4.28	4.28	4.44	4.47	4.47	4.47	4.47	NA
col.11	3.91	3.91	3.91	3.91	3.91	3.91	4.07	4.10	4.10	4.10	4.10	NA
col.12	2.55	2.55	2.55	2.55	2.55	2.55	2.65	2.67	2.67	2.67	2.67	NA
col.13	10.31	10.31	10.31	10.31	10.31	10.31	10.73	10.81	10.81	10.81	10.81	NA
col.14	8.88	8.88	8.88	8.88	8.88	8.88	9.24	9.32	9.32	9.32	9.32	NA

TABLE II-C-3a

ARR TARIFF SUMMARY TARIFF TABLE LEGEND HEATING OIL AND DIESEL

origin/destination	item#	size	LEGEND
FAI fm NPR	#440	tankcar	col.1
	#440	20M+min	col.2
FAI fm ANC	#635	tankcar	col.3
or	#635	20M+min	col.4
ANC fm NPR	#635	7.5MMyr	col.5
or	#635	10 MMyr	col.6
Nenana fm ANC	#635	15 MMyr	col.7
	#635	20 MMyr	col.8
	#635	30 MMyr	col.9
Nenana fm NPR	#440	tankcar	col.10
	#440	20M+min	col.11
Palmer fm ANC	#555	tankcar	col.12
Palmer fm NPR	#440	tankcar	col.13
	#440	20M+min	col.14

HO/DSL	JAN80	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC80
col.1	2.15	2.15	2.15	2.26	2.29	2.29	2.29	2.29	2.29	2.29	2.29	2.29
col.2	1.73	1.73	1.73	1.84	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87
col.3	10.19	10.19	10.19	10.74	10.88	10.88	10.88	10.88	10.88	10.88	10.88	10.88
col.4	8.80	8.80	8.80	9.30	9.43	9.43	9.43	9.43	9.43	9.43	9.43	9.43
col.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
col.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
col.7	6.74	6.74	6.74	7.11	7.21	7.21	7.21	7.21	7.21	7.21	7.21	7.21
col.8	6.17	6.17	6.17	6.56	6.65	6.65	6.65	6.65	6.65	6.65	6.65	6.65
col.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
col.10	3.95	3.95	3.95	4.17	4.23	4.23	4.23	4.23	4.23	4.23	4.23	4.23
col.11	3.53	3.53	3.53	3.76	3.81	3.81	3.81	3.81	3.81	3.81	3.81	3.81
col.12	2.36	2.36	2.36	2.47	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
col.13	NA	NA	NA	NA	10.12	10.12	10.12	10.12	10.12	10.12	10.12	10.12
col.14	NA	NA	NA	NA	8.73	8.73	8.73	8.73	8.73	8.73	8.73	8.73

TABLE II-C-3b

HO/DSL	JAN81	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC81
col.1	2.43	2.43	2.49	2.50	2.50	2.52	2.63	2.63	2.63	2.63	2.63	2.63
col.2	1.94	1.94	2.01	2.01	2.01	2.02	2.08	2.08	2.08	2.08	2.08	2.08
col.3	11.44	11.44	11.76	11.78	11.78	11.91	12.41	12.41	12.41	12.41	12.41	12.41
col.4	9.91	9.91	10.17	10.19	10.19	10.29	10.67	10.67	10.67	10.67	10.67	10.67
col.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
col.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
col.7	7.55	7.55	7.75	7.76	7.76	7.85	8.18	8.18	8.18	8.18	8.18	8.18
col.8	7.00	7.00	7.19	7.21	7.21	7.28	7.55	7.55	7.55	7.55	7.55	7.55
col.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.65
col.10	4.44	4.44	4.57	4.57	4.57	4.62	4.78	4.78	4.78	4.78	4.78	4.78
col.11	4.02	4.02	4.15	4.16	4.16	4.20	4.37	4.37	4.37	4.37	4.37	4.37
col.12	2.63	2.63	2.70	2.70	2.70	2.73	2.84	2.84	2.84	2.84	2.84	2.84
col.13	10.60	10.60	10.93	10.95	10.95	11.06	11.51	11.51	11.51	11.51	11.51	11.51
col.14	9.15	9.15	9.41	9.43	9.43	9.52	9.91	9.91	9.91	9.91	9.91	9.91

HO/DSL	JAN82	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC82
col.1	2.63	2.63	2.63	2.63	2.63	2.63	2.75	2.77	2.77	2.77	2.77	NA
col.2	2.08	2.08	2.08	2.08	2.08	2.08	2.20	2.22	2.22	2.22	2.22	NA
col.3	12.41	12.41	12.41	12.41	12.41	12.41	12.93	13.03	13.03	13.03	13.03	NA
col.4	10.67	10.67	10.67	10.67	10.67	10.67	11.14	11.23	11.23	11.23	11.23	NA
col.5	NA	NA	NA	NA	NA	NA	NA	9.84	9.84	9.84	9.84	NA
col.6	NA	NA	NA	NA	NA	NA	NA	9.29	9.29	9.29	9.29	NA
col.7	8.18	8.18	8.18	8.18	8.18	8.18	8.5	8.59	8.59	8.59	8.59	NA
col.8	7.55	7.55	7.55	7.55	7.55	7.55	7.85	7.90	7.90	7.90	7.90	NA
col.9	6.65	6.65	6.65	6.65	6.65	6.65	6.94	7.00	7.00	7.00	7.00	NA
col.10	4.78	4.78	4.78	4.78	4.78	4.78	4.96	4.99	4.99	4.99	4.99	NA
col.11	4.37	4.37	4.37	4.37	4.37	4.37	4.54	4.57	4.57	4.57	4.57	NA
col.12	2.84	2.84	2.84	2.84	2.84	2.84	2.96	2.98	2.98	2.98	2.98	NA
col.13	11.51	11.51	11.51	11.51	11.51	11.51	11.97	12.06	12.06	12.06	12.06	NA
col.14	9.91	9.91	9.91	9.91	9.91	9.91	10.32	10.40	10.40	10.40	10.40	NA

LEGEND FOR TABLE III-D-1 AND TABLE III-D-2

Department of Revenue Motor Fuel Summary

This information is required under AS.43.40.010-100.

Taxed	Motor Fuels that are taxed by State.
Exempt	Motor Fuels that are exempt from State tax.
Av-Jet	Jet Fuels: JP-4, JP-5, Jet A-1, Jet B
av-gas	Aviation gasolines: 100/130, 80/87
hi-dsl	Diesel fuel used on highways
hi-gas	Motor gasoline used on highways
hi-oth	Either gasoline or diesel used on highways
mr-dsl	Marine diesel used by marine craft
mr-gas	Motor gasoline used by marine craft
mr-oth	Either gasoline or diesel used by marine craft
av-bond	Jet fuel that is foreign manufactured
unhidsl	Diesel that not used on highways
unhigas	Motor gasoline that is not used on highways

TABLE III-D-1

DEPT. OF REVENUE MOTOR FUEL REPORT SUMMARY, bpcd

	taxed							
	av-jet	av-gas	hi-dsl	hi-gas	hi-oth	mr-dsl	mr-gas	mr-oth
jan80	6377	402	3925	9985	8548	2051	59	0
feb	8850	515	3885	9234	7474	2589	50	3
mar	9752	685	3485	9651	6833	2985	88	8
apr	6141	825	4122	9955	8868	3779	226	3
may	9714	1022	3812	11276	6668	4051	456	3
jun	10280	1490	3881	11601	6862	5048	1029	21
jul	10953	2383	4405	13174	8701	5528	1570	16
aug	9578	1776	4061	12786	7104	5813	1112	4
sept	8206	1742	5728	12047	7050	4704	809	3
oct	9346	851	3639	10545	9293	6396	313	2
nov	4806	572	4698	10097	6420	3815	122	1
dec80	8341	476	4962	11596	7380	1843	51	1
sum	8540	1064	4215	11006	7604	4055	492	5
%	13.26	1.65	6.55	17.10	11.81	6.30	0.76	0.01
jan81	6257	481	6162	8889	8764	2290	92	1
feb	6952	579	6511	10240	8133	2295	42	0
mar	11799	715	6941	9813	7597	3299	89	0
apr	7457	1147	7999	11034	7387	4569	178	0
may	8664	1164	5912	11399	7402	3758	430	0
jun	8634	1967	4806	13434	4741	5750	1345	0
jul	12364	2452	13837	13530	1	7038	1428	0
aug	9167	1791	12414	13434	1	6001	963	0
sept	9445	1644	13374	13041	1	6134	848	0
oct	14642	1026	12168	11502	1	4700	206	0
nov	14211	730	15072	11201	3	4248	143	0
dec81	9534	499	14712	11269	1	2347	94	0
sum	9952	1186	10017	11570	3640	4377	490	0
%	15.08	1.80	15.18	17.53	5.52	6.63	0.74	0.00
jan82	18232	410	13426	10757	2	2152	65	0
feb	31211	426	14314	10800	2	2092	43	0
mar	22358	689	13099	11875	1	3368	88	0
apr	21538	749	15603	11944	1	4037	159	0
may	19229	1037	14911	12411	1	4852	447	0
jun	21749	1777	14941	15158	1	5814	1262	0
jul	22441	2149	15303	15652	0	6744	1328	0
aug	25164	1891	12967	14756	0	7598	1151	0
sept	23581	1349	17173	14540	0	6722	795	0
oct	NA	NA	NA	NA	NA	NA	NA	NA

TABLE III-D-2

DEPT. OF REVENUE MOTOR FUEL REPORT SUMMARY,. bpcd
continued, page two of two

	exempt								
	av-jet	av-gas	av-bond	hi-dsl	hi-gas	unhidsl	mr-dsl	mr-gas	unhigas
jan80	15845	8	3586	1488	722	7775	376	0	0
feb	19117	12	2722	1453	312	5755	354	3	0
mar	15339	22	3205	1068	264	5598	313	8	0
apr	15927	10	3940	1552	891	5113	342	3	0
may	9868	37	3424	4074	359	4919	301	3	0
jun	10331	95	4140	1799	1015	4426	368	4	0
jul	7383	55	8880	2009	512	6631	413	11	0
aug	13718	53	9965	1713	382	5933	406	11	0
sept	12600	42	9247	1414	337	6802	304	10	0
oct	11418	35	8866	872	955	6674	413	8	0
nov	11129	40	8236	493	290	7672	285	3	0
dec80	6772	24	7925	708	328	8346	309	4	0
sum	12417	36	6195	1557	531	6310	349	6	0
%	19.29	0.06	9.62	2.42	0.82	9.80	0.54	0.01	0.00
jan81	9246	12	6091	884	390	6630	278	2	0
feb	4463	22	6943	409	428	5931	279	4	0
mar	13929	35	6620	619	328	4717	296	7	0
apr	11072	25	6562	1156	409	4902	366	3	0
may	8928	42	6835	2590	851	5150	274	5	0
jun	10332	58	6867	3340	1021	7153	345	7	0
jul	11917	52	7171	1146	553	9564	492	7	0
aug	11694	62	6778	2472	870	3971	387	6	0
sept	11257	56	6404	2426	437	7349	349	16	0
oct	8318	30	7314	743	701	5051	300	5	0
nov	9844	28	3288	1030	377	7832	305	3	0
dec81	8018	27	3512	1013	727	5590	358	2	0
sum	9955	37	6197	1489	593	6148	336	6	0
%	15.09	0.06	9.39	2.26	0.90	9.32	0.51	0.01	0.00
jan82	3867	19	1325	1077	762	7444	43	4	0
feb	3549	32	539	1127	368	6782	23	0	0
mar	9402	28	0	686	341	7544	144	0	0
apr	7563	61	281	1877	333	6582	310	0	0
may	6341	23	208	1649	895	10175	179	0	0
jun	2380	63	236	1273	406	17402	255	0	0
jul	6429	68	236	3557	777	15925	180	0	478
aug	7386	52	0	3690	495	8826	165	1	427
sept	6780	46	0	2387	381	9225	278	14	490
oct	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE III-D-3

DEPARTMENT OF REVENUE MOTOR FUEL REPORT SUMMARY
barrels per calender day

	AV-JET	AV-GAS	MOGAS	DSL/HO	MOTOR TOTAL
jan80	25808	410	10767	24164	61148
feb	30689	527	9599	21513	62328
mar	28296	707	10011	20289	59303
apr	26008	836	11075	23779	61698
may	23006	1059	12094	23828	59987
jun	24752	1585	13650	22406	62392
jul	27217	2439	15266	27703	72624
aug	33261	1828	14292	25035	74416
sept	30053	1784	13203	26006	71046
oct	29631	886	11822	27288	69626
nov	24171	612	10512	23385	58681
dec80	23038	500	11979	23549	59067
sum	27152	1100	12035	24095	64381

	AV-JET	AV-GAS	MOGAS	DSL/HO	TOTAL
jan81	21594	493	9373	25009	56469
feb	18359	600	10714	23558	53231
mar	32347	750	10237	23469	66803
apr	25092	1172	11623	26379	64266
may	24427	1207	12685	25086	63405
jun	25833	2025	15807	26134	69799
jul	31451	2504	15518	32078	81551
aug	27640	1854	15272	25247	70013
sept	27106	1700	14342	29633	72781
oct	30275	1056	12415	22964	66709
nov	27343	758	11724	28490	68315
dec81	21064	526	12092	25036	58717
sum	26104	1223	12658	26094	66079

	AV-JET	AV-GAS	MOGAS	DSL/HO	TOTAL
jan82	23424	428	11588	24144	59585
feb	35299	458	11212	24340	71310
mar	31760	718	12304	24842	69624
apr	29382	810	12437	28408	71038
may	25778	1059	13754	31767	72357
jun	24365	1840	16827	39685	82717
jul	29106	2217	18235	41709	91267
aug	32550	1943	16831	33247	84571
sept	30361	1395	16221	35785	83761
oct	NA	NA	NA	NA	NA
nov	NA	NA	NA	NA	NA
dec82	NA	NA	NA	NA	NA

TABLE III-D-4

DEPARTMENT OF REVENUE MOTOR FUEL REPORT
cummulative bpcd by month

	AV-JET	AV-GAS	MOGAS	DSL/HO	MOTOR TOTAL
jan80	25808	410	10767	24164	61148
feb	28167	467	10202	22883	61719
mar	28211	548	10137	21999	60896
apr	27665	620	10370	22440	61095
may	26715	709	10721	22723	60869
jun	26391	854	11204	22671	61120
jul	26511	1084	11795	23403	62794
aug	27369	1179	12112	23611	64271
sept	27663	1245	12232	23873	65012
oct	27863	1209	12190	24220	65481
nov	27532	1155	12040	24145	64872
dec80	27152	1100	12035	24095	64381

	AV-JET	AV-GAS	MOGAS	DSL/HO	TOTAL
jan81	21594	493	9373	25009	56469
feb	20059	544	10009	24320	54932
mar	24292	615	10088	24027	59021
apr	24492	754	10471	24615	60332
may	24478	847	10926	24712	60963
jun	24703	1043	11735	24947	62428
jul	25690	1256	12288	25990	65224
aug	25938	1332	12669	25895	65835
sept	26067	1373	12853	26306	66598
oct	26496	1340	12808	25965	66609
nov	26572	1288	12711	26192	66763
dec81	26104	1223	12658	26094	66079

	AV-JET	AV-GAS	MOGAS	DSL/HO	TOTAL
jan82	23424	428	11588	24144	59585
feb	29060	443	11409	24237	65149
mar	29990	537	11717	24446	66690
apr	29338	606	11897	25436	67777
may	29004	699	12278	26736	68717
jun	28236	888	13032	28882	71038
jul	28363	1082	13793	30758	73996
aug	28897	1192	14181	31075	75345
sept	29058	1214	14405	31593	76270
oct	NA	NA	NA	NA	NA
nov	NA	NA	NA	NA	NA
dec82	NA	NA	NA	NA	NA

LEGEND
TABLES III-E-1 AND III-E-2

These refiner filings are required under Federal DOE reporting statutes.

110 PROPANE A hydrocarbon with a chemical composition of predominantly, C3H8.
200 MOGAS Includes all of the various grades of refined naphtha which by their composition are suitable for use as carburants in internal combustion engines.
310 KERO Means a relatively low freezing point distillate of the kerosene type and includes all kerosene products with an average gravity of 40.7 API and 10 percent to 90 percent distillation temperatures of 390 degrees F to 470 degrees F covered by ASTM D1655 specifications, and excluding JP-5 and other fuels meeting military specifications.
320 #2 HO Is No. 2 heating oil grade No. 2 as defined in ASTM D-396-71.
330 #2 DSL Is diesel fuel grade No. 2 as defined in ASTM D-975-71.
340 M-DIST Are Nos. 1 and 2 heating oils, Nos. 1-D and 2-D diesel fuels, kerosene, and aviation fuels not reported elsewhere.
410 Av-GAS includes all of the various grades of aviation gasoline as defined in ASTM D-910-70.
420 Jet A is a kerosene-type aviation fuel used in jet engines.
430 Jet B is a naphtha-type aviation fuel used in internal combustion engines.
520/40/50 #5,#6,Bunkr-C are residual fuel oils which are commonly known as Nos. 5 and 6 fuel oils, Bunker C respectively, and all other fuel oils which have a 50 percent boiling point over 700 degrees F in the ASTM D-86 standard distillation test.

bpcd

	110 PROPANE	200 MOGAS	310 KERO	320 #2 HO	330 #2 DSL	340 M-DIST	410 AV-GAS	420 JET-A	430 JET-B	520/40 #5,#6	550 BUNKR-C	TOTAL
JAN80	344	10479	3039	7854	5722	901	318	11892	2922	11699	0	55170
FEB	308	9339	2188	5976	4499	734	423	13387	3996	25290	0	66140
MAR	335	9419	1810	6138	4842	426	587	12788	4242	11429	323	52338
APR	124	10624	1674	4807	6834	78	715	12770	2323	19833	333	60121
MAY	302	11684	1168	5513	10278	321	926	14104	2937	23130	323	70685
JUN	322	12986	4218	4950	9093	90	1270	13056	3090	11968	333	61375
JUL	301	14798	4616	4928	11549	163	2023	16862	3364	22735	323	81660
AUG	260	13810	3665	5182	9888	120	1431	16857	9062	21808	323	82404
SEPT	277	12696	2688	6073	11578	276	1477	15915	7352	13683	333	72348
OCT	267	12858	2101	6097	9471	301	709	15262	8401	11554	323	67343
NOV	286	10015	1957	5135	5939	625	490	13970	2544	33928	333	75222
DEC80	338	11861	2962	6833	3947	694	406	14614	3735	10194	323	55906
SUM80	289	11729	2677	5795	7815	394	899	14299	4508	18046	273	66723
%	0.43	17.58	4.01	8.69	11.71	0.59	1.35	21.43	6.76	27.05	0.41	100.00

	PROPANE	MOGAS	KERO	#2 HO	#2 DSL	M-DIST	AV-GAS	JET-A	JET-B	#5,#6	BUNKR-C	TOTAL
JAN81	293	8755	2272	5551	3563	467	382	17179	2684	22075	323	63543
FEB	327	10269	2116	5247	8425	906	446	16142	2951	11566	357	58751
MAR	322	10394	1727	5176	5487	1003	576	16153	3870	23029	323	68066
APR	146	11126	1298	5567	6644	524	994	19173	2898	11544	333	60247
MAY	257	12285	2304	5214	8422	101	935	9969	1865	9713	323	51385
JUN	391	15561	3364	5604	12571	162	1556	20831	183	10510	0	70734
JUL	267	15206	7740	5542	7960	189	2110	26061	2744	16972	323	85115
AUG	195	14997	322	5967	10736	222	1481	24103	234	7761	323	66341
SEPT	276	15304	2556	5504	10742	288	1412	22364	939	19065	333	78782
OCT	326	11665	2032	5430	7852	509	903	29063	135	8627	323	66866
NOV	52	6741	2051	4778	5689	0	605	8655	946	1041	0	30558
DEC81	298	15599	2164	5277	6792	1341	524	21202	96	6145	323	59761
SUM81	263	12344	2501	5406	7892	476	997	19283	1622	12364	274	63419
%	0.41	19.46	3.94	8.52	12.44	0.75	1.57	30.41	2.56	19.49	0.43	100.00

	PROPANE	MOGAS	KERO	#2 HO	#2 DSL	M-DIST	AV-GAS	JET-A	JET-B	#5,#6	BUNKR-C	TOTAL
JAN82	415	10929	2964	6032	4218	699	13018	11348	96	19952	323	69994
FEB	418	10492	2453	5660	4161	642	461	22450	190	0	0	46927
MAR	404	11718	2441	6026	7129	624	704	26437	5746	15057	323	76607
APR	57	8658	1701	4921	6120	0	843	12146	957	0	0	35404
MAY	79	9304	3004	4780	8031	0	1072	11053	1002	0	0	38324
JUN	413	16483	2730	6604	9743	356	1850	24742	2257	10115	333	75625
JUL	2	12855	4973	3613	11182	0	2227	13372	996	0	0	49221
AUG	68	11727	3185	4774	11046	253	1949	16131	758	0	0	49892
SEPT	137	24123	2432	5833	16359	294	1401	27143	1657	10776	267	90423
OCT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Monthly CUMMULATIVE REFINERS, bpcd

TABLE III-E-2

	110 PROPANE	200 MOGAS	310 KEROSENE	320 #2 HO	330 #2DSL	340 OTHR-MID	410 AV-GAS	420 JET-A	430 JET-B	520/40 #5,#6	550 BUNKR-C	TOTAL
JAN80	344	10479	3039	7854	5722	901	318	11892	2922	11699	0	55170
FEB	326	9928	2628	6946	5131	821	368	12615	3441	18268	0	60472
MAR	329	9755	2349	6671	5032	686	443	12674	3714	15938	110	57701
APR	278	9970	2182	6209	5479	535	510	12698	3371	16904	165	58301
MAY	283	10320	1975	6067	6458	492	595	12984	3282	18174	197	60827
JUN	290	10759	2345	5883	6892	425	706	12996	3250	17151	220	60917
JUL	291	11347	2675	5744	7570	387	898	13559	3267	17963	235	63936
AUG	287	11660	2801	5672	7864	353	966	13978	4003	18452	246	66283
SEPT	286	11773	2789	5716	8271	345	1022	14190	4370	17930	255	66947
OCT	284	11884	2719	5755	8393	340	990	14299	4780	17282	262	66987
NOV	284	11716	2650	5699	8173	366	945	14269	4579	18772	269	67724
DEC80	289	11729	2677	5795	7815	394	899	14299	4508	18046	273	66723
JAN81	293	8755	2272	5551	3563	467	382	17179	2684	22075	323	63543
FEB	309	9473	2198	5407	5870	676	413	16686	2811	17088	339	61269
MAR	314	9791	2036	5327	5738	790	469	16503	3176	19134	333	63610
APR	272	10124	1851	5387	5965	724	600	17170	3106	17237	333	62770
MAY	269	10568	1944	5351	6469	596	669	15692	2852	15692	331	60432
JUN	289	11306	2180	5393	7480	524	816	16544	2409	14833	276	62140
JUL	286	11953	2993	5415	7551	475	1005	17935	2458	15146	283	65499
AUG	274	12341	2652	5485	7957	443	1066	18722	2175	14204	288	65607
SEPT	274	12667	2641	5487	8263	426	1104	19122	2039	14738	293	67055
OCT	280	12564	2579	5481	8221	434	1083	20136	1845	14115	296	67035
NOV	259	12041	2532	5418	7994	395	1040	19105	1764	12941	269	63759
DEC81	263	12344	2501	5406	7892	476	997	19283	1622	12364	274	63419
JAN82	415	10929	2964	6032	4218	699	13018	11348	96	19952	325	69994
FEB	416	10722	2722	5855	4191	672	7059	16617	140	10483	169	59047
MAR	412	11065	2625	5914	5203	656	4870	19999	2071	12059	222	65096
APR	323	10463	2394	5666	5432	492	3863	18036	1793	9044	167	57673
MAY	273	10225	2519	5484	5966	391	3290	16602	1630	7187	132	53700
JUN	296	11262	2554	5669	6592	385	3052	17951	1734	7672	166	57334
JUL	253	11495	2908	5369	7263	329	2931	17282	1626	6551	142	56148
AUG	230	11525	2943	5293	7746	319	2806	17135	1516	5715	123	55350
SEPT	220	12909	2887	5352	8692	316	2651	18295	1531	6271	139	59204
OCT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE III-F-1

RAILBELT AIRPORT JETFUEL SALE SUMMARIES
(derived from DOTPF fuel tax reports)

	--ANCHORAGE----------			--FAIRBANKS----------			--RAILBELT----	
YEAR	BPCD	% RAILBELT	GAIN	BPCD	% RAILBELT	GAIN	BPCD	GAIN
1977	15332	95.56	---	712	4.44	---	16044	---
1978a	17156	95.24	1824	858	4.76	146	18014	1970
1979	16960	87.28	-196	2472	12.72	1614	19432	1418
1980b	17410	80.65	450	4178	19.35	1706	21588	2156
1981c	17450	80.12	40	4331	19.88	153	21781	193
1982d	19924	84.70	2474	3600	15.30	-731	23524	1743

note: a. NPR begins jet A-1 sales fall 1978
b. NPR completes debottleneck, begins jet A-1 sales in ANC
c. Tesoro completes expansion before spring
d. Estimated from data thru October

TABLE III-F-2

JETFUEL POSTINGS ANCHORAGE & FAIRBANKS
(average monthly c/g)

	CTW-FAI	CTW-ANC	FAI-ANC
JAN80	81.83	87.04	-5.20
FEB	85.41	92.31	-6.91
MAR	87.75	92.70	-4.95
APR	89.27	92.70	-3.43
MAY	91.64	92.70	-1.06
JUN	95.40	94.70	0.70
JUL	98.25	98.96	-0.71
AUG	102.29	101.97	0.32
SEP	104.47	101.07	3.40
OCT	105.38	102.71	2.67
NOV	107.90	103.00	4.90
DEC80	108.53	104.39	4.14
JAN81	111.11	106.94	4.17
FEB	116.58	113.14	3.43
MAR	119.75	117.39	2.36
APR	124.20	120.00	4.20
MAY	124.20	120.00	4.20
JUN	124.20	120.00	4.20
JUL	124.20	120.00	4.20
AUG	124.20	120.00	4.20
SEP	124.20	120.00	4.20
OCT	126.01	120.00	6.01
NOV	126.20	120.00	6.20
DEC81	126.20	120.00	6.20
JAN82	126.20	120.00	6.20
FEB	126.20	120.00	6.20
MAR	126.20	119.93	6.27
APR	124.17	115.65	8.53
MAY	120.00	114.97	5.03
JUN	120.00	115.20	4.80
JUL	120.00	115.20	4.80
AUG	120.00	115.20	4.80
SEP	120.00	115.20	4.80
OCT	120.00	115.60	4.40
NOV	120.00	116.57	3.43
DEC82	120.00	116.70	3.30

CTW is consumer tank wagon price

TABLE III-G-1

BOROUGH AND CITY ASSESSED VALUE AND TAXES INSTATE REFINERS

	KENAI									FNSB+NP				
	CHEVRON					TESORO				NORTH POLE				
	assessed value					assessed value				assessed value				
YEAR	rate	land	plant	sum	taxes	land	plant	sum	taxes	rate	land	plant	sum	taxes
1963	NA	NA	NA	NA	NA									
1964	NA	NA	NA	NA	NA									
1965	NA	97	0	97	NA									
1966	NA	97	0	97	NA									
1967	NA	108	0	108	NA									
1968	NA	108	0	108	NA									
1969	5	108	0	108	1	0	0	0	0					
1970	5	108	0	108	1	0	0	0	0					
1971	8	105	0	105	1	0	0	0	0					
1972	7.4	105	0	105	1	0	0	0	0					
1973	6.4	105	0	105	1	250	15645	15895	102					
1974	7.6	1410	7852	9262	70	250	16005	16255	124					
1975	9.1	1824	12075	13899	126	284	22615	22899	208					
1976	8.8	1824	12075	13899	122	284	31105	31389	276					
1977	6.75	2350	12174	14524	98	320	31637	31957	216	10.9	291	0	291	3
1978	6.75	2350	12124	14474	98	320	33253	33573	227	13	291	30502	30793	400
1979	4.72	4700	13124	17824	84	569	42342	42911	203	11.60	291	30693	30983	362
1980	4.95	4700	13242	17942	89	569	42342	42911	212	10.2	434	32624	33058	337
1981	4.37	6345	14773	21118	92	853	95631	96484	422	7.5	434	39446	39880	299
1982	3.58	6345	15994	22339	80	853	101693	102546	367	8.4	564	39535	40099	337

notes: CHEVRON BEGAN PRODUCTION IN 1963; TAXES BEGAN 1974
TESORO BEGAN PRODUCTION IN 1969; TAXES BEGAN 1973
NORTH POLE BEGAN PRODUCTION IN 1977

Table III-H-1

RAILBELT DEDUCED PRODUCT DEMAND AND INSTATE REFINER SUPPLY
BPCD,1981

PRODUCT	ANC/WHTR IMPORTS	CHEVRON	other	TESORO	other	NPR	TOTAL
GASOLINE	820	0		9380	1150	0	10200
JP-4	1600	860		630		1480	4570
JET-B	0	0		0		1690	1690
AV-GAS	940	0		0		0	940
JET-A	3880	1360	910	9750	0	5100	20090
#1 HO/DSL/DFA	0	0	0	0		1550	1550
#2 HO/DSL	1170	0	740	1190	2280	2000	4360
#4 HO	0	0		0		620	620
ASPHALT,summer	0	630(a)		0		0	630
TOTAL	8410	2850	1650	20950	3430	12440	44650
CRUDE		12300		40180		41340	93820
fuel%= 1.6		190		640		660	1501
RESID		8720(b)		15160(b)		28240(c)	47669
%		71		38		68	51

-other indicates products sold instate (e.g. Valdez,Kodiak,Ketchikan,etc.)
(a) Chevron figures are annualized,refinery operated in batch mode
(b) indicates product produced instate and sold "outside"
(c) NPR returns this to TAPS

Table III-H-2

RAILBELT DEDUCED PRODUCT DEMAND AND INSTATE REFINER SUPPLY
BPCD, 1982

PRODUCT	ANC/WHTR IMPORTS	CHEVRON	---other	TESORO	---other	NPR	TOTAL
GASOLINE	620	0		10180	1330	0	10800
JP-4	630	830		990		2120	4570
JET-B						550	550
AV-GAS	710	0		0		0	710
JET-A	4030	1280	970	12620	0	5360	22970
#1 HO/DSL/DFA	0	0	0	0		1800	1800
#2 HO/DSL	140	0	710	1870	2040	2300(+340b)	4310
#4 HO	0	0		0		810	810
ASPHALT, summer	120(c)	710(a)		0		0	830
TOTAL	6250	2820	1680	25660	3370	12940(+340b)	47350
CRUDE		11800		45200		43020	100020
fuel%= 1.6		180		720		680	1580
RESID		8250(b)		15450(b)		29060(d)	51090
%		70		34		68	51

-other indicates products sold instate (e.g. Valdez, Kodiak, Ketchikan, etc.)
(a) Chevron figures are annualized, refinery operated in batch mode
(b) Indicates product produced instate and sold "outside"
(c) Union at Anchorage produces asphalt during the summer season
(d) NPR returns this to TAPS

TABLE IV-I-1a

FAIRBANKS PRICE ANALYSIS AND COMPARISON,1982,part one

	JAN82	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC82
FAIRBANKS RETAIL PRICES												
FHO1rtl	130.60	130.70	126.70	125.70	123.80	123.30	121.90	121.90	121.70	121.30	121.20	121.20
FHO2rtl	123.60	123.80	120.10	118.70	117.00	117.10	114.30	114.80	114.60	114.40	113.90	113.90
FAIRBANKS TERMINAL PRICES AVERAGE												
FHO1	119.10	119.10	115.45	114.10	111.78	110.10	109.70	110.72	110.95	110.95	110.95	110.95
FHO2	113.10	113.10	109.45	108.10	105.78	104.10	103.70	103.89	103.95	103.95	103.95	103.95
NORTH POLE REFINERY RACK PRICES												
FHO1 np	110.40	110.40	106.75	105.40	103.00	103.00	97.50	97.50	97.50	97.50	97.50	97.50
FHO2 np	105.40	105.40	101.75	100.40	98.00	98.00	92.50	92.50	92.50	92.50	92.50	92.50
FAIRBANKS RETAIL LESS TERMINAL PRICES												
FHO1	11.50	11.60	11.25	11.60	12.02	13.20	12.20	11.18	10.75	10.35	10.25	10.25
FHO2	10.50	10.70	10.65	10.60	11.22	13.00	10.60	10.91	10.65	10.45	9.95	9.95
FAIRBANKS TERMINAL LESS NPR LESS ALASKA RAILROAD INTO FAIRBANKS												
FHO1	6.62	6.62	6.62	6.62	6.70	5.02	10.00	11.01	11.23	11.23	11.23	11.23
FHO2	5.62	5.62	5.62	5.62	5.70	4.02	9.00	9.17	9.23	9.23	9.23	9.23
NORTH POLE REFINERY LESS CRUDE COSTS @ NPR												
FHO1	50.21	53.26	52.40	50.97	48.26	44.14	38.64	38.19	38.76	38.74	40.00	NA
FHO2	45.21	48.26	47.40	45.97	43.26	39.14	33.64	33.19	33.76	33.74	35.00	NA
FAIRBANKS RETAIL LESS CRUDE COST @ NPR												
FHO1	70.41	73.56	72.34	71.27	69.06	64.44	63.04	62.59	62.96	62.54	63.70	NA
FHO2	63.41	66.66	65.74	64.27	62.26	58.24	55.44	55.49	55.86	55.64	56.40	NA

Legend: FHO1 Fairbanks #1 heating oil
FHO2 Fairbanks #2 heating oil
np North .ole Refinery rack price
rtl retail

TABLE IV-I-1b

FAIRBANKS PRICE ANALYSIS AND COMPARISON,1981, part one

	JAN81	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC81
FAIRBANKS RETAIL PRICES												
FHO1rtl	117.80	124.20	127.20	127.10	127.10	127.10	127.10	127.20	127.20	130.60	130.50	130.50
FHO2rtl	111.00	117.40	120.60	120.70	120.60	120.60	120.70	120.80	120.60	124.20	123.20	123.60
FAIRBANKS TERMINAL PRICES AVERAGE												
FHO1	105.87	111.52	114.29	115.60	115.60	115.60	115.60	115.60	115.83	116.81	119.10	119.10
FHO2	100.37	106.04	108.79	110.10	110.10	110.10	110.10	110.10	110.10	112.81	113.10	113.10
NORTH POLE REFINERY RACK PRICES												
FHO1 np	95.48	103.25	106.63	107.40	104.40	104.40	104.40	104.40	104.40	110.11	110.40	110.40
FHO2 np	90.64	98.25	101.63	102.40	102.40	102.40	102.40	102.40	102.40	105.11	105.40	105.40
FAIRBANKS RETAIL LESS TERMINAL PRICES												
FHO1	11.93	12.68	12.91	11.50	11.50	11.50	11.50	11.60	11.37	11.79	11.40	11.40
FHO2	10.63	11.36	11.81	10.60	10.50	10.50	10.60	10.70	10.50	11.39	10.10	10.50
FAIRBANKS TERMINAL LESS NPR LESS ALASKA RAILROAD INTO FAIRBANKS												
FHO1	8.45	6.32	5.66	6.19	9.19	9.18	9.12	9.12	9.35	6.62	6.62	6.62
FHO2	7.79	5.85	5.16	5.69	5.69	5.68	5.62	5.62	5.62	5.62	5.62	5.62
NORTH POLE REFINERY LESS CRUDE COSTS @ NPR												
FHO1	35.69	31.49	35.03	36.90	37.54	38.71	38.90	40.33	42.21	47.78	48.33	48.85
FHO2	30.85	26.49	30.03	31.90	35.54	36.71	36.90	38.33	40.21	42.78	43.33	43.85
FAIRBANKS RETAIL LESS CRUDE COST @ NPR												
FHO1	58.01	52.44	55.60	56.60	60.24	61.41	61.60	63.13	65.01	68.27	68.43	68.95
FHO2	51.21	45.64	49.00	50.20	53.74	54.91	55.20	56.73	58.41	61.87	61.13	62.05

TABLE IV-I-1c

FAIRBANKS PRICE ANALYSIS AND COMPARISON,1980, part one

	JAN80	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC80
FAIRBANKS RETAIL PRICES												
FHO1rtl	84.20	87.00	90.70	90.90	98.20	98.30	101.90	106.80	109.80	109.80	112.80	114.30
FHO2rtl	79.10	81.70	85.10	85.10	92.70	93.00	96.30	101.00	103.30	103.50	105.60	107.30
FAIRBANKS TERMINAL PRICES AVERAGE												
FHO1	75.75	78.09	80.38	81.77	84.79	88.62	91.40	95.32	97.98	98.69	101.10	101.66
FHO2	71.37	73.72	76.00	77.39	80.42	84.15	86.78	90.60	92.89	93.50	95.60	96.16
NORTH POLE REFINERY RACK PRICES												
FHO1 np	67.98	70.28	72.15	72.15	74.86	79.15	82.60	87.50	90.50	90.50	93.50	95.50
FHO2 np	64.23	66.53	68.40	68.40	71.11	75.40	78.70	82.40	84.60	84.60	86.70	88.40
FAIRBANKS RETAIL LESS TERMINAL PRICES												
FHO1	8.45	8.91	10.32	9.13	13.41	9.68	10.50	11.58	11.83	11.11	11.70	12.64
FHO2	7.73	7.98	9.10	7.71	12.28	8.85	9.52	10.40	10.41	10.00	10.00	11.14
FAIRBANKS TERMINAL LESS NPR LESS ALASKA RAILROAD INTO FAIRBANKS												
FHO1	6.03	6.08	6.49	7.77	8.06	7.60	6.93	5.85	5.60	6.32	5.73	4.29
FHO2	5.41	5.45	5.87	7.15	7.44	6.88	6.20	6.32	6.42	7.03	7.03	5.89
NORTH POLE REFINERY LESS CRUDE COSTS @ NPR												
FHO1	25.07	25.91	26.21	24.74	26.06	29.01	32.88	36.93	38.83	39.24	39.37	38.22
FHO2	21.32	22.16	22.46	20.99	22.31	25.26	28.98	31.83	32.93	33.34	32.57	31.12
FAIRBANKS RETAIL LESS CRUDE COST @ NPR												
FHO1	41.29	42.62	44.76	43.49	49.40	48.16	52.18	56.23	58.13	58.54	58.67	57.02
FHO2	36.19	37.32	39.16	37.69	43.90	42.86	46.58	50.43	51.63	52.24	51.47	50.02

TABLE IV-I-2a

FAIRBANKS PRICE ANALYSIS AND COMPARISON, 1982 part two

	JAN82	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC82
FAIRBANKS RETAIL LESS ANCHORAGE RETAIL PRICES												
F-A HO1	2.10	1.50	-1.20	-1.00	-3.30	-3.60	-5.40	-5.80	-6.00	-4.40	-4.70	-4.70
F-A HO2	0.60	0.10	-2.70	-3.10	-4.10	-4.10	-7.30	-6.80	-6.00	-3.00	-3.70	-3.60
FAIRBANKS RETAIL LESS ANCHORAGE RETAIL LESS ARR												
F-A HO1	-5.45	-6.05	-8.75	-8.55	-10.35	-11.15	-13.25	-13.70	-13.90	-12.30	-12.60	-12.60
F-A HO2	-6.95	-7.45	-10.25	-10.65	-11.65	-11.65	-15.15	-14.70	-13.90	-10.90	-11.60	-11.50
FAIRBANKS TERMINAL LESS ANCHORAGE TERMINAL PRICES												
F-A HO1	7.72	7.75	4.37	6.21	3.64	1.85	1.45	1.64	1.48	1.50	0.42	-0.55
F-A HO2	7.72	7.75	6.71	7.20	5.14	3.35	2.95	3.14	2.98	3.00	2.22	1.70
FAIRBANKS TERMINAL LESS ANCHORAGE TERMINAL PRICES LESS ARR												
F-A HO1	0.17	0.20	-3.19	-1.35	-3.91	-5.70	-6.40	-6.27	-6.42	-6.40	-7.48	-8.45
F-A HO2	0.17	0.20	-0.85	-0.35	-2.41	-4.20	-4.90	-4.77	-4.92	-4.90	-5.68	-6.20
FAIRBANKS RETAIL MARKUP LESS ANCHORAGE RETAIL MARKUP												
F-A HO1	-5.62	-6.25	-5.57	-7.21	-6.94	-5.45	-6.85	-7.44	-7.48	-5.90	-5.12	-4.15
F-A HO2	-7.12	-7.65	-9.41	-10.30	-9.24	-7.45	-10.25	-9.94	-8.98	-6.00	-5.92	-5.30
NORTH POLE REFINERY PRICE LESS "OUTSIDE" RACKS, PLATT'S												
FHO2-SE	17.70	18.00	16.11	16.75	15.03	13.13	12.43	11.52	11.52	9.98	NA	NA
FHO2-SF	19.44	20.36	18.04	19.06	16.46	14.52	12.82	12.76	13.57	12.32	NA	NA
FHO2-LA	20.81	22.33	20.20	20.42	18.09	15.74	14.05	14.74	14.15	11.15	NA	NA
FHO2-HO	15.91	19.45	20.60	21.98	17.01	12.22	11.98	13.36	13.34	8.4	NA	NA
FAIRBANKS TERMINAL PRICE LESS OUTSIDE RACK LESS GENERAL MARINE RATES LESS ARR												
FHO2-SE	7.77	8.02	6.22	6.97	5.25	3.41	2.25	1.35	1.38	-0.09	NA	NA
FHO2-SF	8.94	9.79	7.59	8.74	6.14	4.28	2.07	2.04	2.89	1.72	NA	NA
FHO2-LA	9.89	11.34	9.35	9.71	7.38	5.12	2.90	3.62	3.09	0.17	NA	NA

LEGEND F-A Fairbanks less Anchorage price
SE Seattle, SF San Francisco, LA Los Angeles
HO1 #1 heating oil, HO2 #2 heating oil

TABLE IV-I-2b

FAIRBANKS PRICE ANALYSIS AND COMPARISON,1981,part two

	JAN81	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC81
FAIRBANKS RETAIL LESS ANCHORAGE RETAIL PRICES												
F-A HO1	1.30	1.40	2.40	1.90	0.30	-0.70	-1.10	-0.60	-0.60	2.40	1.30	1.70
F-A HO2	0.70	-0.60	0.30	-1.00	-1.70	-2.60	-2.80	-2.40	-2.60	1.90	-0.10	0.60
FAIRBANKS RETAIL LESS ANCHORAGE RETAIL LESS ARR												
F-A HO1	-5.70	-5.60	-4.79	-5.31	-6.91	-7.98	-8.65	-8.15	-8.15	-5.15	-6.25	-5.85
F-A HO2	-6.30	-7.60	-6.89	-8.21	-8.91	-9.88	-10.35	-9.95	-10.15	-5.65	-7.65	-6.95
FAIRBANKS TERMINAL LESS ANCHORAGE TERMINAL PRICES												
F-A HO1	6.68	7.62	7.64	8.08	6.62	6.20	5.20	5.20	5.20	7.91	9.43	7.45
F-A HO2	6.99	7.14	7.14	7.58	6.12	5.70	4.70	4.70	4.70	7.41	9.33	7.45
FAIRBANKS TERMINAL LESS ANCHORAGE TERMINAL PRICES LESS ARR												
F-A HO1	-0.32	0.62	0.45	0.87	-0.59	-1.08	-2.35	-2.35	-2.35	0.35	1.87	-0.10
F-A HO2	-0.01	0.14	-0.05	0.37	-1.09	-1.58	-2.85	-2.85	-2.85	-0.15	1.77	-0.10
FAIRBANKS RETAIL MARKUP LESS ANCHORAGE RETAIL MARKUP												
F-A HO1	-5.38	-6.22	-5.24	-6.18	-6.32	-6.90	-6.30	-5.80	-5.80	-5.51	-8.13	-5.75
F-A HO2	-6.29	-7.74	-6.84	-8.58	-7.82	-8.30	-7.50	-7.10	-7.30	-5.51	-9.43	-6.85
NORTH POLE REFINERY PRICE LESS "OUTSIDE" RACKS,PLATT'S												
FHO2-SE	16.50	17.62	15.56	15.07	14.45	14.45	11.60	15.55	14.45	17.16	17.35	17.55
FHO2-SF	19.24	21.38	18.03	17.05	16.07	15.83	15.24	15.88	15.80	18.97	19.40	19.32
FHO2-LA	20.29	21.32	16.05	16.85	16.06	16.22	16.71	16.54	16.25	19.39	20.12	20.38
FHO2-HO	8.48	6.17	6.29	7.60	7.60	10.67	12.35	12.83	12.86	16.17	16.06	15.10
FAIRBANKS TERMINAL PRICE LESS OUTSIDE RACK LESS GENERAL MARINE RATES LESS ARR												
FHO2-SE	7.01	8.00	5.79	5.29	4.73	4.72	1.67	5.69	4.62	7.43	7.53	7.81
FHO2-SF	9.15	11.14	7.64	6.65	5.74	5.51	4.74	5.47	5.43	8.72	9.04	9.05
FHO2-LA	9.83	10.69	5.28	6.07	5.36	5.54	5.80	5.73	5.49	8.76	9.37	9.73

TABLE IV-I-2c

FAIRBANKS PRICE ANALYSIS AND COMPARISON,1980,part two

	JAN80	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC80
FAIRBANKS RETAIL LESS ANCHORAGE RETAIL PRICES												
F-A HO1	NA	-12.30	-11.30	-12.30	-7.80	NA	-7.40	-2.50	0.50	-1.50	2.50	-0.30
F-A HO2	NA	-13.40	-13.00	-14.10	-7.80	NA	-6.80	-3.50	-1.20	-1.00	1.10	-0.70
FAIRBANKS RETAIL LESS ANCHORAGE RETAIL LESS ARR												
F-A HO1	NA	-18.47	-17.47	-18.86	-14.45	NA	-14.05	-9.15	-6.15	-8.15	-4.15	-6.95
F-A HO2	NA	-19.57	-19.17	-20.66	-14.45	NA	-13.45	-10.15	-7.85	-7.65	-5.55	-7.35
FAIRBANKS TERMINAL LESS ANCHORAGE TERMINAL PRICES												
F-A HO1	-4.31	-6.71	-4.62	-3.23	-2.26	-0.53	-2.85	0.83	4.04	3.18	4.70	4.77
F-A HO2	-4.68	-7.09	-5.00	-3.61	-2.38	-0.75	-3.22	0.46	3.46	3.50	5.45	5.52
FAIRBANKS TERMINAL LESS ANCHORAGE TERMINAL PRICES LESS ARR												
F-A HO1	-10.48	-12.88	-10.79	-9.79	-8.91	-7.19	-9.50	-5.82	-2.61	-3.47	-1.95	-1.88
F-A HO2	-10.85	-13.26	-11.17	-10.17	-9.03	-7.40	-9.88	-6.19	-3.20	-3.16	-1.20	-1.13
FAIRBANKS RETAIL MARKUP LESS ANCHORAGE RETAIL MARKUP												
F-A HO1	NA	-5.59	-6.68	-9.07	-5.54	NA	-4.55	-3.33	-3.54	-4.68	-2.20	-5.07
F-A HO2	NA	-6.31	-8.00	-10.49	-5.42	NA	-3.58	-3.96	-4.66	-4.50	-4.35	-6.22
FAIRBANKS TERMINAL PRICE AVERAGE LESS "OUTSIDE" RACK PRICE, PLATT'S												
FHO2-SE	-5.15	NA	-5.48	-7.96	-4.93	-1.11	1.84	5.73	9.51	12.32	14.70	13.77
FHO2-SF	-8.67	NA	-6.10	-3.40	0.44	4.05	6.53	10.80	13.73	14.10	16.08	16.57
FHO2-LA	-8.67	NA	-6.10	-3.40	0.44	4.05	6.53	10.80	13.73	14.10	16.08	16.57
FHO2-HO	-6.90	NA	-2.00	-1.37	1.07	4.61	6.70	10.52	12.82	13.32	13.62	NA
FAIRBANKS TERMINAL PRICE LESS OUTSIDE RACK LESS GENERAL MARINE RATES LESS ARR												
FHO2-SE	-13.88	NA	-14.13	-16.96	-14.04	-10.19	-7.13	-3.33	0.51	3.35	5.69	4.67
FHO2-SF	-17.96	NA	-15.29	-12.93	-9.20	-5.56	-2.97	1.18	4.19	4.60	6.53	6.91
FHO2-LA	-18.41	NA	-15.72	-13.35	-9.63	-5.98	-3.39	0.74	3.76	4.17	6.09	6.45

TABLE IV-I-3a

FAIRBANKS #1 HO/DSL PRICE COMPOSITION
cents/gallon

	CRUDE AT NPR	NPR MU	ARR TO FAI	-CTW- MU	DISTR. MU	RETAIL PRICE
JAN80	42.91	25.07	1.73	6.03	8.45	84.20
FEB	44.38	25.91	1.73	6.08	8.91	87.00
MAR	45.94	26.21	1.73	6.49	10.32	90.70
APR	47.41	24.74	1.84	7.77	9.13	90.90
MAY	48.80	26.06	1.87	8.06	13.41	98.20
JUN	50.14	29.01	1.87	7.60	9.68	98.30
JUL	49.72	32.88	1.87	6.93	10.50	101.90
AUG	50.57	36.93	1.87	5.85	11.58	106.80
SEPT	51.67	38.83	1.87	5.60	11.83	109.80
OCT	51.26	39.24	1.87	6.32	11.11	109.80
NOV	54.13	39.37	1.87	5.73	11.70	112.80
DEC80	57.28	38.22	1.87	4.29	12.64	114.30
JAN81	59.79	35.69	1.94	8.45	11.93	117.80
FEB	71.76	31.49	1.94	6.32	12.68	124.20
MAR	71.60	35.03	2.01	5.66	12.91	127.20
APR	70.50	36.90	2.01	6.19	11.50	127.10
MAY	66.86	37.54	2.01	9.19	11.50	127.10
JUN	65.69	38.71	2.02	9.18	11.50	127.10
JUL	65.50	38.90	2.08	9.12	11.50	127.10
AUG	64.07	40.33	2.08	9.12	11.60	127.20
SEPT	62.19	42.21	2.08	9.35	11.37	127.20
OCT	62.33	47.78	2.08	6.62	11.79	130.60
NOV	62.07	48.33	2.08	6.62	11.40	130.50
DEC81	61.55	48.85	2.08	6.62	11.40	130.50
JAN82	60.19	50.21	2.08	6.62	11.50	130.60
FEB	57.14	53.26	2.08	6.62	11.60	130.70
MAR	54.36	52.40	2.08	6.62	11.25	126.70
APR	54.43	50.97	2.08	6.62	11.60	125.70
MAY	54.74	48.26	2.08	6.70	12.02	123.80
JUN	58.86	44.14	2.08	5.02	13.20	123.30
JUL	58.86	38.64	2.20	10.00	12.20	121.90
AUG	59.31	38.19	2.22	11.01	11.18	121.90
SEPT	58.74	38.76	2.22	11.23	10.75	121.70
OCT	58.76	38.74	2.22	11.23	10.35	121.30
NOV	57.50	40.00	2.22	11.23	10.25	121.20
DEC82	NA	NA	2.22	11.23	10.25	121.20

Legend MU is markup
NPR is North Pole Refinery
ARR is the Alaska Railroad
CTW is consumer tank wagon price
DISTR is home distributor price

TABLE IV-I-3b

FAIREANKS #2 HO/DSL PRICE COMP[illegible]
cents/gallon

	CRUDE AT NPR	NPR MU	ARR TO FAI	-CTW- MU	DISTR. MU	RETAIL PRICE
JAN80	42.91	21.32	1.73	5.41	7.73	79.10
FEB	44.38	22.16	1.73	5.45	7.98	81.70
MAR	45.94	22.46	1.73	5.87	9.10	85.10
APR	47.41	20.99	1.84	7.15	7.71	85.10
MAY	48.80	22.31	1.87	7.44	12.28	92.70
JUN	50.14	25.26	1.87	6.88	8.85	93.00
JUL	49.72	28.98	1.87	6.20	9.52	96.30
AUG	50.57	31.83	1.87	6.32	10.40	101.00
SEPT	51.67	32.93	1.87	6.42	10.41	103.30
OCT	51.26	33.34	1.87	7.03	10.00	103.50
NOV	54.13	32.57	1.87	7.03	10.00	105.60
DEC80	57.28	31.12	1.87	5.89	11.14	107.30
JAN81	59.79	30.85	1.94	7.79	10.63	111.00
FEB	71.76	26.49	1.94	5.85	11.36	117.40
MAR	71.60	30.03	2.01	5.16	11.81	120.60
APR	70.50	31.90	2.01	5.69	10.60	120.70
MAY	66.86	35.54	2.01	5.69	10.50	120.60
JUN	65.69	36.71	2.02	5.68	10.50	120.60
JUL	65.50	36.90	2.08	5.62	10.60	120.70
AUG	64.07	38.33	2.08	5.62	10.70	120.80
SEPT	62.19	40.21	2.08	5.62	10.50	120.60
OCT	62.33	42.78	2.08	5.62	11.39	124.20
NOV	62.07	43.33	2.08	5.62	10.10	123.20
DEC81	61.55	43.85	2.08	5.62	10.50	123.60
JAN82	60.19	45.21	2.08	5.62	10.50	123.60
FEB	57.14	48.26	2.08	5.62	10.70	123.80
MAR	54.36	47.40	2.08	5.62	10.65	120.10
APR	54.43	45.97	2.08	5.62	10.60	118.70
MAY	54.74	43.26	2.08	5.70	11.22	117.00
JUN	58.86	39.14	2.08	4.02	13.00	117.10
JUL	58.86	33.64	2.20	9.00	10.60	114.30
AUG	59.31	33.19	2.22	9.17	10.91	114.80
SEPT	58.74	33.76	2.22	9.23	10.65	114.60
OCT	58.76	33.74	2.22	9.23	10.45	114.40
NOV	57.50	35.00	2.22	9.23	9.95	113.90
DEC82	NA	NA	2.22	9.23	9.95	113.90

TABLE IV-I-4a

FAIRBANKS #1 HO/DSL PRICE COMPOSITION BY COMPONENT

% OF CRUDE PRICE

	CRUDE @ AT NPR	NPR MU	ARR TO FAI	-CTW- MU	DISTR. MU	RETAIL PRICE
JAN80	100.00	58.42	4.04	14.06	19.70	196.22
FEB	100.00	58.38	3.90	13.70	20.07	196.04
MAR	100.00	57.06	3.77	14.14	22.47	197.44
APR	100.00	52.17	3.89	16.39	19.26	191.71
MAY	100.00	53.41	3.83	16.52	27.48	201.24
JUN	100.00	57.85	3.73	15.15	19.31	196.04
JUL	100.00	66.13	3.76	13.94	21.12	204.94
AUG	100.00	73.02	3.70	11.57	22.50	211.18
SEPT	100.00	75.13	3.62	10.84	22.88	212.48
OCT	100.00	76.55	3.65	12.32	21.68	214.20
NOV	100.00	72.74	3.46	10.58	21.62	208.39
DEC80	100.00	66.72	3.27	7.48	22.07	199.54
JAN81	100.00	59.69	3.25	14.14	19.95	197.01
FEB	100.00	43.88	2.70	8.81	17.68	173.07
MAR	100.00	48.93	2.80	7.91	18.03	177.67
APR	100.00	52.34	2.85	8.78	16.31	180.28
MAY	100.00	56.15	3.01	13.75	17.20	190.11
JUN	100.00	58.93	3.08	13.97	17.51	193.48
JUL	100.00	59.39	3.17	13.92	17.56	194.05
AUG	100.00	62.94	3.25	14.24	18.10	198.53
SEPT	100.00	67.87	3.34	15.04	18.28	204.53
OCT	100.00	76.65	3.34	10.62	18.91	209.52
NOV	100.00	77.86	3.35	10.67	18.37	210.24
DEC81	100.00	79.37	3.38	10.76	18.52	212.03
JAN82	100.00	83.42	3.45	11.00	19.11	216.98
FEB	100.00	93.20	3.64	11.59	20.30	228.73
MAR	100.00	96.40	3.83	12.18	20.69	233.09
APR	100.00	93.65	3.82	12.16	21.31	230.94
MAY	100.00	88.17	3.80	12.24	21.96	226.17
JUN	100.00	75.00	3.53	8.53	22.43	209.49
JUL	100.00	65.66	3.73	17.00	20.73	207.11
AUG	100.00	64.39	3.74	18.56	18.84	205.53
SEPT	100.00	65.99	3.78	19.12	18.30	207.19
OCT	100.00	65.93	3.77	19.12	17.61	206.44
NOV	100.00	69.57	3.85	19.53	17.83	210.78
DEC82						

TABLE IV-I-4b

FAIRBANKS #2 HO/DSL PRICE COMPOSITION BY COMPONENT
% OF CRUDE PRICE

	CRUDE @ AT NPR	NPR MU	ARR TO FAI	-CTW- MU	DISTR. MU	RETAIL PRICE
JAN80	100.00	49.68	4.04	12.60	18.01	184.33
FEB	100.00	49.93	3.90	12.29	17.98	184.10
MAR	100.00	48.90	3.77	12.78	19.81	185.25
APR	100.00	44.26	3.89	15.08	16.26	179.48
MAY	100.00	45.72	3.83	15.24	25.17	189.97
JUN	100.00	50.37	3.73	13.72	17.65	185.47
JUL	100.00	58.28	3.76	12.48	19.16	193.68
AUG	100.00	62.94	3.70	12.50	20.57	199.72
SEPT	100.00	63.72	3.62	12.42	20.14	199.90
OCT	100.00	65.04	3.65	13.72	19.50	201.91
NOV	100.00	60.18	3.46	12.99	18.47	195.09
DEC80	100.00	54.33	3.27	10.27	19.45	187.32
JAN81	100.00	51.59	3.25	13.03	17.77	185.64
FEB	100.00	36.92	2.70	8.15	15.82	163.60
MAR	100.00	41.94	2.80	7.21	16.49	168.45
APR	100.00	45.25	2.85	8.07	15.04	171.21
MAY	100.00	53.16	3.01	8.51	15.71	180.38
JUN	100.00	55.88	3.08	8.64	15.98	183.59
JUL	100.00	56.34	3.17	8.58	16.18	184.27
AUG	100.00	59.82	3.25	8.77	16.70	188.54
SEPT	100.00	64.66	3.34	9.04	16.88	193.92
OCT	100.00	68.63	3.34	9.02	18.27	199.25
NOV	100.00	69.80	3.35	9.06	16.27	198.48
DEC81	100.00	71.25	3.38	9.13	17.06	200.82
JAN82	100.00	75.11	3.45	9.34	17.44	205.35
FEB	100.00	84.45	3.64	9.84	18.73	216.65
MAR	100.00	87.20	3.83	10.34	19.58	220.95
APR	100.00	84.46	3.82	10.33	19.48	218.08
MAY	100.00	79.03	3.80	10.41	20.50	213.75
JUN	100.00	66.50	3.53	6.83	22.09	198.96
JUL	100.00	67.16	3.73	15.30	18.01	194.20
AUG	100.00	55.96	3.74	15.46	18.40	193.56
SEPT	100.00	57.48	3.78	15.72	18.13	195.10
OCT	100.00	57.42	3.77	15.71	17.78	194.69
NOV	100.00	60.87	3.86	16.06	17.30	198.09
DEC82						

TABLE IV-I-5a

FAIRBANKS #1 HO/DSL PRICE COMPOSITION BY COMPONENT
incremental % increase from January 1980

	CRUDE @ AT NPR	NPR MU	ARR TO FAI	-CTW- MU	DISTR. MU	RETAIL PRICE
JAN80	0.00	0.00	0.00	0.00	0.00	0.00
FEB	3.42	3.34	0.00	0.77	5.33	3.33
MAR	7.05	4.56	0.00	7.66	22.10	7.72
APR	10.49	-1.33	6.40	28.87	8.02	7.96
MAY	13.72	3.96	8.00	33.65	58.58	16.63
JUN	16.85	15.71	8.00	25.92	14.53	16.75
JUL	15.87	31.15	8.00	14.88	24.18	21.02
AUG	17.85	47.31	8.00	-3.03	36.96	26.04
SEPT	20.42	54.87	8.00	-7.10	39.86	30.40
OCT	19.45	56.53	8.00	4.73	31.42	30.40
NOV	26.14	57.05	8.00	-5.03	38.38	33.97
DEC80	33.48	52.46	8.00	-28.96	49.54	35.75
JAN81	39.34	42.36	12.00	40.14	41.05	39.90
FEB	67.23	25.62	12.00	4.81	50.02	47.51
MAR	66.84	39.74	15.74	-6.13	52.65	51.07
APR	64.29	47.19	16.00	2.62	36.02	50.95
MAY	55.80	49.76	16.00	52.36	36.02	50.95
JUN	53.08	54.41	16.80	52.13	36.02	50.95
JUL	52.64	55.17	20.00	51.21	36.02	50.95
AUG	49.31	60.87	20.00	51.21	37.20	51.07
SEPT	44.93	68.37	20.00	55.08	34.44	51.07
OCT	45.26	90.58	20.00	9.76	39.45	55.11
NOV	44.65	92.78	20.00	9.76	34.83	54.99
DEC81	43.43	94.87	20.00	9.76	34.83	54.99
JAN82	40.27	100.29	20.00	9.76	36.02	55.11
FEB	33.16	112.44	20.00	9.76	37.20	55.23
MAR	26.67	109.01	20.00	9.76	33.00	50.48
APR	26.84	103.32	20.00	9.76	37.20	49.29
MAY	27.56	92.52	20.00	11.05	42.20	47.03
JUN	37.16	76.09	20.00	-16.76	56.12	46.44
JUL	37.16	54.15	26.71	65.86	44.30	44.77
AUG	38.21	52.34	28.00	82.47	32.18	44.77
SEPT	36.88	54.62	28.00	86.22	27.15	44.54
OCT	36.93	54.54	28.00	86.22	22.42	44.06
NOV	34.00	59.56	28.00	86.22	21.23	43.94
DEC82			28.00	86.22	21.23	43.94

TABLE IV-I-5b

FAIRBANKS #2 HO/DSL PRICE COMPOSITION BY COMPONENT
incremental % increase from January 1980

	CRUDE @ AT NPR	NPR MU	ARR TO FAI	-CTW- MU	DISTR. MU	RETAIL PRICE
JAN80	0.00	0.00	0.00	0.00	0.00	0.00
FEB	3.42	3.93	0.00	0.86	3.24	3.29
MAR	7.05	5.36	0.00	8.55	17.70	7.59
APR	10.49	-1.57	6.40	32.21	-0.28	7.59
MAY	13.72	4.66	8.00	37.54	58.90	17.19
JUN	16.85	18.47	8.00	27.22	14.49	17.57
JUL	15.87	35.93	8.00	14.75	23.21	21.74
AUG	17.85	49.29	8.00	16.96	34.61	27.69
SEPT	20.42	54.44	8.00	18.75	34.62	30.59
OCT	19.45	56.39	8.00	30.06	29.33	30.85
NOV	26.14	52.78	8.00	30.00	29.37	33.50
DEC80	33.48	45.97	8.00	8.85	44.16	35.65
JAN81	39.34	44.70	12.00	44.11	37.46	40.33
FEB	67.23	24.26	12.00	8.21	46.90	48.42
MAR	66.84	40.86	15.74	-4.52	52.74	52.47
APR	64.29	49.63	16.00	5.24	37.13	52.59
MAY	55.80	66.72	16.00	5.24	35.84	52.47
JUN	53.08	72.19	16.80	4.98	35.84	52.47
JUL	52.64	73.09	20.00	3.96	37.13	52.59
AUG	49.31	79.79	20.00	3.96	38.42	52.72
SEPT	44.93	88.61	20.00	3.96	35.84	52.47
OCT	45.26	100.65	20.00	3.96	47.36	57.02
NOV	44.65	103.24	20.00	3.96	30.66	55.75
DEC81	43.43	105.70	20.00	3.96	35.84	56.26
JAN82	40.27	113.06	20.00	3.96	35.84	56.26
FEB	33.16	126.36	20.00	3.96	38.42	56.51
MAR	26.67	122.33	20.00	3.96	37.72	51.83
APR	26.84	115.64	20.00	3.96	37.13	50.06
MAY	27.56	102.93	20.00	5.39	45.19	47.91
JUN	37.16	83.61	20.00	-25.64	68.18	48.04
JUL	37.16	57.81	26.71	66.54	37.13	44.50
AUG	38.21	55.69	28.00	69.56	41.20	45.13
SEPT	36.88	58.36	28.00	70.75	37.78	44.88
OCT	36.93	58.27	28.00	70.75	35.19	44.63
NOV	34.00	64.17	28.00	70.75	28.72	43.9
DEC82			28.00	70.75	28.72	43.9

TABLE IV-J-1a

ALASKA CTW POSTINGS FOR #1 OIL
c/g

	DUTCH	BETHEL	FAI	ANC	KET
JAN80	85.21	90.90	75.75	80.05	81.75
FEB	88.50	90.90	78.09	84.81	86.17
MAR	88.50	90.90	80.38	85.00	86.25
APR	88.50	96.00	81.77	85.00	86.25
MAY	91.60	96.00	84.79	87.05	88.05
JUN	95.80	96.00	88.62	89.15	90.15
JUL	97.50	96.00	91.40	94.25	94.50
AUG	99.85	104.60	95.22	94.39	95.67
SEPT	100.77	104.60	97.98	93.93	95.43
OCT	104.01	104.60	98.69	95.50	98.00
NOV	104.30	104.60	101.10	96.40	99.50
DEC80	105.27	112.60	101.66	96.88	99.98
JAN81	108.11	112.60	105.87	99.19	102.11
FEB	114.30	112.60	111.52	103.90	106.50
MAR	114.30	112.60	114.29	106.65	109.25
APR	115.05	120.10	115.60	107.53	109.63
MAY	116.80	120.10	115.60	108.98	111.08
JUN	116.80	120.10	115.60	109.40	111.50
JUL	116.80	120.10	115.60	110.40	113.00
AUG	116.80	122.60	115.60	110.40	113.00
SEPT	117.27	122.60	115.83	110.63	113.23
OCT	117.80	122.60	118.81	110.90	113.50
NOV	114.15	122.60	119.10	109.67	112.23
DEC81	118.30	124.10	119.10	111.65	114.25
JAN82	118.30	124.10	119.10	111.38	114.25
FEB	118.30	124.10	119.10	111.35	114.25
MAR	118.15	124.10	115.45	111.09	114.20
APR	104.22	120.20	114.10	107.89	110.84
MAY	98.57	120.20	111.78	108.14	110.14
JUN	103.70	120.20	110.10	108.25	110.25
JUL	109.30	120.20	109.70	108.25	110.25
AUG	110.98	121.70	110.72	109.09	111.10
SEPT	111.30	121.70	110.95	109.47	111.75
OCT	118.70	121.70	110.95	109.45	111.95
NOV	119.67	121.70	110.95	110.53	113.03
DEC82	119.80	122.20	110.95	111.50	114.00

TABLE IV-J-1b

ALASKA AND OUTSIDE CTW POSTINGS #2 OIL

c/g

	DUTCH	FAI	ANC	KET	SEA	SF	LA
JAN80	81.21	71.37	76.05	77.75	76.52	80.04	80.04
FEB	84.50	73.72	80.81	82.17	NA	NA	NA
MAR	84.50	76.00	81.00	82.25	81.49	82.10	82.10
APR	84.50	77.39	81.00	82.25	85.35	80.79	80.79
MAY	87.60	80.42	82.80	83.80	85.35	79.98	79.98
JUN	91.80	84.15	84.90	85.90	85.26	80.10	80.10
JUL	93.50	86.78	90.00	90.25	84.94	80.25	80.25
AUG	95.85	90.60	90.14	91.42	84.86	79.80	79.80
SEPT	96.27	92.89	89.43	90.93	83.38	79.16	79.16
OCT	99.01	93.50	90.00	92.43	81.18	79.40	79.40
NOV	99.30	95.60	90.15	93.25	80.90	79.52	79.52
DEC80	100.27	96.16	90.63	93.73	82.39	79.59	79.59
JAN81	103.11	100.37	93.38	96.40	83.87	81.13	80.08
FEB	109.30	106.04	98.90	101.75	88.42	84.66	84.72
MAR	109.30	108.79	101.65	104.50	93.23	90.76	92.74
APR	110.05	110.10	102.53	104.88	95.03	93.05	93.25
MAY	111.80	110.10	103.98	106.33	95.65	94.03	94.04
JUN	111.80	110.10	104.40	106.75	95.65	94.27	93.88
JUL	111.80	110.10	105.40	108.25	98.50	94.86	93.39
AUG	111.80	110.10	105.40	108.25	94.55	94.22	93.56
SEPT	111.80	110.10	105.40	108.25	95.65	94.30	93.85
OCT	111.80	112.81	105.40	108.25	95.65	93.84	93.42
NOV	108.34	113.10	103.77	106.58	95.75	93.70	92.98
DEC81	112.30	113.10	105.65	108.50	95.55	93.78	92.72
JAN82	112.30	113.10	105.38	108.50	95.40	93.66	92.29
FEB	112.30	113.10	105.35	108.50	95.10	92.74	90.77
MAR	112.15	109.45	102.75	108.45	93.34	91.41	89.25
APR	103.55	108.10	100.90	105.08	91.35	89.04	87.68
MAY	102.57	105.78	100.64	104.14	90.75	89.32	87.69
JUN	103.03	104.10	100.75	104.25	90.97	89.58	88.36
JUL	103.30	103.70	100.75	104.25	91.27	90.88	89.65
AUG	103.30	103.89	100.75	104.27	92.37	91.13	89.15
SEPT	103.30	103.95	100.97	104.75	92.43	90.38	89.80
OCT	110.70	103.95	100.95	104.95	93.97	91.63	92.80
NOV	111.67	103.95	101.73	105.63	NA	NA	NA
DEC82	111.80	103.95	102.25	106.00	NA	NA	NA

Data: AK from study; outside from Platt's

TABLE IV-J-2a

ALASKA CTW POSTINGS FOR #1 OIL
(as incremental % change from Jan'80)

	DUTCH	BETHEL	FAI	ANC	KET
JAN80	0.00	0.00	0.00	0.00	0.00
FEB	3.86	0.00	3.10	5.94	5.40
MAR	3.86	0.00	6.11	6.18	5.50
APR	3.86	5.61	7.95	6.18	5.50
MAY	7.50	5.61	11.94	8.74	7.70
JUN	12.43	5.61	16.99	11.36	10.27
JUL	14.42	5.61	20.67	17.73	15.59
AUG	17.18	15.07	25.71	17.90	17.03
SEPT	18.26	15.07	29.35	17.34	16.73
OCT	22.06	15.07	30.29	19.30	19.87
NOV	22.40	15.07	33.47	20.42	21.71
DEC80	23.54	23.87	34.21	21.02	22.30
JAN81	26.87	23.87	39.78	23.90	24.90
FEB	34.14	23.87	47.23	29.79	30.27
MAR	34.14	23.87	50.89	33.22	33.63
APR	35.02	32.12	52.62	34.31	34.09
MAY	37.07	32.12	52.62	36.13	35.87
JUN	37.07	32.12	52.62	36.66	36.38
JUL	37.07	32.12	52.62	37.91	38.22
AUG	37.07	34.87	52.62	37.91	38.22
SEPT	37.62	34.87	52.93	38.20	38.50
OCT	38.25	34.87	56.85	38.53	38.83
NOV	33.96	34.87	57.24	37.00	37.28
DEC81	38.83	36.52	57.24	39.47	39.75
JAN82	38.83	36.52	57.24	39.13	39.75
FEB	38.83	36.52	57.24	39.09	39.75
MAR	38.66	36.52	52.43	38.77	39.69
APR	22.31	32.23	50.64	34.77	35.58
MAY	15.68	32.23	47.57	35.08	34.72
JUN	21.70	32.23	45.36	35.22	34.85
JUL	28.27	32.23	44.83	35.22	34.85
AUG	30.24	33.88	46.18	36.27	35.90
SEPT	30.62	33.88	46.48	36.74	36.69
OCT	39.31	33.88	46.48	36.72	36.94
NOV	40.44	33.88	46.48	38.07	38.26
DEC82	40.59	34.43	46.48	39.28	39.44

TABLE IV-J-2b

ALASKA AND OUTSIDE CTI POSTINGS #2 OIL
(as incremental % change from Jan'80)

	DUTCH	FAI	ANC	KET	SEA	SF	LA
JAN80	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FEB	4.05	3.29	6.25	5.67	NA	NA	NA
MAR	4.05	6.49	6.50	5.78	6.49	2.58	2.58
APR	4.05	8.44	6.50	5.78	11.54	0.94	0.94
MAY	7.86	12.68	8.87	7.77	11.54	-0.07	-0.07
JUN	13.04	17.91	11.63	10.48	11.42	0.07	0.07
JUL	15.13	21.59	18.34	16.07	11.00	0.26	0.26
AUG	18.03	26.94	18.51	17.58	10.90	-0.30	-0.30
SEPT	18.54	30.15	17.59	16.95	8.96	-1.10	-1.10
OCT	21.92	31.01	18.34	18.87	6.09	-0.80	-0.80
NOV	22.28	33.95	18.53	19.93	5.72	-0.65	-0.65
DEC80	23.47	34.73	19.17	20.55	7.67	-0.56	-0.56
JAN81	26.96	40.64	22.78	23.97	9.61	1.36	0.05
FEB	34.59	48.58	30.04	30.86	15.55	5.77	5.85
MAR	34.59	52.44	33.65	34.40	21.84	13.39	15.87
APR	35.51	54.27	34.80	34.88	24.19	16.25	16.50
MAY	37.67	54.27	36.72	36.75	25.00	17.48	17.49
JUN	37.67	54.27	37.27	37.29	25.00	17.78	17.29
JUL	37.67	54.27	38.58	39.22	28.72	18.52	16.68
AUG	37.67	54.27	38.58	39.22	23.56	17.72	16.89
SEPT	37.67	54.27	38.58	39.22	25.00	17.82	17.25
OCT	37.67	58.06	38.58	39.22	25.00	17.24	16.72
NOV	33.41	58.47	36.44	37.07	25.13	17.07	16.17
DEC81	38.28	58.47	38.91	39.54	24.87	17.17	15.84
JAN82	38.28	58.47	38.56	39.54	24.67	17.02	15.30
FEB	38.28	58.47	38.52	39.54	24.28	15.87	13.41
MAR	38.11	53.36	35.09	39.48	21.98	14.21	11.51
APR	27.51	51.46	32.67	35.14	19.38	11.24	9.55
MAY	26.31	48.21	32.32	33.93	18.60	11.59	9.56
JUN	26.87	45.86	32.47	34.08	18.88	11.92	10.39
JUL	27.20	45.30	32.47	34.08	19.28	13.54	12.01
AUG	27.20	45.56	32.47	34.10	20.71	13.86	11.38
SEPT	27.20	45.65	32.76	34.72	20.79	12.92	12.19
OCT	36.32	45.65	32.74	34.98	22.80	14.48	15.94
NOV	37.50	45.65	33.76	35.85	NA	NA	NA
DEC82	37.67	45.65	34.44	36.33	NA	NA	NA

TABLE IV-K-1a

ANCHORAGE PRICE ANALYSIS AND COMPARISON, 1982

	JAN82	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC82
ANCHORAGE RETAIL PRICE AVERAGE												
AHO1	128.50	129.20	127.90	126.70	127.10	126.90	127.30	127.70	127.70	125.70	125.90	125.90
AHO2	123.00	123.70	122.80	121.80	121.10	121.20	121.60	121.60	120.60	117.40	117.60	117.50
ANCHORAGE TERMINAL PRICE AVERAGE												
AHO1	111.38	111.35	111.09	107.80	108.14	108.25	108.25	109.09	109.47	109.45	110.53	111.50
AHO2	105.38	105.35	102.75	100.90	100.64	100.75	100.75	100.75	100.97	100.95	101.73	102.25
ANCHORAGE RETAIL LESS TERMINAL PRICES												
AHO1	17.12	17.85	16.81	18.81	18.96	18.65	19.05	18.61	18.23	16.25	15.37	14.40
AHO2	17.62	18.35	20.05	20.90	20.46	20.45	20.85	20.85	19.63	16.45	15.87	15.25
ANCHORAGE TERMINAL PRICE AVERAGE LESS "OUTSIDE" RACK PRICE, PLATT'S												
AHO2-SE	9.98	10.25	9.41	9.55	9.89	9.78	9.48	8.38	8.54	6.98	NA	NA
AHO2-SF	11.72	12.61	11.34	11.86	11.32	11.17	9.87	9.62	10.59	9.32	NA	NA
AHO2-LA	13.09	14.58	13.50	13.22	12.95	12.39	11.10	11.60	11.17	8.15	NA	NA
AHO2-HO	8.19	11.70	13.90	14.78	11.87	8.87	9.03	10.22	10.36	5.41	NA	NA
ANCHORAGE TERMINAL PRICE AVERAGE LESS "OUTSIDE" PLATT'S LESS GENERAL MARINE RATE												
AHO2-SE	7.60	7.82	7.07	7.32	7.66	7.61	7.14	6.11	6.30	4.81	NA	NA
AHO2-SF	8.77	9.59	8.44	9.09	8.56	8.48	6.97	6.80	7.81	6.62	NA	NA
AHO2-LA	9.73	11.14	10.19	10.07	9.80	9.32	7.79	8.39	8.00	5.08	NA	NA

TABLE IV-K-1b

ANCHORAGE PRICE ANALYSIS AND COMPARISON, 1981

	JAN81	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC81
ANCHORAGE RETAIL PRICE AVERAGE												
AHO1	116.50	122.80	124.80	125.20	126.80	127.80	128.20	127.80	127.80	128.20	129.20	128.80
AHO2	110.30	118.00	120.30	121.70	122.30	123.20	123.50	123.20	123.20	122.30	123.30	123.00
ANCHORAGE TERMINAL PRICE AVERAGE												
AHO1	99.19	103.90	106.65	107.53	108.98	109.40	110.40	110.40	110.63	110.90	109.67	111.65
AHO2	93.38	98.90	101.65	102.53	103.98	104.40	105.40	105.40	105.40	105.40	103.77	105.65
ANCHORAGE RETAIL LESS TERMINAL PRICES												
AHO1	17.31	18.90	18.15	17.68	17.82	18.40	17.80	17.40	17.17	17.30	19.53	17.15
AHO2	16.92	19.10	18.65	19.18	18.32	18.80	18.10	17.80	17.80	16.90	19.53	17.35
ANCHORAGE TERMINAL PRICE AVERAGE LESS "OUTSIDE" RACK PRICE, PLATT'S												
AHO2-SE	9.51	10.48	8.42	7.50	8.33	8.75	6.90	10.85	9.75	9.75	8.02	10.10
AHO2-SF	12.25	14.24	10.89	9.48	9.95	10.13	10.54	11.18	11.10	11.56	10.07	11.87
AHO2-LA	13.30	14.18	8.91	9.28	9.94	10.52	12.01	11.84	11.55	11.98	10.79	12.93
AHO2-HO	1.49	-0.97	-0.85	0.03	1.48	4.97	7.65	8.13	8.16	8.76	6.73	7.65
ANCHORAGE TERMINAL PRICE AVERAGE LESS "OUTSIDE" PLATT'S LESS GENERAL MARINE RATE												
AHO2-SE	7.02	7.86	5.84	4.92	5.81	6.30	4.52	8.55	7.48	7.57	5.76	7.91
AHO2-SF	9.16	10.99	7.69	6.28	6.83	7.09	7.59	8.32	8.28	8.86	7.27	9.16
AHO2-LA	9.84	10.55	5.34	5.71	6.45	7.12	8.66	8.59	8.34	8.91	7.60	9.84

TABLE IV-K-1c

ANCHORAGE PRICE ANALYSIS AND COMPARISON,1980

	JAN80	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC80
ANCHORAGE RETAIL PRICE AVERAGE												
AHO1		NA	99.30	102.00	103.20	106.00	NA	109.30	109.30	109.30	111.30	110.30	114.60
AHO2		NA	95.10	98.10	99.20	100.50	NA	103.10	104.50	104.50	104.50	104.50	108.00
ANCHORAGE TERMINAL PRICE AVERAGE												
AHO1	80.05	84.81	85.00	85.00	87.05	89.15	94.25	94.39	93.93	95.50	96.40	96.88
AHO2	76.05	80.81	81.00	81.00	82.80	84.90	90.00	90.14	89.43	90.00	90.15	90.63
ANCHORAGE RETAIL LESS TERMINAL PRICES												
AHO1		NA	14.49	17.00	18.20	18.95	NA	15.05	14.91	15.37	15.80	13.90	17.72
AHO2		NA	14.29	17.10	18.20	17.70	NA	13.10	14.36	15.07	14.50	14.35	17.37
ANCHORAGE TERMINAL PRICE AVERAGE LESS "OUTSIDE" RACK PRICE, PLATT'S												
AHO2-SE	-0.47	NA	-0.49	-4.35	-2.55	-0.36	5.06	5.27	6.05	8.82	9.25	8.24
AHO2-SF	-3.99	NA	-1.10	0.21	2.82	4.80	9.75	10.34	10.27	10.60	10.63	11.05
AHO2-LA	-3.99	NA	-1.10	0.21	2.82	4.80	9.75	10.34	10.27	10.60	10.63	11.05
AHO2-HO	-2.22	NA	3.00	2.24	3.45	5.36	9.92	10.06	9.36	9.82	8.17	NA
ANCHORAGE TERMINAL PRICE AVERAGE LESS "OUTSIDE" PLATT'S LESS GENERAL MARINE RATE												
AHO2-SE	-3.03	NA	-2.97	-6.79	-5.00	-2.79	2.75	2.86	3.71	6.51	6.89	5.80
AHO2-SF	-7.10	NA	-4.12	-2.76	-0.16	1.85	6.91	7.38	7.39	7.75	7.73	8.04
AHO2-LA	-7.55	NA	-4.56	-3.19	-0.59	1.42	6.49	6.93	6.96	7.33	7.30	7.59

TABLE IV-L-1a

KETCHIKAN PRICE ANALYSIS AND COMPARISON 1982

	JAN82	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC82
KETCHIKAN RETAIL PRICE SUMMARY												
KHO2	125.40	125.40	125.40	122.60	121.90	121.90	121.90	122.58	122.90	122.90	122.90	122.90
KETCHIKAN TERMINAL AVERAGE PRICE												
Kho2	108.50	108.50	108.45	105.08	104.14	104.25	104.25	104.27	104.75	104.95	105.63	106.00
KETCHIKAN RETAIL LESS TERMINAL PRICE												
KHO2	16.90	16.90	16.95	17.52	17.76	17.65	17.65	18.31	18.15	17.95	17.27	16.90
KETCHIKAN RETAIL LESS ANCHORAGE RETAIL PRICE												
2K-A	2.40	1.70	2.60	0.80	0.80	0.70	0.30	0.98	2.30	5.50	5.30	5.40
KETCHIKAN TERMINAL PRICE LESS ANCHORAGE TERMINAL PRICE												
2K-A	3.12	3.15	5.71	4.18	3.50	3.50	3.50	3.52	3.78	4.00	3.90	3.75
KETCHIKAN TERMINAL PRICE LESS NIKISKI TERMINAL PRICE LESS MARINE BETWEEN												
HO2	0.25	0.28	2.83	1.30	0.63	0.63	0.63	0.64	0.91	1.13	1.03	0.88
KETCHIKAN RETAILER MARKUP LESS ANCHORAGE RETAILER MARKUP												
HO2	-0.72	-1.45	-3.11	-3.38	-2.70	-2.80	-3.20	-2.54	-1.48	1.50	1.40	1.65
KETCHIKAN TERMINAL PRICE AVERAGE LESS "OUTSIDE" RACK PRICE,PLATT'S												
KHO2-SE	13.10	13.40	15.11	13.73	13.39	13.28	12.98	11.90	12.32	10.98	NA	NA
KHO2-SF	14.84	15.76	17.04	16.04	14.82	14.67	13.37	13.14	14.37	13.32	NA	NA
KHO2-LA	16.21	17.73	19.20	17.40	16.45	15.89	14.60	15.12	14.95	12.15	NA	NA
KETCHIKAN TERMINAL PRICE AVERAGE LESS "OUTSIDE" PLATT'S LESS GENERAL MARINE RATES												
KHO2-SE	11.97	12.27	13.98	12.59	12.26	12.15	11.85	10.76	11.19	9.85	NA	NA
KHO2-SF	13.17	14.09	15.37	14.36	13.14	13.00	11.70	11.46	12.70	11.65	NA	NA
KHO2-LA	14.27	15.79	17.26	15.45	14.50	13.95	12.66	13.17	13.01	10.21	NA	NA

TABLE IV-L-1b

KETCHIKAN PRICE ANALYSIS AND COMPARISON 1981

	JAN81	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC81
KETCHIKAN RETAIL PRICE SUMMARY												
KHO2	121.40	121.40	122.15	124.06	124.90	124.90	124.90	124.90	124.90	124.90	125.32	125.40
KETCHIKAN TERMINAL AVERAGE PRICE												
Kho2	96.40	101.75	104.50	104.88	106.33	106.75	108.25	108.25	108.25	108.25	106.58	108.50
KETCHIKAN RETAIL LESS TERMINAL PRICE												
KHO2	25.00	19.65	17.65	19.19	18.57	18.15	16.65	16.65	16.65	16.65	18.74	16.90
KETCHIKAN RETAIL LESS ANCHORAGE RETAIL PRICE												
2K-A	11.10	3.40	1.85	2.36	2.60	1.70	1.40	1.70	1.70	2.60	2.02	2.40
KETCHIKAN TERMINAL PRICE LESS ANCHORAGE TERMINAL PRICE												
2K-A	3.01	2.85	2.85	2.35	2.35	2.35	2.85	2.85	2.85	2.85	2.81	2.85
KETCHIKAN TERMINAL PRICE LESS NIKISKI TERMINAL PRICE LESS MARINE BETWEEN												
HO2	0.27	0.10	0.10	-0.40	-0.40	-0.40	0.10	0.10	0.10	0.10	0.06	0.10
KETCHIKAN RETAILER MARKUP LESS ANCHORAGE RETAILER MARKUP												
HO2	8.09	0.55	-1.00	0.01	0.25	-0.65	-1.45	-1.15	-1.15	-0.25	-0.79	-0.45
KETCHIKAN TERMINAL PRICE AVERAGE LESS "OUTSIDE" RACK PRICE, PLATT'S												
KHO2-SE	12.53	13.33	11.27	9.85	10.68	11.10	9.75	13.70	12.60	12.60	10.83	12.95
KHO2-SF	15.27	17.09	13.74	11.83	12.30	12.43	13.30	14.03	13.95	14.41	12.88	14.72
KHO2-LA	16.32	17.03	11.76	11.63	12.29	12.87	14.86	14.69	14.40	14.83	13.60	15.78
KETCHIKAN TERMINAL PRICE AVERAGE LESS "OUTSIDE" PLATT'S LESS GENERAL MARINE RATES												
KHO2-SE	11.48	12.29	10.23	8.80	9.64	10.06	8.71	12.66	11.56	11.56	9.79	11.91
KHO2-SF	13.74	15.56	12.21	10.30	10.77	10.95	11.86	12.50	12.42	12.88	11.35	13.19
KHO2-LA	14.54	15.26	9.99	9.85	10.52	11.10	13.09	12.92	12.63	13.06	11.83	14.01

TABLE IV-L-1c

KETCHIKAN PRICE ANALYSIS AND COMPARISON 1980

	JAN80	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC80
KETCHIKAN RETAIL PRICE SUMMARY												
KHO2	91.93	95.43	95.60	98.50	101.60	105.80	107.50	106.65	109.89	110.61	110.90	112.50
KETCHIKAN TERMINAL AVERAGE PRICE												
Kho2	77.75	82.17	82.25	82.25	83.80	85.90	90.25	91.42	90.93	92.43	93.25	93.73
KETCHIKAN RETAIL LESS TERMINAL PRICE												
KHO2	14.18	13.27	13.35	16.25	17.80	19.90	17.25	15.22	18.96	18.18	17.65	18.76
KETCHIKAN RETAIL LESS ANCHORAGE RETAIL PRICE												
2K-A	NA	0.33	-2.50	-0.70	1.10	NA	4.40	2.15	5.39	6.11	6.40	4.50
KETCHIKAN TERMINAL PRICE LESS ANCHORAGE TERMINAL PRICE												
2K-A	1.70	1.36	1.25	1.25	1.00	1.00	0.25	1.29	1.50	2.42	3.10	3.10
KETCHIKAN TERMINAL PRICE LESS NIKISKI TERMINAL PRICE LESS MARINE BETWEEN												
HO2	-1.01	-1.35	-1.46	-1.46	-1.71	-1.71	-2.46	-1.42	-1.21	-0.29	0.39	0.39
KETCHIKAN RETAILER MARKUP LESS ANCHORAGE RETAILER MARKUP												
HO2	NA	-1.03	-3.75	-1.95	0.10	NA	4.15	0.86	3.89	3.69	3.30	1.40
KETCHIKAN TERMINAL PRICE AVERAGE LESS "OUTSIDE" RACK PRICE, PLATT'S												
KHO2--SE	1.23	NA	0.76	-3.10	-1.55	0.64	5.31	6.56	7.55	11.25	12.35	11.34
KHO2--SF	-2.29	NA	0.15	1.46	3.82	5.80	10.00	11.63	11.77	13.03	13.73	14.15
KHO2--LA	-2.29	NA	0.15	1.46	3.82	5.80	10.00	11.63	11.77	13.03	13.73	14.15
KETCHIKAN TERMINAL PRICE AVERAGE LESS "OUTSIDE" PLATT'S LESS GENERAL MARINE RATES												
KHO2--SE	0.23	NA	-0.24	-4.10	-2.56	-0.36	4.31	5.56	6.55	10.24	11.35	10.34
KHO2--SF	-3.76	NA	-1.33	-0.02	2.34	4.32	8.52	10.15	10.30	11.55	12.25	12.67
KHO2--LA	-4.01	NA	-1.58	-0.27	2.09	4.07	8.27	9.90	10.04	11.30	12.00	12.42

LEGEND

TABLES IV-M-1a/c

F	Fairbanks
RL	Regular leaded grade motor gasoline
RU	Regular unleaded grade motor gasoline
SL	Premium (super) leaded grade motor gasoline
fs	full service station average price
ss	self service station average price
ctw	consumer tank wagon, a wholesaler's posted price
mu	markup that amount added to purchase cost of either crude oil (by NPR) or products (by wholesaler or distributor) to give selling price.

TABLE IV-M-1a
FAIRBANKS GASOLINE ANALYSIS AND COMPARISON WITH ANCHORAGE 1982

	JAN82	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC82
FAIRBANKS RETAIL DATA FROM FNSB COMMUNITY RESEARCH CENTER												
F RL fs	157.00	157.20	156.40	153.50	153.70	154.50	156.30	157.00	157.00	156.80	157.20	157.70
F RU fs	162.00	162.50	162.00	158.80	159.10	160.00	161.60	162.20	162.20	162.10	162.20	162.70
F SL fs	168.40	168.80	167.90	165.60	166.50	167.40	168.40	169.00	169.00	168.70	168.70	NA
F RL ss	148.20	147.90	147.20	144.40	143.60	144.90	147.50	147.90	148.10	147.70	147.40	147.20
F RU ss	155.30	155.00	154.10	151.20	150.70	151.80	154.10	154.50	154.60	154.40	154.20	154.00
F SL ss	163.40	163.70	163.50	160.60	160.20	161.00	163.70	164.10	164.40	164.10	163.50	NA
FAIRBANKS TERMINAL PRICES, AVERAGE CONSUMER TANK WAGON (CTW)												
F RLctw	120.15	119.36	117.62	113.77	115.02	116.47	118.55	119.34	119.50	119.43	119.00	117.62
F RUctw	124.65	123.86	122.12	118.27	119.52	120.97	123.05	123.50	123.50	123.43	123.00	121.88
FULL SERVICE STATION DISTRIBUTOR MARKUP, 12 cents/gal F/S tax excluded												
F RL mu	24.85	25.84	26.78	27.73	26.68	26.03	25.75	25.66	25.50	25.37	26.20	28.08
F RU mu	25.35	26.64	27.88	28.53	27.58	27.03	26.55	26.70	26.70	26.67	27.20	28.82
Fave mu	25.10	26.24	27.33	28.13	27.13	26.53	26.15	26.18	26.10	26.02	26.70	28.45
SELF SERVICE STATION DISTRIBUTOR MARKUP, 12 cents/gal F/S tax excluded												
F RL mu	16.05	16.54	17.58	18.63	16.58	16.43	16.95	16.56	16.60	16.27	16.40	17.58
F RU mu	18.65	19.14	19.98	20.93	19.18	18.83	19.05	19.00	19.10	18.97	19.20	20.12
Fave mu	17.35	17.84	18.78	19.78	17.88	17.63	18.00	17.78	17.85	17.62	17.80	18.85
FAIRBANKS RETAIL PRICE LESS ANCHORAGE RETAIL PRICE												
RL ss	17.56	17.49	18.17	18.53	21.33	21.87	22.53	22.64	22.76	22.64	23.28	24.31
RU ss	15.30	15.52	16.17	15.92	18.60	18.79	19.42	19.42	19.53	19.40	19.93	20.70
FAIRBANKS TERMINAL (CTW) PRICE LESS ANCHORAGE CTW PRICE												
RLctw	7.89	6.88	7.10	10.50	11.60	11.60	11.60	11.60	11.89	12.03	11.80	12.34
RUctw	7.89	6.88	7.10	10.86	12.10	12.10	12.10	11.76	11.89	12.03	11.80	12.60
FAIRBANKS CTW PRICE LESS ANCHORAGE CTW PRICE LESS ARR TARIFF												
RLctw	1.12	0.11	0.33	3.73	4.83	4.83	4.57	4.52	4.81	4.95	4.72	5.26
RUctw	1.12	0.11	0.33	4.09	5.33	5.33	5.07	4.68	4.81	4.95	4.72	5.52

TABLE IV-M-1b
FAIRBANKS GASOLINE ANALYSIS AND COMPARISON WITH ANCHORAGE 1981

	JAN81	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC81
FAIRBANKS RETAIL DATA FROM FNSB COMMUNITY RESEARCH CENTER												
F RL fs	145.50	NA	157.00	NA	158.20	NA	155.70	155.70	156.30	156.30	156.50	156.80
F RU fs	150.00	NA	161.80	NA	163.00	NA	160.60	160.90	161.20	161.40	161.40	161.90
F SL fs	154.90	NA	166.40	NA	168.60	NA	167.90	168.00	168.00	168.00	168.00	168.30
F RL ss	134.40	NA	145.80	NA	148.30	NA	148.70	148.00	147.90	148.00	147.80	148.20
F RU ss	141.00	NA	152.40	NA	155.20	NA	155.50	155.30	155.00	155.10	154.90	155.40
F SL ss	147.90	NA	158.70	NA	161.80	NA	162.70	162.60	162.60	163.40	164.00	163.70
FAIRBANKS TERMINAL PRICES, AVERAGE CONSUMER TANK WAGON (CTW)												
F RLctw	108.83	112.69	116.65	117.25	118.50	118.98	119.65	120.15	120.15	120.15	120.15	120.15
F RUctw	111.53	117.89	121.85	122.45	123.70	124.07	124.15	124.65	124.65	124.65	124.65	124.65
FULL SERVICE STATION DISTRIBUTOR MARKUP, 12 cents/gal F/S tax excluded												
F RL mu	24.67	NA	28.35	NA	27.70	NA	24.05	23.55	24.15	24.15	24.35	24.65
F RU mu	26.47	NA	27.95	NA	27.30	NA	24.45	24.25	24.55	24.75	24.75	25.25
Fave mu	25.57	NA	28.15	NA	27.50	NA	24.25	23.90	24.35	24.45	24.55	24.95
SELF SERVICE STATION DISTRIBUTOR MARKUP, 12 cents/gal F/S tax excluded												
F RL mu	13.57	NA	17.15	NA	17.80	NA	17.05	15.85	15.75	15.85	15.65	16.05
F RU mu	17.47	NA	18.55	NA	19.50	NA	19.35	18.65	18.35	18.45	18.25	18.75
Fave mu	15.52	NA	17.85	NA	18.65	NA	18.20	17.25	17.05	17.15	16.95	17.40
FAIRBANKS RETAIL PRICE LESS ANCHORAGE RETAIL PRICE												
RL ss	NA	NA	NA	NA	NA	NA	NA	NA	12.93	13.54	13.96	16.77
RU ss	NA	NA	NA	NA	NA	NA	NA	NA	10.05	11.44	12.16	15.48
FAIRBANKS TERMINAL (CTW) PRICE LESS ANCHORAGE CTW PRICE												
RLctw	5.90	5.90	5.90	5.90	5.87	5.65	5.65	5.65	5.65	5.65	5.65	5.65
RUctw	5.66	5.90	5.90	5.90	5.87	5.65	5.65	5.65	5.65	5.65	5.65	5.65
FAIRBANKS CTW PRICE LESS ANCHORAGE CTW PRICE LESS ARR TARIFF												
RLctw	-0.37	-0.37	-0.55	-0.56	-0.59	-0.87	-1.12	-1.12	-1.12	-1.12	-1.12	-1.12
RUctw	-0.61	-0.37	-0.55	-0.56	-0.59	-0.87	-1.12	-1.12	-1.12	-1.12	-1.12	-1.12

TABLE IV-M-1c
FAIRBANKS GASOLINE ANALYSIS AND COMPARISON WITH ANCHORAGE 1980

	J.'80	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC80
FAIRBANKS RETAIL DATA FROM FNSB COMMUNITY RESEARCH CENTER												
F RL fs	NA	132.90	NA	NA	137.00	NA	NA	143.80	NA	NA	144.80	NA
F RU fs	NA	135.80	NA	NA	140.60	NA	NA	147.30	NA	NA	149.00	NA
F SL fs	NA	139.10	NA	NA	144.50	NA	NA	151.20	NA	NA	152.90	NA
F RL ss	NA	127.20	NA	NA	131.40	NA	NA	136.90	NA	NA	136.50	NA
F RU ss	NA	130.00	NA	NA	135.10	NA	NA	140.90	NA	NA	141.60	NA
F SL ss	NA	133.40	NA	NA	138.60	NA	NA	145.20	NA	NA	146.00	NA
FAIRBANKS TERMINAL PRICES, AVERAGE CONSUMER TANK WAGON (CTW)												
F RLctw	85.82	91.68	92.40	92.40	94.46	97.70	99.85	101.40	100.53	102.11	103.07	104.35
F RUctw	89.25	94.34	94.70	94.70	97.73	101.35	103.93	104.70	105.48	107.38	108.53	109.18
FULL SERVICE STATION DISTRIBUTOR MARKUP, 12 cents/gal F/S tax excluded												
F RL mu	NA	29.22	NA	NA	30.54	NA	NA	30.40	NA	NA	29.73	NA
F RU mu	NA	29.46	NA	NA	30.87	NA	NA	30.60	NA	NA	28.47	NA
Fave mu	NA	29.34	NA	NA	30.70	NA	NA	30.50	NA	NA	29.10	NA
SELF SERVICE STATION DISTRIBUTOR MARKUP, 12 cents/gal F/S tax excluded												
F RL mu	NA	23.52	NA	NA	24.94	NA	NA	23.50	NA	NA	21.43	NA
F RU mu	NA	23.66	NA	NA	25.37	NA	NA	24.20	NA	NA	21.07	NA
Fave mu	NA	23.59	NA	NA	25.15	NA	NA	23.85	NA	NA	21.25	NA
FAIRBANKS RETAIL PRICE LESS ANCHORAGE RETAIL PRICE												
RL ss	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RU ss	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FAIRBANKS TERMINAL (CTW) PRICE LESS ANCHORAGE CTW PRICE												
RLctw	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90
RUctw	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90
FAIRBANKS CTW PRICE LESS ANCHORAGE CTW PRICE LESS ARR TARIFF												
RLctw	0.37	0.37	0.37	0.03	-0.06	-0.06	-0.06	-0.06	-0.06	-0.06	-0.06	-0.06
RUctw	0.37	0.37	0.37	0.03	-0.06	-0.06	-0.06	-0.06	-0.06	-0.06	-0.06	-0.06

TABLE IV-N-1a
REGULAR LEADED RETAIL PRICES
SELF-SERVICE

	FAI	ANC	SEA	SF	LA
JAN80	NA	NA	107.88	116.73	116.85
FEB	127.20	NA	115.71	122.54	122.94
MAR	NA	NA	119.74	125.23	125.79
APR	NA	NA	121.49	124.97	124.87
MAY	131.40	NA	121.07	124.93	124.04
JUN	NA	NA	120.74	124.56	123.00
JUL	NA	NA	120.46	123.96	122.11
AUG	136.90	NA	120.08	123.96	122.11
SEPT	NA	NA	119.88	122.33	120.19
OCT	NA	NA	118.52	122.33	120.19
NOV	136.50	NA	117.72	121.17	119.19
DEC80	NA	NA	117.66	121.13	119.03
JAN81	134.40	NA	119.34	123.76	121.90
FEB	NA	NA	125.98	131.54	130.01
MAR	145.80	NA	129.52	133.22	132.00
APR	NA	NA	129.65	133.32	132.00
MAY	148.30	NA	130.12	134.10	132.70
JUN	NA	NA	130.97	134.90	133.18
JUL	148.70	NA	133.10	135.48	133.64
AUG	148.00	NA	133.15	135.34	133.50
SEPT	147.90	134.97	132.79	134.86	132.84
OCT	148.00	134.46	132.79	134.86	132.84
NOV	147.80	133.84	130.92	133.20	130.92
DEC81	148.20	131.43	129.78	132.08	129.73
JAN82	148.20	130.64	126.30	130.06	127.25
FEB	147.90	130.41	121.52	125.49	122.61
MAR	147.20	129.03	116.28	119.57	117.71
APR	144.40	125.87	113.80	117.07	115.28
MAY	143.60	122.27	113.99	116.96	115.27
JUN	144.90	123.03	118.57	123.02	120.61
JUL	147.50	124.97	122.90	129.39	126.50
AUG	147.90	125.26	122.82	129.35	126.75
SEPT	148.10	125.34	120.61	127.55	124.17
OCT	147.70	125.06	116.95	125.00	120.75
NOV	147.40	124.12	112.93	120.85	116.42
DEC82	147.20	122.89	109.27	114.91	110.83

Data sources:
FAI Fairbanks North Star Borough Community Research Center
ANC, SEA, SF and LA Lundberg Letter

TABLE IV-N-1b
REGULAR UNLEADED RETAIL PRICES
SELF SERVICE

	FAI	ANC	SEA	SF	LA
JAN80	NA	NA	112.39	121.28	121.21
FEB	130.00	NA	119.89	127.16	127.44
MAR	NA	NA	123.97	129.87	130.25
APR	NA	NA	125.81	129.99	129.92
MAY	135.10	NA	125.12	129.99	128.97
JUN	NA	NA	125.01	129.77	128.37
JUL	NA	NA	125.40	129.74	128.00
AUG	140.90	NA	125.62	129.74	128.00
SEPT	NA	NA	125.70	120.19	126.80
OCT	NA	NA	124.95	128.87	126.80
NOV	141.60	NA	124.71	128.70	126.80
DEC80	NA	NA	124.42	128.86	126.21
JAN81	141.00	NA	125.90	131.39	129.04
FEB	NA	NA	132.53	139.34	137.10
MAR	152.40	NA	136.48	141.21	139.13
APR	NA	NA	137.01	141.59	139.49
MAY	155.20	NA	137.59	142.41	140.14
JUN	NA	NA	138.59	143.17	140.55
JUL	155.50	NA	140.52	143.76	140.96
AUG	155.30	NA	140.57	143.45	140.77
SEPT	155.00	144.95	140.41	142.87	140.01
OCT	155.10	143.66	140.41	142.87	140.01
NOV	154.90	142.74	139.07	141.09	137.69
DEC81	155.40	139.92	138.04	139.68	136.27
JAN82	155.30	140.00	134.58	137.53	133.47
FEB	155.00	139.48	130.07	133.06	128.79
MAR	154.10	137.93	124.40	127.28	123.49
APR	151.20	135.28	121.47	124.57	121.08
MAY	150.70	132.10	121.28	124.42	121.27
JUN	151.80	133.01	125.55	130.57	126.99
JUL	154.10	134.68	129.87	136.97	133.17
AUG	154.50	135.08	129.96	137.10	133.60
SEPT	154.60	135.07	127.83	135.37	130.96
OCT	154.40	135.00	124.24	132.81	127.39
NOV	154.20	134.27	120.46	129.08	123.27
DEC82	154.00	133.30	117.10	123.66	118.16

Data sources:
FAI Fairbanks North Star Borough Community Research Center
ANC, SEA, SF and LA Lundberg Letter

TABLE IV-N-1c

REGULAR LEADED RETAIL PRICES LESS STATE TAXES

self-service

	FAI	ANC	SEA	SF	LA
JAN80	NA	NA	91.88	99.12	99.24
FEB	115.20	NA	99.71	104.60	104.98
MAR	NA	NA	103.74	107.14	107.67
APR	NA	NA	105.49	106.90	106.80
MAY	119.40	NA	105.07	106.86	106.02
JUN	NA	NA	104.74	106.51	105.04
JUL	NA	NA	104.46	105.94	104.20
AUG	124.90	NA	104.08	105.94	104.20
SEPT	NA	NA	103.88	104.41	102.39
OCT	NA	NA	102.52	104.41	102.39
NOV	124.50	NA	101.72	103.31	101.44
DEC80	NA	NA	101.66	103.27	101.29
JAN81	122.40	NA	103.34	105.75	104.00
FEB	NA	NA	109.98	113.09	111.65
MAR	133.80	NA	113.52	114.68	113.53
APR	NA	NA	113.65	114.77	113.53
MAY	136.30	NA	114.12	115.51	114.19
JUN	NA	NA	114.97	116.26	114.64
JUL	136.70	NA	115.60	116.81	115.08
AUG	136.00	NA	115.65	116.68	114.94
SEPT	135.90	122.97	115.29	116.23	114.32
OCT	136.00	122.46	115.29	116.23	114.32
NOV	135.80	121.84	113.42	114.66	112.51
DEC81	136.20	119.43	112.28	113.60	111.39
JAN82	136.20	118.64	110.30	111.70	109.05
FEB	135.90	118.41	105.52	107.39	104.67
MAR	135.20	117.03	100.28	101.80	100.05
APR	132.40	113.87	97.80	99.44	97.76
MAY	131.60	110.27	97.99	99.34	97.75
JUN	132.90	111.03	102.57	105.06	102.78
JUL	135.50	112.97	106.90	111.06	108.34
AUG	135.90	113.26	106.82	111.02	108.57
SEPT	136.10	113.34	104.61	109.33	106.14
OCT	135.70	113.06	100.95	106.92	102.92
NOV	135.40	112.12	96.93	103.01	98.83
DEC82	135.20	110.89	93.27	97.41	93.56

TABLE IV-N-1d

REGULAR LEADED RETAIL PRICES LESS STATE TAXES

self-service

	FAI	ANC	SEA	SF	LA
JAN80	NA	NA	96.39	103.42	103.35
FEB	118.00	NA	103.89	108.96	109.23
MAR	NA	NA	107.97	111.52	111.88
APR	NA	NA	109.81	111.63	111.57
MAY	123.10	NA	109.12	111.63	110.67
JUN	NA	NA	109.01	111.42	110.10
JUL	NA	NA	109.40	111.40	109.75
AUG	128.90	NA	109.62	111.40	109.75
SEPT	NA	NA	109.70	102.39	108.62
OCT	NA	NA	108.95	110.58	108.62
NOV	129.60	NA	108.71	110.42	108.62
DEC80	NA	NA	108.42	110.57	108.07
JAN81	129.00	NA	109.90	112.95	110.74
FEB	NA	NA	116.53	120.45	118.34
MAR	140.40	NA	120.48	122.22	120.25
APR	NA	NA	121.01	122.58	120.59
MAY	143.20	NA	121.59	123.35	121.21
JUN	NA	NA	122.59	124.07	121.59
JUL	143.50	NA	123.02	124.62	121.98
AUG	143.30	NA	123.07	124.33	121.80
SEPT	143.00	132.95	122.91	123.78	121.08
OCT	143.10	131.66	122.91	123.78	121.08
NOV	142.90	130.74	121.57	122.10	118.90
DEC81	143.40	127.92	120.54	120.77	117.56
JAN82	143.30	128.00	118.58	118.75	114.92
FEB	143.00	127.48	114.07	114.53	110.50
MAR	142.10	125.93	108.40	109.08	105.50
APR	139.20	123.28	105.47	106.51	103.22
MAY	138.70	120.10	105.28	106.38	103.41
JUN	139.80	121.01	109.55	112.18	108.80
JUL	142.10	122.68	113.87	118.22	114.63
AUG	142.50	123.08	113.86	118.34	115.04
SEPT	142.60	123.07	111.83	116.71	112.54
OCT	142.40	123.00	108.24	114.29	109.18
NOV	142.20	122.27	104.46	110.77	105.29
DEC82	142.00	121.30	101.10	105.66	100.47

TABLE IV-N-2a

REGULAR LEADED MOGAS PRICE LESS "OTHER" CITY LESS TRANS. COSTS

---------RETAIL-SS---------

	Fairbanks with.....				Anchorage with.....		
	Anc	Sea	SF	LA	Sea	SF	LA
JAN80	NA	NA	NA	NA	NA	NA	NA
FEB	NA	3.50	-3.87	-4.70	NA	NA	NA
MAR	NA	NA	NA	NA	NA	NA	NA
APR	NA	NA	NA	NA	NA	NA	NA
MAY	NA	2.19	-2.15	-1.64	NA	NA	NA
JUN	NA	NA	NA	NA	NA	NA	NA
JUL	NA	NA	NA	NA	NA	NA	NA
AUG	NA	8.71	4.34	5.80	NA	NA	NA
SEPT	NA	NA	NA	NA	NA	NA	NA
OCT	NA	NA	NA	NA	NA	NA	NA
NOV	NA	10.72	6.79	8.38	NA	NA	NA
DEC80	NA	NA	NA	NA	NA	NA	NA
JAN81	NA	6.57	1.61	3.15	NA	NA	NA
FEB	NA	NA	NA	NA	NA	NA	NA
MAR	NA	7.54	3.29	4.17	NA	NA	NA
APR	NA	NA	NA	NA	NA	NA	NA
MAY	NA	9.48	4.96	6.04	NA	NA	NA
JUN	NA	NA	NA	NA	NA	NA	NA
JUL	NA	6.72	3.83	5.31	NA	NA	NA
AUG	NA	6.03	3.35	4.84	NA	NA	NA
SEPT	6.16	6.32	3.76	5.43	0.15	-2.40	-0.73
OCT	6.77	6.50	3.97	5.66	-0.27	-2.81	-1.12
NOV	7.19	8.10	5.34	7.27	0.91	-1.86	0.08
DEC81	10.00	9.70	6.93	8.95	-0.30	-3.07	-1.05
JAN82	10.79	13.02	8.75	11.19	2.23	-2.04	0.40
FEB	10.72	17.45	12.96	15.46	6.73	2.24	4.74
MAR	11.40	22.07	18.28	19.78	10.67	6.88	8.38
APR	11.76	21.85	18.10	19.54	10.09	6.34	7.78
MAY	14.56	20.86	17.42	18.75	6.30	2.86	4.19
JUN	15.10	17.63	12.72	14.79	2.53	-2.39	-0.31
JUL	15.50	15.49	8.50	11.03	-0.01	-6.99	-4.47
AUG	15.56	15.98	8.97	11.21	0.42	-6.59	-4.35
SEPT	15.68	18.42	11.00	14.04	2.75	-4.68	-1.64
OCT	15.56	21.74	13.22	17.13	6.17	-2.34	1.57
NOV	16.20	25.37	16.96	21.04	9.17	0.76	4.85
DEC82	17.23	28.83	22.70	26.43	11.60	5.47	9.20

TABLE IV-N-2b

SS REGULAR LEADED RETAIL PRICE COMPARISON CORRECTED FOR TAXES
(Alaska city less other city less transportation to Alaska)

	Fairbanks against.....				Anchorage against.....		
	Anc	Sea	SF	LA	Sea	SF	LA
JAN80	NA	NA	NA	NA	NA	NA	NA
FEB	NA	7.50	2.07	1.26	NA	NA	NA
MAR	NA	NA	NA	NA	NA	NA	NA
APR	NA	NA	NA	NA	NA	NA	NA
MAY	NA	6.19	3.93	4.38	NA	NA	NA
JUN	NA	NA	NA	NA	NA	NA	NA
JUL	NA	NA	NA	NA	NA	NA	NA
AUG	NA	12.71	10.36	11.71	NA	NA	NA
SEPT	NA	NA	NA	NA	NA	NA	NA
OCT	NA	NA	NA	NA	NA	NA	NA
NOV	NA	14.72	12.65	14.13	NA	NA	NA
DEC80	NA	NA	NA	NA	NA	NA	NA
JAN81	NA	10.57	7.62	9.05	NA	NA	NA
FEB	NA	NA	NA	NA	NA	NA	NA
MAR	NA	11.54	9.83	10.64	NA	NA	NA
APR	NA	NA	NA	NA	NA	NA	NA
MAY	NA	13.48	11.55	12.55	NA	NA	NA
JUN	NA	NA	NA	NA	NA	NA	NA
JUL	NA	12.22	10.50	11.87	NA	NA	NA
AUG	NA	11.53	10.01	11.39	NA	NA	NA
SEPT	6.16	11.82	10.40	11.95	5.65	4.23	5.79
OCT	6.77	12.00	10.30	12.18	5.23	3.83	5.40
NOV	7.19	13.60	11.88	13.68	6.41	4.68	6.49
DEC81	10.00	15.20	13.41	15.29	5.20	3.41	5.29
JAN82	10.79	17.02	15.11	17.39	6.23	4.32	6.60
FEB	10.72	21.45	19.06	21.40	10.73	8.34	10.68
MAR	11.40	26.07	24.05	25.44	14.67	12.65	14.04
APR	11.76	25.85	23.73	25.07	14.09	11.97	13.31
MAY	14.56	24.86	23.04	24.28	10.30	8.48	9.72
JUN	15.10	21.63	18.68	20.62	6.53	3.58	5.52
JUL	15.50	19.49	14.83	17.19	3.99	-0.67	1.70
AUG	15.56	19.98	15.29	17.39	4.42	-0.27	1.83
SEPT	15.68	22.42	17.22	20.07	6.75	1.54	4.39
OCT	15.56	25.74	19.30	22.97	10.17	3.73	7.40
NOV	16.20	29.37	22.80	26.63	13.17	6.60	10.44
DEC82	17.23	32.83	28.20	31.70	15.60	10.98	14.48

TABLE IV-N-2c

REGULAR UNLEADED MOGAS PRICE LESS "OTHER" CITY LESS TRANS. COSTS

---------RETAIL-SS---------

	Fairbanks with.....				Anchorage with.....		
	Anc	Sea	SF	LA	Sea	SF	LA
JAN80	NA	NA	NA	NA	NA	NA	NA
FEB	NA	2.12	-5.69	-6.40	NA	NA	NA
MAR	NA	NA	NA	NA	NA	NA	NA
APR	NA	NA	NA	NA	NA	NA	NA
MAY	NA	1.84	-3.51	-2.87	NA	NA	NA
JUN	NA	NA	NA	NA	NA	NA	NA
JUL	NA	NA	NA	NA	NA	NA	NA
AUG	NA	7.17	2.56	3.91	NA	NA	NA
SEPT	NA	NA	NA	NA	NA	NA	NA
OCT	NA	NA	NA	NA	NA	NA	NA
NOV	NA	8.83	4.36	5.87	NA	NA	NA
DEC80	NA	NA	NA	NA	NA	NA	NA
JAN81	NA	6.61	0.58	2.61	NA	NA	NA
FEB	NA	NA	NA	NA	NA	NA	NA
MAR	NA	7.18	1.90	3.64	NA	NA	NA
APR	NA	NA	NA	NA	NA	NA	NA
MAY	NA	8.91	3.55	5.50	NA	NA	NA
JUN	NA	NA	NA	NA	NA	NA	NA
JUL	NA	6.10	2.35	4.79	NA	NA	NA
AUG	NA	5.91	2.54	4.87	NA	NA	NA
SEPT	3.28	5.80	2.85	5.36	2.52	-0.43	2.09
OCT	4.67	5.98	3.06	5.59	1.31	-1.61	0.92
NOV	5.39	7.05	4.55	7.60	1.66	-0.85	2.21
DEC81	8.71	8.64	6.53	9.61	-0.07	-2.18	0.90
JAN82	8.53	11.84	8.38	12.07	3.31	-0.15	3.54
FEB	8.75	16.00	12.49	16.38	7.25	3.74	7.63
MAR	9.40	20.85	17.47	20.90	11.45	8.07	11.50
APR	9.15	20.98	17.40	20.55	11.83	8.25	11.40
MAY	11.84	20.67	17.05	19.85	8.83	5.22	8.02
JUN	12.03	17.55	12.06	15.31	5.52	0.04	3.29
JUL	12.39	15.12	7.52	10.95	2.74	-4.87	-1.43
AUG	12.34	15.54	7.82	10.96	3.20	-4.52	-1.38
SEPT	12.45	17.70	9.68	13.75	5.25	-2.78	1.30
OCT	12.32	21.14	12.11	17.20	8.82	-0.21	4.88
NOV	12.86	24.64	15.54	20.99	11.78	2.68	8.13
DEC82	13.62	27.80	20.75	25.90	14.17	7.12	12.28

TABLE IV-N-2d

SS REGULAR UNLEADED RETAIL PRICE COMPARISON CORRECTED FOR TAXES
(Alaska city less other city less transportation to Alaska)

	Fairbanks against.....				Anchorage against.....		
	Anc	Sea	SF	LA	Sea	SF	LA
JAN80	NA	NA	NA	NA	NA	NA	NA
FEB	NA	6.12	0.51	-0.19	NA	NA	NA
MAR	NA	NA	NA	NA	NA	NA	NA
APR	NA	NA	NA	NA	NA	NA	NA
MAY	NA	5.84	2.85	3.43	NA	NA	NA
JUN	NA	NA	NA	NA	NA	NA	NA
JUL	NA	NA	NA	NA	NA	NA	NA
AUG	NA	11.17	8.91	10.15	NA	NA	NA
SEPT	NA	NA	NA	NA	NA	NA	NA
OCT	NA	NA	NA	NA	NA	NA	NA
NOV	NA	12.83	10.64	12.05	NA	NA	NA
DEC80	NA	NA	NA	NA	NA	NA	NA
JAN81	NA	10.61	7.02	8.91	NA	NA	NA
FEB	NA	NA	NA	NA	NA	NA	NA
MAR	NA	11.18	8.89	10.52	NA	NA	NA
APR	NA	NA	NA	NA	NA	NA	NA
MAY	NA	12.91	10.61	12.43	NA	NA	NA
JUN	NA	NA	NA	NA	NA	NA	NA
JUL	NA	11.60	9.49	11.76	NA	NA	NA
AUG	NA	11.41	9.66	11.84	NA	NA	NA
SEPT	3.28	11.30	9.94	12.29	8.02	6.66	9.01
OCT	4.67	11.48	10.15	12.51	6.81	5.48	7.84
NOV	5.39	12.55	11.53	14.39	7.16	6.14	9.00
DEC81	8.71	14.14	13.44	16.32	5.43	4.73	7.61
JAN82	8.53	15.84	15.16	18.62	7.31	6.63	10.09
FEB	8.75	20.00	19.02	22.67	11.25	10.27	13.92
MAR	9.40	24.85	23.68	26.89	15.45	14.27	17.49
APR	9.15	24.98	23.45	26.40	15.83	14.31	17.25
MAY	11.84	24.67	23.09	25.72	12.83	11.26	13.88
JUN	12.03	21.55	18.45	21.50	9.52	6.43	9.48
JUL	12.39	19.12	14.27	17.49	6.74	1.88	5.11
AUG	12.34	19.54	14.58	17.52	7.20	2.24	5.18
SEPT	12.45	21.70	16.34	20.16	9.25	3.89	7.71
OCT	12.32	25.14	18.63	23.41	12.82	6.31	11.09
NOV	12.86	28.64	21.84	26.97	15.78	8.99	14.11
DEC82	13.62	31.80	26.75	31.59	18.17	13.12	17.97

TABLE IV-N-3a
REGULAR LEADED WHOLESALE PRICES
(Lundberg Survey Data)

	ANC wh	SEA wh	SF wh	LA wh
JAN80	NA	79.80	85.03	85.32
FEB	NA	88.85	89.57	89.85
MAR	NA	90.83	92.81	93.59
APR	NA	92.67	93.34	94.00
MAY	NA	92.61	93.87	94.24
JUN	NA	92.96	94.26	94.59
JUL	NA	93.78	94.92	95.23
AUG	NA	93.71	94.92	95.23
SEPT	NA	93.64	93.04	93.50
OCT	NA	92.98	93.04	93.50
NOV	NA	92.84	93.24	93.45
DEC80	NA	93.72	94.60	94.48
JAN81	NA	95.95	97.66	97.60
FEB	NA	102.13	104.27	104.59
MAR	NA	105.66	106.30	106.58
APR	NA	106.34	107.09	107.30
MAY	NA	107.07	108.25	108.47
JUN	NA	108.41	109.22	109.38
JUL	NA	108.88	109.61	109.64
AUG	NA	108.84	109.26	109.36
SEPT	115.00	108.86	108.77	108.97
OCT	114.83	108.86	108.77	108.97
NOV	114.09	108.49	107.76	107.81
DEC81	113.70	107.31	106.53	106.54
JAN82	113.40	105.42	104.31	104.12
FEB	113.11	102.51	100.93	101.18
MAR	112.39	95.90	95.15	95.50
APR	108.54	93.22	92.57	92.73
MAY	105.67	94.88	94.64	94.80
JUN	105.66	99.63	100.62	100.37
JUL	107.65	103.59	106.20	105.40
AUG	107.96	102.92	105.74	104.47
SEPT	107.76	100.58	103.26	101.20
OCT	107.68	97.66	101.20	98.90
NOV	107.09	94.75	97.91	95.85
DEC82	105.15	91.56	93.28	91.96

TABLE IV-3b
REGULAR UNLEADED WHOLESALE PRICES
(Lundberg Survey)

	ANC	SEA	SF	LA
JAN80	NA	83.71	88.79	88.79
FEB	NA	90.58	93.47	93.75
MAR	NA	94.49	96.49	97.22
APR	NA	96.50	96.96	97.58
MAY	NA	95.77	97.08	97.27
JUN	NA	95.86	97.56	97.80
JUL	NA	96.86	98.18	98.34
AUG	NA	97.52	98.18	98.34
SEPT	NA	97.43	93.50	97.43
OCT	NA	97.15	97.00	97.43
NOV	NA	97.24	97.56	97.76
DEC80	NA	97.76	98.37	98.38
JAN81	NA	99.70	101.30	101.33
FEB	NA	105.52	107.94	108.33
MAR	NA	109.26	109.95	110.23
APR	NA	110.16	110.94	111.11
MAY	NA	110.92	112.08	112.24
JUN	NA	112.34	113.03	113.18
JUL	NA	112.85	113.45	113.48
AUG	NA	112.79	113.15	113.23
SEPT	120.30	112.83	112.67	112.86
OCT	119.88	112.83	112.67	112.86
NOV	119.11	112.34	111.71	111.72
DEC81	118.73	110.69	109.87	109.89
JAN82	118.05	108.79	107.69	107.55
FEB	117.76	105.88	104.36	104.68
MAR	117.07	99.64	98.84	99.18
APR	113.22	96.70	96.03	96.18
MAY	110.27	98.27	97.96	98.07
JUN	110.14	102.88	103.83	103.54
JUL	112.06	106.81	109.37	108.60
AUG	112.23	106.13	109.00	107.84
SEPT	112.05	103.68	106.44	104.49
OCT	111.97	100.80	104.33	102.17
NOV	111.38	98.04	101.27	99.33
DEC82	109.45	94.93	96.77	95.40

TABLE IV-N-4

ANCHORAGE MOGAS LESS OTHER LESS TRANSPORTATION

WHOLESALE-PRICE (Lundberg Survey)

	Regular Leaded			Regular Unleaded		
	Sea	SF	LA	Sea	SF	LA
SEPT81	4.11	3.72	3.17	5.44	5.12	4.58
OCT	4.03	3.66	3.13	5.11	4.81	4.28
NOV	3.59	3.83	3.44	4.76	4.90	4.55
DEC81	4.44	4.75	4.41	6.09	6.44	6.09
JAN82	5.87	6.47	6.29	7.15	7.74	7.51
FEB	8.44	9.50	8.87	9.72	10.72	10.02
MAR	14.41	14.66	13.95	15.35	15.65	14.95
APR	13.33	13.51	13.00	14.53	14.72	14.23
MAY	8.81	8.57	8.06	10.02	9.86	9.40
JUN	4.11	2.65	2.56	5.32	3.91	3.86
JUL	1.99	-1.13	-0.69	3.17	0.11	0.52
AUG	3.02	-0.29	0.63	4.08	0.72	1.53
SEPT	5.19	2.03	3.75	6.38	3.14	4.74
OCT	8.09	4.08	6.04	9.24	5.24	7.06
NOV	10.32	6.67	8.38	11.32	7.60	9.19
DEC82	11.57	9.36	10.33	12.50	10.17	11.19

TABLE IV-N-5a
REGULAR LEADED IMPLIED MARGINS
SELF-SERVICE

	ANC margin	SEA margin	SF margin	LA margin
JAN80	NA	12.08	14.09	13.92
FEB	NA	12.86	15.03	15.13
MAR	NA	12.91	14.33	14.08
APR	NA	12.82	13.56	12.80
MAY	NA	12.46	12.99	11.78
JUN	NA	11.78	12.25	10.45
JUL	NA	10.68	[illegible]	8.97
AUG	NA	10.37	[illegible]	8.97
SEPT	NA	10.24	[illegible]	8.89
OCT	NA	9.54	11.37	8.89
NOV	NA	8.88	10.07	7.99
DEC80	NA	7.94	8.67	6.81
JAN81	NA	7.39	8.09	6.40
FEB	NA	7.85	8.82	7.06
MAR	NA	7.86	8.38	6.95
APR	NA	7.31	7.68	6.23
MAY	NA	7.05	7.26	5.72
JUN	NA	6.54	7.04	5.26
JUL	NA	6.72	7.20	5.44
AUG	NA	6.81	7.42	5.58
SEPT	7.81	6.43	7.46	5.35
OCT	7.63	6.43	7.46	5.35
NOV	7.75	4.93	6.90	4.70
DEC81	5.73	4.97	7.07	4.85
JAN82	5.24	4.88	7.39	4.93
FEB	5.30	3.01	6.46	3.49
MAR	4.64	4.38	6.65	4.55
APR	5.34	4.58	6.87	5.03
MAY	4.60	3.11	4.70	2.95
JUN	5.37	2.95	4.47	2.41
JUL	5.32	3.41	4.48	2.64
AUG	5.30	3.90	4.78	3.71
SEPT	5.58	4.02	5.57	4.55
OCT	5.38	3.29	5.24	3.65
NOV	5.03	2.18	4.63	2.62
DEC82	5.74	1.70	3.68	1.25

Source: Lundberg Letter

TABLE IV-N-5b

REGULAR UNLEADED IMPLIED MARGINS
SELF-SERVICE

	ANC	SEA	SF	LA
JAN80	NA	12.68	14.63	14.56
FEB	NA	13.31	15.49	15.48
MAR	NA	13.48	15.03	14.66
APR	NA	13.31	14.67	13.99
MAY	NA	13.35	14.55	13.40
JUN	NA	13.15	13.86	12.30
JUL	NA	12.54	13.22	11.41
AUG	NA	12.10	13.22	11.41
SEPT	NA	12.27	8.89	11.19
OCT	NA	11.80	13.58	11.19
NOV	NA	11.47	12.86	10.37
DEC80	NA	10.66	12.20	9.69
JAN81	NA	10.20	11.65	9.41
FEB	NA	11.01	12.51	10.01
MAR	NA	11.22	12.27	10.02
APR	NA	10.85	11.64	9.48
MAY	NA	10.67	11.27	8.97
JUN	NA	10.25	11.04	8.41
JUL	NA	10.17	11.17	8.50
AUG	NA	10.28	11.18	8.57
SEPT	12.65	10.08	11.11	8.22
OCT	11.78	10.08	11.11	8.22
NOV	11.63	9.23	10.39	7.18
DEC81	9.19	9.85	10.90	7.67
JAN82	9.95	9.79	11.06	7.37
FEB	9.72	8.19	10.17	5.82
MAR	8.86	8.76	10.24	6.32
APR	10.07	8.77	10.49	7.05
MAY	9.82	7.01	8.42	5.34
JUN	10.87	6.67	8.35	5.26
JUL	10.62	7.06	8.45	5.73
AUG	10.85	7.73	8.81	6.79
SEPT	11.02	8.15	9.75	7.65
OCT	11.03	7.45	9.45	6.61
NOV	10.88	6.43	9.00	5.58
DEC82	11.85	6.18	8.41	4.70

Source: Lundberg Letter

TABLE IV-N-6

ANCHORAGE MOGAS LESS OTHER CITY WHOLESALE MARGIN

(implied margins from Lundberg Letter)

	Regular Leaded.....			Regular Unleaded.....		
	SEA	SF	LA	SEA	SF	LA
SEPT	1.38	0.35	2.46	2.57	1.54	4.43
OCT	1.20	0.17	2.28	1.70	0.67	3.56
NOV	2.82	0.85	3.05	2.40	1.24	4.45
DEC81	0.76	-1.34	0.88	-0.66	-1.71	1.52
JAN82	0.36	-2.15	0.31	0.16	-1.11	2.58
FEB	2.29	-1.16	1.81	1.53	-0.45	3.90
MAR	0.26	-2.01	0.09	0.10	-1.38	2.54
APR	0.76	-1.54	0.31	1.30	-0.42	3.02
MAY	1.49	-0.09	1.65	2.81	1.40	4.48
JUN	2.42	0.89	2.95	4.20	2.52	5.61
JUL	1.91	0.84	2.68	3.56	2.17	4.89
AUG	1.40	0.52	1.59	3.12	2.05	4.06
SEPT	1.56	0.01	1.03	2.87	1.27	3.37
OCT	2.09	0.14	1.73	3.58	1.58	4.42
NOV	2.85	0.41	2.42	4.46	1.89	5.30
DEC82	4.04	2.07	4.49	5.67	3.44	7.14

TABLE IV-N-7a
REGULAR LEADED CTW PRICE

	FAI	ANC	KET	DUT	BET	SEA	SF	LA
JAN80	85.82	79.92	79.62	80.62	84.20	84.48	82.62	82.62
FEB	91.68	85.78	85.48	86.48	84.20	NA	NA	NA
MAR	92.40	86.50	86.20	87.20	84.20	92.77	91.86	91.86
APR	92.40	86.50	86.20	87.20	91.20	95.67	93.61	93.61
MAY	94.46	88.56	88.26	89.26	91.20	96.25	95.91	95.91
JUN	97.70	91.80	91.50	92.50	91.20	96.25	96.59	96.59
JUL	99.85	93.95	93.65	94.65	91.20	94.96	96.78	96.78
AUG	101.40	95.50	95.20	96.20	97.20	93.67	95.79	95.79
SEPT	100.53	94.63	94.33	95.33	97.20	93.17	93.91	93.91
OCT	102.11	96.21	95.91	96.91	97.20	92.58	92.37	92.37
NOV	103.07	97.17	93.23	94.19	97.20	92.01	89.97	89.97
DEC80	104.35	98.45	98.15	99.15	104.00	91.75	90.44	90.44
JAN81	108.83	102.93	102.88	103.85	107.00	92.73	91.22	91.07
FEB	112.69	106.79	106.74	111.57	107.00	98.19	97.05	98.41
MAR	116.65	110.75	110.70	112.50	107.00	103.68	103.26	103.98
APR	117.25	111.35	111.30	112.70	114.50	104.78	104.15	105.27
MAY	118.50	112.63	112.58	114.27	114.50	105.49	105.78	106.26
JUN	118.98	113.33	113.28	115.67	114.50	106.04	106.53	106.54
JUL	119.65	114.00	113.95	116.50	120.50	106.02	106.55	107.06
AUG	120.15	114.50	114.70	116.50	120.50	105.65	105.56	105.58
SEPT	120.15	114.50	114.70	116.50	120.50	105.50	104.30	105.00
OCT	120.15	114.50	114.70	116.50	120.50	105.49	103.69	104.74
NOV	120.15	114.50	114.70	116.50	120.50	104.78	102.74	103.65
DEC81	120.15	114.50	114.70	116.50	124.50	103.01	103.01	100.16
JAN82	120.15	112.26	114.70	116.50	124.50	101.04	95.82	95.42
FEB	119.36	112.48	114.38	116.50	124.50	97.73	92.16	93.03
MAR	117.62	110.52	112.67	115.00	124.50	92.47	89.91	90.86
APR	113.77	103.27	106.13	104.67	118.60	90.44	88.66	90.32
MAY	115.02	103.42	106.52	102.96	118.60	92.12	91.54	93.14
JUN	116.47	104.87	108.12	105.70	118.60	97.28	97.29	98.67
JUL	118.55	106.95	110.20	107.30	118.60	102.01	102.08	104.25
AUG	119.34	107.74	110.65	107.30	121.00	100.46	101.93	100.49
SEPT	119.50	107.61	110.65	107.30	121.00	99.38	99.54	97.39
OCT	119.43	107.40	110.65	107.30	121.00	96.32	97.01	94.65
NOV	119.00	107.20	110.65	107.30	121.00	94.25	92.83	90.83
DEC82	117.62	105.28	110.25	107.30	121.00	NA	NA	NA

Note: Seattle, Los Angeles and San Francisco data from Platt's

TABLE IV-N-7b

REGULAR UNLEADED CTW PRICE

	FAI	ANC	KET	DUT	SEA	SF	LA
JAN80	89.25	83.35	83.55	85.70	NA	NA	NA
FEB	94.34	88.44	88.64	90.88	NA	NA	NA
MAR	94.70	88.80	89.00	91.60	NA	NA	NA
APR	94.70	88.80	89.00	91.60	NA	NA	NA
MAY	97.73	91.83	92.03	93.66	NA	NA	NA
JUN	101.35	95.45	95.65	96.90	NA	NA	NA
JUL	103.93	98.03	98.23	99.05	NA	NA	NA
AUG	104.70	98.80	99.00	100.60	NA	NA	NA
SEPT	105.48	99.58	99.78	100.17	NA	NA	NA
OCT	107.38	101.48	101.68	102.31	NA	NA	NA
NOV	108.53	102.63	101.01	99.59	NA	NA	NA
DEC80	109.18	103.28	103.48	104.55	NA	NA	NA
JAN81	111.53	105.87	106.07	109.25	96.49	95.08	94.80
FEB	117.89	111.99	115.69	116.97	102.39	100.89	101.92
MAR	121.85	115.95	116.15	117.90	107.59	107.24	107.36
APR	122.45	116.55	116.75	118.10	108.72	108.13	108.53
MAY	123.70	117.83	118.03	119.67	109.56	109.30	109.38
JUN	124.07	118.42	118.62	120.83	109.61	109.90	109.97
JUL	124.15	118.50	118.70	120.50	109.62	110.46	110.73
AUG	124.65	119.00	119.45	120.50	109.46	109.10	109.83
SEPT	124.65	119.00	119.45	120.50	108.90	108.05	108.63
OCT	124.65	119.00	119.45	120.50	109.27	107.39	108.01
NOV	124.65	119.00	119.45	120.50	108.30	106.23	107.16
DEC81	124.65	119.00	119.45	120.50	107.02	107.03	103.63
JAN82	124.65	116.76	119.45	120.50	104.65	99.80	98.43
FEB	123.86	116.98	119.13	120.50	101.43	95.84	96.03
MAR	122.12	115.02	117.42	119.00	95.65	93.52	94.04
APR	118.27	107.42	110.35	108.67	93.86	91.91	93.62
MAY	119.52	107.42	110.52	106.96	95.29	94.87	96.52
JUN	120.97	108.87	112.12	109.70	100.71	101.48	102.01
JUL	123.05	110.95	114.20	111.30	102.72	105.80	108.04
AUG	123.50	111.74	114.65	111.30	103.76	105.13	103.94
SEPT	123.50	111.61	114.65	111.30	103.05	102.90	100.71
OCT	123.43	111.40	114.65	111.30	99.64	101.46	98.15
NOV	123.00	111.20	114.65	111.30	97.64	95.95	94.47
DEC82	121.88	109.28	114.25	111.30	NA	NA	NA

Note: Seattle, Los Angeles and San Francisco data from Platt's

TABLE IV-N-8a
REGULAR LEADED CTW
ALASKA CTW PRICES LESS SEA CTW LESS GPM

	FAI	ANC	KET	DUT	BET
JAN80	-6.47	-6.84	-5.75	NA	NA
FEB	NA	NA	NA	NA	NA
MAR	-3.10	-8.48	-7.46	NA	NA
APR	-11.32	-11.34	-10.36	NA	NA
MAY	-9.93	-9.87	-8.88	NA	NA
JUN	-6.67	-6.61	-5.64	NA	NA
JUL	-3.12	-3.06	-2.20	NA	NA
AUG	-0.37	-0.31	0.64	NA	NA
SEPT	-0.68	-0.62	0.28	NA	NA
OCT	1.50	1.57	2.44	NA	NA
NOV	3.00	3.06	0.33	NA	NA
DEC80	4.46	4.52	5.51	NA	NA
JAN81	7.60	7.98	9.22	NA	NA
FEB	5.89	6.26	7.62	NA	NA
MAR	4.23	4.78	6.09	NA	NA
APR	3.72	4.28	5.59	NA	NA
MAY	4.31	4.90	6.17	NA	NA
JUN	4.24	5.11	6.32	NA	NA
JUL	4.75	5.87	7.00	NA	NA
AUG	5.68	6.80	8.12	NA	NA
SEPT	5.86	6.98	8.27	NA	NA
OCT	5.95	7.07	8.28	NA	NA
NOV	6.59	7.71	8.99	NA	NA
DEC81	8.42	9.54	10.76	NA	NA
JAN82	10.23	9.11	12.65	13.53	16.53
FEB	12.70	12.59	15.64	16.84	19.84
MAR	16.31	15.97	19.20	20.60	25.10
APR	14.58	10.85	14.69	12.30	21.23
MAY	14.16	9.32	13.39	8.91	14.55
JUN	10.49	5.66	9.83	6.49	9.39
JUL	7.43	2.86	7.18	3.36	4.66
AUG	9.78	5.26	9.18	4.91	8.61
SEPT	11.05	6.24	10.26	5.99	9.69
OCT	14.10	9.15	13.32	9.05	12.75
NOV	15.65	10.93	15.39	11.12	14.82
DEC82	NA	NA	NA	NA	NA

TABLE IV-N-8b

REGULAR LEADED CTW

ALASKA CTW PRICE LESS SF CTW LESS GPM

	FAI	ANC	KET	DUT	BET
JAN80	-5.10	-5.48	-4.31	-4.87	-5.29
FEB	NA	NA	NA	NA	NA
MAR	-7.67	-8.04	-6.97	-7.43	-14.43
APR	-9.73	-9.75	-8.72	-9.14	-9.14
MAY	-10.06	-10.00	-8.96	-9.39	-11.45
JUN	-7.48	-7.42	-6.40	-6.81	-12.11
JUL	-5.42	-5.35	-4.44	-4.76	-12.21
AUG	-2.98	-2.92	-1.90	-2.33	-5.33
SEPT	-1.91	-1.85	-0.89	-1.26	-3.39
OCT	1.24	1.30	2.23	1.89	-1.82
NOV	4.55	4.61	1.94	1.53	0.54
DEC80	5.27	5.33	6.40	5.92	6.76
JAN81	8.58	8.95	10.30	9.77	8.91
FEB	6.47	6.84	8.33	11.51	2.94
MAR	4.10	4.65	6.08	6.28	-3.22
APR	3.80	4.36	5.79	5.59	3.39
MAY	3.48	4.08	5.44	5.60	0.83
JUN	3.23	4.10	5.39	6.32	0.15
JUL	3.71	4.83	6.04	7.20	6.20
AUG	5.28	6.40	7.78	8.28	7.28
SEPT	6.57	7.69	9.04	9.57	8.57
OCT	7.29	8.41	9.65	10.29	9.29
NOV	8.15	9.26	10.60	11.15	10.15
DEC81	7.95	9.07	10.33	10.96	13.96
JAN82	14.94	13.82	17.39	17.93	20.93
FEB	17.75	17.64	20.72	21.53	24.53
MAR	18.36	18.03	21.27	22.39	26.89
APR	15.88	12.15	15.98	13.43	22.36
MAY	14.26	9.43	13.49	8.85	14.49
JUN	10.01	5.18	9.34	5.90	8.80
JUL	6.86	2.29	6.63	2.52	3.82
AUG	7.82	3.30	7.23	2.75	6.45
SEPT	10.41	5.60	9.62	5.18	8.88
OCT	12.94	7.99	12.15	7.78	11.48
NOV	16.58	11.86	16.33	11.85	15.55
DEC82	NA	NA	NA	NA	NA

TABLE IV-N-8c
REGULAR LEADED CTW
ALASKA CTW PRICE LESS LA CTW LESS GPM

	FAI	ANC	KET	DUT	BET
JAN80	-5.50	-5.88	-4.54	-5.26	-5.68
FEB	NA	NA	NA	NA	NA
MAR	-8.05	-8.43	-7.20	-7.80	-14.80
APR	-10.11	-10.14	-8.95	-9.51	-9.51
MAY	-10.44	-10.38	-9.18	-9.76	-11.82
JUN	-7.86	-7.80	-6.63	-7.17	-12.47
JUL	-5.79	-5.73	-4.67	-5.13	-12.58
AUG	-3.38	-3.32	-2.13	-2.72	-5.72
SEPT	-2.29	-2.23	-1.12	-1.63	-3.77
OCT	0.86	0.92	2.00	1.52	-2.19
NOV	4.17	4.23	1.72	1.15	0.16
DEC80	4.87	4.93	6.17	5.53	6.37
JAN81	8.40	8.78	10.23	9.62	8.77
FEB	4.77	5.14	6.75	9.84	1.27
MAR	3.04	3.59	5.14	5.25	-4.25
APR	2.34	2.90	4.45	4.17	1.97
MAY	2.68	3.27	4.75	4.82	0.05
JUN	2.90	3.77	5.17	6.02	-0.15
JUL	2.84	3.95	5.31	6.36	5.36
AUG	4.91	6.03	7.54	7.93	6.93
SEPT	5.52	6.64	8.12	8.55	7.55
OCT	5.91	7.03	8.38	8.94	7.94
NOV	6.89	8.01	9.47	9.92	8.92
DEC81	10.47	11.59	12.96	13.50	16.50
JAN82	14.97	13.85	17.55	17.99	20.99
FEB	16.50	16.39	19.62	20.31	23.31
MAR	17.05	16.72	20.08	21.10	25.60
APR	13.88	10.14	14.08	11.45	20.38
MAY	12.31	7.48	11.65	6.93	12.57
JUN	8.30	3.47	7.72	4.21	7.11
JUL	4.33	-0.24	4.22	0.01	1.31
AUG	8.91	4.39	8.43	3.86	7.56
SEPT	12.22	7.40	11.53	7.00	10.70
OCT	14.97	10.01	14.27	9.82	13.52
NOV	18.23	13.51	18.09	13.52	17.22
DEC82	NA	NA	NA	NA	NA

TABLE IV-N-9a
REGULAR LEADED MARKUPS FROM CTW

	FAI	ANC	c/g SEA	SF	LA
JAN80	NA	NA	7.40	16.50	16.62
FEB	23.52	NA	NA	NA	NA
MAR	NA	NA	10.97	15.29	15.81
APR	NA	NA	9.82	13.29	13.19
MAY	24.94	NA	8.82	10.95	10.11
JUN	NA	NA	8.49	9.92	8.45
JUL	NA	NA	9.50	9.16	7.42
AUG	23.50	NA	10.41	10.16	8.41
SEPT	NA	NA	10.72	10.49	8.47
OCT	NA	NA	9.94	12.04	10.02
NOV	21.43	NA	9.72	13.34	11.47
DEC80	NA	NA	9.91	12.83	10.85
JAN81	13.57	NA	10.61	14.53	12.93
FEB	NA	NA	11.79	16.04	13.24
MAR	17.15	NA	9.84	11.42	9.55
APR	NA	NA	8.87	10.62	8.26
MAY	17.80	NA	8.63	9.73	7.93
JUN	NA	NA	8.93	9.73	8.10
JUL	17.05	NA	9.58	10.26	8.02
AUG	15.85	NA	10.00	11.12	9.36
SEPT	15.75	8.47	9.79	11.93	9.32
OCT	15.85	7.96	9.80	12.54	9.58
NOV	15.65	7.34	8.64	11.92	8.86
DEC81	16.05	4.93	9.27	10.59	11.23
JAN82	16.05	6.38	9.26	15.88	13.63
FEB	16.54	5.93	7.79	15.23	11.64
MAR	17.58	6.51	7.81	11.89	9.19
APR	18.63	10.60	7.36	10.78	7.44
MAY	16.58	6.85	5.87	7.80	4.61
JUN	16.43	6.16	5.29	7.77	4.11
JUL	16.95	6.03	4.89	8.98	4.09
AUG	16.56	5.52	6.36	9.09	8.08
SEPT	16.60	5.73	5.23	9.79	8.75
OCT	16.27	5.66	4.63	9.91	8.27
NOV	16.40	4.92	2.68	10.18	8.00
DEC82	17.58	5.61	NA	NA	NA
DATA SOURCES:					
retail:	FBNSB	Lundberg	Lundberg	Lundberg	Lundberg
CTW:	study	study	Platt's	Platt's	Platt's

TABLE IV-N-9b
REGULAR UN-LEADED MARKUPS FROM CTW
c/g

	FAI	ANC	SEA	SF	LA
JAN80	NA	NA	NA	NA	NA
FEB	23.66	NA	NA	NA	NA
MAR	NA	NA	NA	NA	NA
APR	NA	NA	NA	NA	NA
MAY	25.37	NA	NA	NA	NA
JUN	NA	NA	NA	NA	NA
JUL	NA	NA	NA	NA	NA
AUG	24.20	NA	NA	NA	NA
SEPT	NA	NA	NA	NA	NA
OCT	NA	NA	NA	NA	NA
NOV	21.07	NA	NA	NA	NA
DEC80	NA	NA	NA	NA	NA
JAN81	17.47	NA	13.41	17.87	15.94
FEB	NA	NA	14.14	19.56	16.42
MAR	18.55	NA	12.89	14.98	12.89
APR	NA	NA	12.29	14.45	12.06
MAY	19.50	NA	12.03	14.05	11.83
JUN	NA	NA	12.98	14.17	11.62
JUL	19.35	NA	13.40	14.16	11.25
AUG	18.65	NA	13.61	15.23	12.97
SEPT	18.35	13.95	14.01	15.73	12.45
OCT	18.45	12.66	13.64	16.39	13.07
NOV	18.25	11.74	13.27	15.87	11.74
DEC81	18.75	8.92	13.52	13.74	13.93
JAN82	18.65	11.24	13.93	18.95	16.49
FEB	19.14	10.50	12.64	18.69	14.47
MAR	19.98	10.91	12.75	15.56	11.46
APR	20.93	15.87	11.61	14.60	9.60
MAY	19.18	12.67	9.99	11.51	6.89
JUN	18.83	12.14	8.84	10.70	6.79
JUL	19.05	11.74	11.15	12.42	6.59
AUG	19.00	11.34	10.10	13.21	11.10
SEPT	19.10	11.46	8.78	13.81	11.83
OCT	18.97	11.60	8.60	12.83	11.03
NOV	19.20	11.07	6.82	14.82	10.82
DEC82	20.12	12.02	NA	NA	NA
DATA SOURCES:					
retail:	FBNSB	Lundberg	Lundberg	Lundberg	Lundberg
CTW:	study	study	Platt's	Platt's	Platt's

TABLE IV-N-10a
REGULAR LEADED
CTW PRICE LESS LUNDBERG WHOLESALE
c/g

	ANC	SEA	SF	LA
JAN80	NA	4.68	-2.41	-2.70
FEB	NA	NA	NA	NA
MAR	NA	1.94	-0.95	-1.73
APR	NA	3.00	0.27	-0.39
MAY	NA	3.64	2.04	1.67
JUN	NA	3.29	2.33	2.00
JUL	NA	1.18	1.86	1.55
AUG	NA	-0.04	0.87	0.56
SEPT	NA	-0.48	0.87	0.41
OCT	NA	-0.40	-0.67	-1.13
NOV	NA	-0.84	-3.27	-3.48
DEC80	NA	-1.97	-4.16	-4.04
JAN81	NA	-3.22	-6.44	-6.53
FEB	NA	-3.94	-7.22	-6.18
MAR	NA	-1.98	-3.04	-2.60
APR	NA	-1.56	-2.94	-2.03
MAY	NA	-1.58	-2.47	-2.21
JUN	NA	-2.37	-2.69	-2.84
JUL	NA	-2.86	-3.06	-2.58
AUG	NA	-3.19	-3.70	-3.78
SEPT	-0.50	-3.36	-4.47	-3.97
OCT	-0.33	-3.37	-5.08	-4.23
NOV	0.41	-3.71	-5.02	-4.16
DEC81	0.80	-4.30	-3.52	-6.38
JAN82	-1.14	-4.38	-8.49	-8.70
FEB	-0.63	-4.78	-8.77	-8.15
MAR	-1.87	-3.43	-5.24	-4.64
APR	-5.27	-2.78	-3.91	-2.41
MAY	-2.24	-2.78	-3.10	-1.66
JUN	-0.79	-2.35	-3.33	-1.70
JUL	-0.70	-1.58	-4.12	-1.15
AUG	-0.22	-2.46	-3.81	-3.98
SEPT	-0.15	-1.20	-3.72	-3.81
OCT	-0.28	-1.34	-4.19	-4.25
NOV	0.11	-0.50	-5.08	-5.02
DEC82	0.13	NA	NA	NA

CTW data: Platt's for SEA, SF, LA; ANC study

TABLE IV-N-10b
REGULAR UNLEADED
CTW PRICE LESS LUNDBERG WHOLESALE
c/g

	ANC	SEA	SF	LA
JAN80	NA	NA	NA	NA
FEB	NA	NA	NA	NA
MAR	NA	NA	NA	NA
APR	NA	NA	NA	NA
MAY	NA	NA	NA	NA
JUN	NA	NA	NA	NA
JUL	NA	NA	NA	NA
AUG	NA	NA	NA	NA
SEPT	NA	NA	NA	NA
OCT	NA	NA	NA	NA
NOV	NA	NA	NA	NA
DEC80	NA	NA	NA	NA
JAN81	NA	-3.21	-6.22	-6.53
FEB	NA	-3.13	-7.05	-6.41
MAR	NA	-1.67	-2.71	-2.87
APR	NA	-1.44	-2.81	-2.58
MAY	NA	-1.36	-2.78	-2.86
JUN	NA	-2.73	-3.13	-3.21
JUL	NA	-3.23	-2.99	-2.75
AUG	NA	-3.33	-4.05	-4.40
SEPT	-1.30	-3.93	-4.62	-4.23
OCT	-0.88	-3.56	-5.28	-4.85
NOV	-0.11	-4.04	-5.48	-4.56
DEC81	0.27	-3.67	-2.84	-6.26
JAN82	-1.29	-4.14	-7.89	-9.12
FEB	-0.78	-4.45	-8.52	-8.65
MAR	-2.05	-3.99	-5.32	-5.14
APR	-5.80	-2.84	-4.12	-2.56
MAY	-2.85	-2.98	-3.09	-1.55
JUN	-1.27	-2.17	-2.35	-1.53
JUL	-1.11	-4.09	-3.57	-0.56
AUG	-0.49	-2.37	-3.87	-3.90
SEPT	-0.44	-0.63	-3.54	-3.78
OCT	-0.57	-1.16	-2.87	-4.02
NOV	-0.18	-0.40	-5.32	-4.86
DEC82	-0.17	NA	NA	NA

CTW data: Platt's for SEA, SF, LA; ANC study

LEGEND TABLE V-O-1

Estimated Costs.

ANS $/B Crude Oil cost using Exhibit-B price delivered to North Pole gate which includes the GVEA tariff (on entering oil only).

RETURN Return Oil to TAPS price adjusted for quality bank penalty.

Estimated Refinery Net Back Product Prices.

JET A-1f Refinery rack price for Jet A-1 sold at Fairbanks International airport.

JET A-1a Refinery net back price for Jet A-1 sold at Anchorge International airport, price includes freight to Anchorage.

JET B Refinery rack price for Jet B.

JP-4 Refinery awarded bid price by DFSC.

#1 OIL Refinery rack price for #1 heating oil.

DF-A Refinery awarded bid price by DFSC.

#2 OIL Refinery rack price for #2 heating oil.

#4 OIL Price paid by GVEA for turbine fuel.

TABLE V-O-1

INPUT COSTS AT NORTH POLE REFINERY GATE,$/B

	JAN81	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC81
ANS $/B	25.11	30.14	30.07	29.61	28.08	27.59	27.51	26.91	26.12	26.18	26.07	25.85
RETURN	23.97	28.99	28.92	28.46	26.93	26.44	26.36	25.76	24.97	25.03	24.92	24.70
PRODUCT PRICES NET BACK NORTH POLE REFINERY, C/G												
JET A-1f	94.91	100.38	103.55	108.00	108.00	108.00	108.00	108.00	108.00	109.81	110.00	110.00
JET A-1a	83.74	89.94	93.99	96.59	96.59	96.52	96.25	96.25	96.25	96.25	96.25	96.25
JET B	92.41	97.88	101.05	105.50	105.50	105.50	105.50	105.50	105.50	107.31	107.50	107.50
JP-4	85.60	85.60	85.60	85.60	85.60	85.60	85.60	85.60	85.60	107.90	107.90	107.90
#1 OIL	95.48	102.25	106.63	107.40	104.40	104.40	104.40	104.40	104.40	110.11	110.40	110.40
DF-A	88.65	88.65	88.65	88.65	88.65	88.65	88.65	88.65	88.65	109.90	109.90	109.90
#2 OIL	90.64	98.25	101.63	102.40	102.40	102.40	102.40	102.40	102.40	105.11	105.40	105.40
#4 OIL	83.00	83.00	83.00	84.00	84.00	84.00	79.00	79.00	79.00	77.00	77.00	77.00

INPUT COSTS AT NORTH POLE REFINERY GATE,$/B

	JAN82	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC82
ANS $/B	25.28	24.00	22.83	22.86	22.99	24.72	24.72	24.91	24.67	24.68	24.15	24.15
RETURN	24.13	22.85	21.68	21.71	21.84	23.57	23.57	23.76	23.52	23.53	23.00	23.00
PRODUCT PRICES NET BACK NORTH POLE REFINERY, C/G												
JET A-1f	108.95	108.95	108.95	106.92	102.75	102.75	102.75	102.75	102.75	102.75	102.75	102.75
JET A-1a	95.20	95.20	95.12	90.84	90.17	90.40	90.10	90.05	90.05	90.05	90.05	90.05
JET B	106.45	106.45	106.45	104.42	100.25	100.25	100.25	100.25	100.25	100.25	100.25	100.25
JP-4	107.90	107.90	107.90	107.90	107.90	107.90	107.90	107.90	107.90	107.90	107.90	107.90
#1 OIL	110.40	110.40	106.75	105.40	103.00	103.00	97.50	97.50	97.50	97.50	97.50	97.50
DF-A	109.90	109.90	109.90	109.90	109.90	109.90	109.90	109.90	109.90	109.90	109.90	109.90
#2 OIL	105.40	105.40	101.75	100.40	98.00	98.00	92.50	92.50	92.50	92.50	92.50	92.50
#4 OIL	72.00	72.00	72.00	70.00	70.00	70.00	72.00	72.00	72.00	72.00	72.00	72.00

EXPLANATION OF TABLE V-P-1a/b

This work table indicates the calculations used in arriving at the estimated annual profit and loss statement in the next two tables. The barrels of each petroleum product (BPCD) are defined in Table III-H-1 and Table III-H-2. This is assumed constant for each day of the year as well as the crude charge. The monthly petroluem product prices (from the previous Table V-O-1) are used to determine the revenue in a given month (REV/MO), the revenue per day in a given month (REV/DY), and the revenue per product barrel in a given month (REV$/B-P). This latter estimate gives an indication of the effect of pricing trends over time.

The raw material costs for the refinery charge and return rates (defined in Table III-H-1 and Table III-H-2), are constant on a daily basis over the year. The crude cost brought into the refinery and the value of the return oil vary monthly and the values presented in Table V-O-1 are utilized in the calculations. The monthly cost of raw material after crediting for the return oil and its penalty is given (INPUT/MO), the cost per day of a given month (INPUT/DY) and the cost of raw material per barrel of product for a given month (IN $/B-P) are calculated.

The difference between the total raw materials and total revenue received in a given month is the markup (MU/MO) and is calculated on a daily basis within a given month (MU/DY). The markup that occurs on each barrel of product for a given month is given by MU,$/B-P. This latter figure gives an indication of the profitability of the refinery over the year on a monthly basis. If the number increases, the refinery is seeking a greater price for its petroleum products compared to its raw material acquisition costs.

TABLE V-P-1a

WORKSHEET

REVENUE ESTIMATES NORTH POLE REFINERY, M$ 1982	JAN82	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC82
JET A-1f	4327	3908	4327	4109	4080	3949	4080	4080	3949	4080	3949	4080
JET A-1a	2863	2586	2861	2644	2712	2631	2710	2708	2621	2708	2621	2708
JET B	762	689	762	724	718	695	718	718	695	718	695	718
JP-4	2978	2690	2978	2882	2978	2882	2978	2978	2882	2978	2882	2978
#1 OIL	1826	1649	1765	1687	1703	1648	1612	1612	1560	1612	1560	1612
DFA	758	685	758	734	758	734	758	758	734	758	734	758
#2 OIL	3623	3272	3498	3340	3369	3260	3179	3179	3077	3179	3077	3179
#4 OIL	759	686	759	714	738	714	759	759	735	759	735	759
REG LEAD	0	0	0	0	0	0	0	0	0	0	0	0
REG UNLD	0	0	0	0	0	0	0	0	0	0	0	0
ASPHALT	0	0	0	0	0	0	0	0	0	0	0	0
REV/MO	17896	16164	17709	16834	17057	16513	16796	16794	16252	16794	16252	16794
REV/DY	577	577	571	561	550	550	542	542	542	542	542	542
REV$/B-P	43.47	43.47	43.02	42.25	41.43	41.45	40.80	40.79	40.79	40.79	40.79	40.79
RAW MATERIAL COST ESTIMATES NORTH POLE REFINERY,M$												
ANS @NPR	33714	28909	30447	29503	30660	31904	32967	33220	31840	32912	31168	32207
RETURN	-21156	-18095	-19009	-18421	-19149	-19999	-20665	-20832	-19957	-20629	-19515	-20166
INPUT/MO	12558	10814	11438	11082	11511	11905	12302	12388	11883	12283	11653	12041
INPUT/DY	405	386	369	369	371	397	397	400	396	396	388	388
IN $/B-P	30.50	29.08	27.78	27.82	27.96	29.88	29.88	30.09	29.83	29.84	29.25	29.25
DERIVED PRODUCT MARK-UP ABOVE RAW MATERIAL COSTS, M$												
MU/MO	5339	5350	6271	5751	5546	4608	4494	4406	4370	4511	4600	4753
MU/DY	172.22	191.09	202.28	191.71	178.89	153.61	144.98	142.12	145.65	145.53	153.32	153.32
MU,$/B-P	12.97	14.39	15.23	14.44	13.47	11.57	10.92	10.70	10.97	10.96	11.55	11.55

TABLE V-P-1b

WORKSHEET

REVENUE ESTIMATES NORTH POLE REFINERY, M$ 1981	JAN81	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC81
JET A-1f	3077	2939	3357	3388	3501	3388	3501	3501	3388	3560	3451	3566
JET A-1a	2846	2761	3194	3177	3282	3174	3271	3271	3165	3271	3165	3271
JET B	2033	1945	2223	2247	2321	2247	2321	2321	2247	2361	2289	2365
JP-4	1605	1450	1605	1553	1605	1553	1605	1605	1553	2023	1958	2023
#1 OIL	1304	1274	1456	1420	1426	1380	1426	1426	1380	1504	1459	1508
DFA	578	522	578	560	578	560	578	578	560	717	694	717
#2 OIL	2360	2311	2646	2580	2666	2580	2666	2666	2580	2737	2656	2745
#4 OIL	670	605	670	656	678	656	638	638	617	622	602	622
REG LEAD	0	0	0	0	0	0	0	0	0	0	0	0
REG UNLD	0	0	0	0	0	0	0	0	0	0	0	0
ASPHALT	0	0	0	0	0	0	0	0	0	0	0	0
REV/MO	14473	13807	15730	15580	16059	15538	16007	16007	15490	16794	16274	16816
REV/DY	467	493	507	519	518	518	516	516	516	542	542	542
REV$/B-P	37.65	39.77	40.92	41.88	41.78	41.77	41.64	41.64	41.64	43.69	43.75	43.75
RAW MATERIAL COST ESTIMATES NORTH POLE REFINERY,M$												
ANS @NPR	32183	34888	38536	36722	35986	34217	35255	34486	32394	33551	32332	33128
RETURN	-21010	-22957	-25356	-24148	-23611	-22434	-23111	-22585	-21187	-21945	-21144	-21656
INPUT/MO	11173	11930	13180	12575	12375	11783	12144	11901	11207	11605	11188	11472
INPUT/DY	360	426	425	419	399	393	392	384	374	374	373	370
IN $/B-P	29.07	34.36	34.29	33.80	32.19	31.68	31.59	30.96	30.13	30.19	30.07	29.84
DERIVED PRODUCT MARK-UP ABOVE RAW MATERIAL COSTS, M$												
MU/MO	3300	1877	2550	3006	3684	3755	3863	4106	4283	5189	5086	5344
MU/DY	106.45	67.02	82.26	100.19	118.85	125.17	124.61	132.44	142.76	167.38	169.53	172.40
MU,$/B-P	8.58	5.40	6.63	8.08	9.58	10.09	10.05	10.68	11.51	13.50	13.67	13.90

EXPLANATION OF TABLE V-P-2a/b

This table summarizes by rows from the preceding, Table V-P-1a/b, product revenues (REV. MM$/Y) and raw material costs (COST MM$/Y) over the twelve months. These revenues and costs are each summarized on the SUMMARY row to give a year total. The contribution of each as a percentage of total cost or total revenue is determined (% COST and $ REV.) The average revenue per barrel of a particular petroleum product is calculated (ave. $/B) as well as for all products in the summary row.

A similar calculation is made for raw material costs. The raw material average cost is by actual barrel and the refinery's total cost of raw materials given on the summary line divided by the net "retained" barrels is the total average cost per barrel retained. The final crude cost average is higher than actual price per barrel. This is because NPR receives a "lower" price on its return oil and the total of the "charges" placed on the return oil and fuel/loss in the refinery are included in the final average price.

This final average crude cost determines the markup per barrel of product. In the calculation of the markup, the cost per barrel of product is determined from the total cost of materials divided by the total product barrels over a given year. Hence the markup that is used here relects not only crude costs but refinery fuel. This column (MU $/B) gives an indication of the more profitable products. The % of Rev. column indicates which markets are most critical to the refinery's total revenue picture.

The table's gross revenue and gross cost of raw material enter the profit and loss calculations in the next table.

TABLE V-P-2a

NORTH POLE REFINERY PRODUCT/CRUDE SUMMARY 1982

PRODUCT	VOL %	BPCD	ave. $/B	MU $/B	REV. MM$/Y	% REV.
JET A-1	22.97	3050	43.94	14.68	48.92	24.23
JET A-1a	17.39	2310	38.40	9.13	32.37	16.04
JET B	4.14	550	42.89	13.63	8.61	4.27
JP-4	15.96	2120	45.32	16.05	35.07	17.37
#1 OIL	9.56	1270	42.81	13.55	19.85	9.83
DFA	3.99	530	46.16	16.89	8.93	4.42
#2 OIL	19.86	2640	40.71	11.45	39.23	19.44
#4 OIL	6.10	810	30.03	0.76	8.88	4.40
REG LEAD	0.00	0	0.00	0.00	0.00	0.00
REG UNLD	0.00	0	0.00	0.00	0.00	0.00
ASPHALT	0.00	0	0.00	0.00	0.00	0.00
SUMMARY	100.00	13280	41.64	12.38	201.86	100.00

INPUTS	% CHARGE	BPCD	ave $/B	+/- ave.	COST MM$/Y	% COST
ANS @NPR	100.00	43020	24.17	-3.68	379.45	267.49
RETURN	67.55	-29060	22.40	-5.44	-237.59	
SUMMARY	100.00	13960	27.84		141.86	267.49

TABLE V-P-2b

NORTH POLE REFINERY PRODUCT/CRUDE SUMMARY 1981

PRODUCT	VOL %	BPCD	ave. $/B	MU $/B	REV. MM$/Y	% REV.
JET A-1	20.08	2490	44.69	13.20	40.62	21.54
JET A-1a	21.05	2610	39.73	8.24	37.85	20.07
JET B	13.63	1690	43.64	12.15	26.92	14.28
JP-4	11.61	1440	38.31	6.82	20.14	10.68
#1 OIL	8.46	1049	44.30	12.81	16.96	8.99
DFA	4.04	501	39.48	7.99	7.22	3.83
#2 OIL	16.13	2000	42.73	11.24	31.20	16.54
#4 OIL	5.00	620	33.91	2.41	7.67	4.07
REG LEAD	0.00	0	0.00	0.00	0.00	0.00
REG UNLD	0.00	0	0.00	0.00	0.00	0.00
ASPHALT	0.00	0	0.00	0.00	0.00	0.00
SUMMARY	100.00	12400	41.66	10.17	188.58	100.00

INPUTS	% CHARGE	BPCD	ave $/B	+/- ave.	COST MM$/Y	% COST
ANS @NPR	100.00	41340	27.42	-2.49	413.68	290.23
RETURN	68.41	-28280	26.27	-3.63	-271.14	
SUMMARY	100.00	13060	29.90		142.53	290.23

EXPLANATION OF TABLE V-P-3a/b

The estimated profit and loss statement as presented contains a number of assumptions which make this a conservative estimate of the refineries operation in the given year.

Three columns are presented, M$/DY which is on a thousands of dollars daily basis over the year, MM$/YR which is the total million of dollars for the year and $ B-PROD which is on a dollars per barrel of product over the year.

PRODUCT REVENUE comes from Table V-P-2a/b and represents the total revenues of the refinery.
CRUDE PURCHASES comes from Table V-P-2a/b and represents the total cost of raw materials used in the refinery.
GROSS MARGIN, MU is the difference between the product revenue and crude cost.
% TO SALES is a performance measure that shows the gross margin as a percentage of the total sales. The higher the percentage the greater the markup which includes operations costs and profit.
OPERATIONS is explained in the text.
DEPRECIATION is based on assessed value of plant using a fifteen year life, straight line.
INS/TAX @2 % approximate measure of local taxes and insurance using assessed value of plant.
INTEREST, 11% assumed the plant equity was 30% and financing 70% and as if at day one (no debt retirement encountered) and interest on full 70%. Most FY reports of Alaska refiners spoke to lower interest rates.
TOTAL OPER. COSTS is merely the sum of the operations, depreciation, ins/tax and interest costs.
TAXES @54% F/S the final rate of both State and Federal taxes is assumed to be 54%. Most FY reports of Alaska refiners spoke to lower effective rates.
INVESTMENT CREDITS none were assumed.
NET EARNINGS is the after tax profit of the refinery.

EXPLANATION OF TABLE V-P-3a/b cont'd

The cash flow is determined by adding back depreciation to net earnings and providing for debt service on the 70% financing. This cash flow may be used by the home corporation to invest in capital expenditures, pay off debt, make up for other corporate loss areas.

Payout on the assessed value of the refinery is the number of years when the accumulated annual cash flow will equal (and subsequently exceed) the investment in the refinery. Obviously the shorter the payout period the more attractive the business.

DCF on plant investment is the discounted cash flow rate of return yielded by the cash flow from the original investment, which in this analysis is conservative because the interest expense is held constant over the fifteen year life of the facility, most DCF calculations do not include debt service, the depreciation used in straight line (better formulations exist for tax purposes), and most of the cost items are conservative high.

The higher the DCF value the better the return on the investment. A MORE INTERESTING CALCULATION IS THE RATE OF RETURN ON EQUITY. Since information on each refinery's financing and equity position was not available this calculation could not be made; it is of value because it indicates the return on the equity, the owners investment excluding the banks financing. In this instance it would be quite high.

TABLE V-P-3a

NORTH POLE REFINERY ESTIMATED INCOME STATEMENT
1982

ITEM	M$/DY	MM$/YR	$ B-PROD
PRODUCT REVENUE	553.03	201.86	41.64
CRUDE PURCHASES	388.65	141.86	29.27
GROSS MARGIN,MU	164.38	60.00	12.36
% TO SALES		29.72	
OPERATIONS	40.22	14.68	2.88
DEPRECIATION	7.31	2.67	0.55
INS/TAX @ 2 %	2.19	0.80	0.17
INTEREST,11%	8.44	3.08	0.64
TOTAL OPER.COSTS	58.16	21.23	4.38
NET INCOME	106.22	38.77	8.00
TAXES @ 54 % F/S	57.36	20.94	4.32
INVESTMENT CREDITS	0.00	0.00	0.00
NET EARNINGS	48.86	17.83	3.68
DEPRECIATION	7.31	2.67	0.55
DEBT SERVICE	-5.11	-1.87	-0.39
CASH FLOW	51.05	18.63	3.84
payout $ 40.00MM:plant		2.15	
DCF on plant at 15 years		46.42 %	
payout $ 80.00MM:assets(plant+WC)		4.29	
DCF on plant and WC at 15 years		22.13 %	

TABLE V-P-3b

NORTH POLE REFINERY ESTIMATED INCOME STATEMENT
1981

ITEM	M$/DY	MM$/YR	$ per B-PROD
PRODUCT REVENUE	516.64	188.58	41.66
CRUDE PURCHASES	390.50	142.53	31.49
GROSS MARGIN,MU	126.14	46.04	10.17
% TO SALES		24.42	
OPERATIONS	38.65	14.11	2.96
DEPRECIATION	7.31	2.67	0.59
INS/TAX @ 2 %	2.19	0.80	0.18
INTEREST,11%	8.44	3.08	0.68
TOTAL OPER.COSTS	56.59	20.65	4.56
NET INCOME	69.55	25.39	5.61
TAXES @ 54 % F/S	37.56	13.71	3.03
INVESTMENT CREDITS	0.00	0.00	0.00
NET EARNINGS	31.99	11.68	2.58
DEPRECIATION	7.31	2.67	0.59
DEBT SERVICE	-5.11	-1.87	-0.41
CASH FLOW	34.19	12.48	2.76
payout $ 40.00MM:plant		3.21	
DCF on plant at 15 years		30.63 %	
payout $ 80.00MM:assets(plant+WC)		6.41	
DCF on plant and WC at 15 years		13.16 %	

EXPLANATION OF TABLE V-O-1a/b

Nikiski Refinery Gate Costs and "Rack" prices

This table provides the estimated basic raw material costs and product costs for the Nikiski refineries: Tesoro and Chevron. Tesoro unlike NPR does not have a public "refinery rack price" but offers a CTW price at its refinery and at the Tesoro terminal at the Anchorge Dock. The terminals at Anchorage therefore act as an extension of the refinery connected by the Nikiski pipeline. For this reason the profitability of the Nikiski refineries is determined by using the CTW prices at Anchorage for heating oils and the CTW prices plus Lundberg prices (Sept'1981+) for gasoline. This net back pricing reflects the behavior Tesoro as both refiner and wholesaler in Anchorage. The fact that Tesoro exchanges/trades/sells vast quantitites of gasoline would mean that it is to their advantage to do so.

Crude Costs

ANS @NIK is the delivered cost to Nikiski of ANS crude oil after paying the TAPS tariff and tne general purpose marine tariff from Valdez. The ANS is the weighted average of all the producers prices.
INDO@NIK is the delivered cost to Nikiski from Sanga Sanga by general purpose marine tanker of Tesoro's imported Indonesian crude oil. Price used is the official price as reported in Tesoro FY reports.
COOK@NIK is the royalty oil price of Cook Inlet crude plus marine transport from the Drift River terminal to Nikiski.
KENI@NIK is the royalty oil price of Cook Inlet crude and available on the east side of the Inlet.
ASPHmix@ is the asphalt mix that Chevron imports from its California refinery(s) to Nikiski. The price is taken over the year as the summer season and represents a cutback asphalt price in California discounted (30 %) off of CTW price plus general purpose freight to Nikiski. Chevron only runs this in a batch mode so the prices are focused upon the summer.

EXPLANATION OF TABLE V-Q-1a/b cont'd

Product Prices Net Back to Refinery

All products produced by the refinery for use in Alaska were assumed to have the same net back price to the Nikiski refinery which was determined as follows.

Jet A-1 was the CTW posted price in Anchorage less the Nikiski pipeline tariff.
Jet B was the approximaate awarded bid price by DFSC for JP-4.
#1 Oil was the CTW posted price in Anchorge less the Nikiski pipeline.

#2 Oil was the CTW posted price in Anchorage less the Nikiski pipeline.
REG LEAD was the CTW posted price in Anchorage less the Nikiski pipeline.
REG UNLD was the CTW posted price in Anchorage less the Nikiski pipeline.
1+%S FO6 was the U.S. average price paid for high sulfur No. 6 fuel oil less the marine transportation from Nikiski to California (typical of Chevron's residual oil).
BUNKER C was the California average CTW price for Bunker C fuel oil less the marine transportation from Nikiski to California.
ASPHALT was a building contractors price from the refinery.

TAPLE V-Q-1b

INPUT COSTS AT NIKISKI REFINERY GATE $/B

	JAN82	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC82
ANS @NIK	27.64	26.03	24.93	25.29	25.53	26.80	26.75	26.88	26.69	26.68	26.32	26.32
INDO@NIK	38.51	38.60	38.45	38.28	38.28	38.19	38.37	38.27	38.22	38.12	38.27	38.27
COOK@NIK	29.87	29.87	28.88	27.84	27.9	27.27	28.45	28.31	28.41	28.32	28.54	28.54
KENI@NIK	29.63	29.63	28.63	27.60	27.69	27.03	28.21	28.07	28.17	28.07	28.30	28.30
ASPHmix@	23.14	23.14	23.14	23.14	23.14	23.14	23.14	23.14	23.14	23.14	23.14	23.14

PRODUCT PRICES NET BACK NIKISKI REFINERY C/G

JET A-1	118.36	118.36	118.29	114.01	113.34	113.56	113.56	113.56	113.56	113.97	114.93	115.06
JET B	101.60	101.60	101.60	101.60	101.60	101.60	101.60	101.60	101.60	101.60	101.60	101.60
#1 OIL	109.74	109.71	109.45	106.25	106.50	106.61	106.61	107.45	107.83	107.81	108.90	109.86
#2 OIL	103.74	103.71	101.11	99.26	99.00	99.11	99.11	99.11	99.33	99.31	100.10	100.61
REG LEAD	111.76	111.47	110.75	106.90	104.03	104.02	106.01	106.32	106.13	106.04	105.45	103.51
REG UNLD	116.41	116.12	115.43	111.58	108.64	108.60	110.42	110.59	110.41	110.33	109.74	107.81
.3%S FO6	75.12	71.80	70.23	70.77	69.03	63.41	68.08	65.35	68.61	68.71	68.56	68.56
1+%S FO6	55.05	52.59	52.37	52.81	56.58	57.1	54.04	57.11	57.35	56.13	55.13	55.13
BUNKER C	57.43	58.64	58.92	57.22	57.64	58.72	60.49	61.63	61.88	61.97	61.83	61.83
ASPHALT	96.14	96.14	96.14	96.14	96.14	96.14	96.14	96.14	96.14	96.14	96.14	96.14

TABLE V-Q-1a

INPUT COSTS AT NIKISKI REFINERY GATE $/B	JAN81	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC81
ANS @NIK	27.61	32.32	32.29	31.81	30.56	29.92	29.85	29.33	28.73	28.82	28.72	28.54
INDO@NIK	38.77	38.97	38.90	38.89	38.80	38.70	38.58	38.46	38.42	38.26	38.40	38.28
COOK@NIK	32.58	32.58	32.04	31.83	31.83	31.23	31.21	30.52	30.51	30.18	30.18	30.69
KENI@NIK	32.36	32.36	31.82	31.61	31.61	31.01	30.99	30.30	30.29	29.96	29.96	30.47
ASPHmix@	25.40	25.40	25.40	25.40	25.40	25.40	25.40	25.40	25.40	25.40	25.40	25.40
PRODUCT PRICES NET BACK NIKISKI REFINERY C/G												
JET A-1	105.30	111.50	115.75	118.36	118.36	118.36	118.36	118.36	118.36	118.36	118.36	118.36
JET B	99.00	99.00	99.00	99.00	99.00	99.00	99.00	99.00	99.00	101.60	101.60	101.60
#1 OIL	97.55	102.26	105.01	105.89	107.34	107.76	108.76	108.76	109.00	109.26	108.04	110.01
#2 OIL	91.75	97.26	100.01	100.89	102.34	102.76	103.76	103.76	103.76	103.76	102.13	104.01
REG LEAD	101.29	105.15	109.11	109.71	111.00	111.70	112.36	112.86	113.36	113.19	112.45	112.06
REG UNLD	104.23	110.35	114.31	114.91	116.20	116.78	116.86	117.36	118.66	118.24	117.47	117.09
.3%S FO6	77.99	86.79	86.23	81.18	76.39	63.15	66.87	69.17	67.85	68.83	72.16	71.53
1+%S FO6	65.73	65.17	66.63	63.78	64.86	56.76	57.49	58.57	55.69	56.21	58.78	57.22
BUNKER C	59.32	58.52	59.97	63.54	63.22	63.17	61.11	58.88	55.21	55.66	56.94	57.72
ASPHALT	83.38	83.38	83.38	83.38	83.38	83.38	83.38	83.38	83.38	83.38	83.38	83.38

TABLE V-R-1a

REVENUE TESORO REFINERY 1982, M$	JAN82	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC82
JET A-1	19448	17566	19437	18129	18623	18058	18660	18660	18058	18726	18275	18906
JET B	1310	1183	1310	1267	1310	1267	1310	1310	1267	1310	1267	1310
#2 OIL	5281	4769	5147	4890	5040	4883	5046	5046	4894	5056	4931	5122
REG LEAD	11166	10059	11065	10335	10393	10057	10591	10622	10261	10594	10195	10342
REG UNLD	5815	5239	5766	5394	5427	5245	5516	5524	5337	5511	5305	5386
.3%S FO6	11553	10654	11852	11139	11594	11432	12169	12398	12046	12466	12037	12438
REV/MO	54573	49470	54577	51154	52386	50942	53291	53560	51863	53664	52011	53503
REV/DY	1760	1767	1761	1705	1690	1698	1719	1728	1729	1731	1734	1726
REV $/B	39.58	39.72	39.58	38.34	37.99	38.18	38.65	38.84	38.87	38.92	38.98	38.80
INPUT COSTS AT TESORO REFINERY,M$												
ANS @NIK	4645	3951	4189	4113	4290	4358	4495	4517	4340	4483	4280	4423
INDO@NIK	3044	2756	3039	2929	3026	2921	3033	3025	2924	3014	2928	3025
COOK@NIK	25075	22645	24239	22618	23449	22150	23880	23767	23082	23768	23183	23956
KENI@NIK	9325	8421	9011	8406	8715	8231	8877	8835	8580	8835	8618	8905
INPUT/MO	42089	37773	40479	38065	39481	37660	40286	40144	38927	40100	39009	40309
INPUT/DY	1358	1349	1306	1269	1274	1255	1300	1295	1298	1294	1300	1300
INPUT$/B	30.52	30.33	29.36	28.53	28.63	28.22	29.22	29.11	29.17	29.08	29.23	29.23
PRODUCT MARK-UP AT TESORO REFINERY,M$												
GROSS MU	12484	11697	14097	13089	12905	13282	13005	13416	12937	13564	13002	13194
$MU/DY	403	418	455	436	416	443	420	433	431	438	433	426
$MU/B	9.05	9.39	10.22	9.81	9.36	9.95	9.43	9.73	9.69	9.84	9.74	9.57

TABLE V-R-1b

REVENUE TESORO REFINERY 1981, M$

	JAN81	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC81
JET A-1	13367	12785	14694	14541	15025	14541	15025	15025	14541	15025	14541	15025
JET B	812	733	812	786	812	786	812	812	786	833	807	833
#2 OIL	4145	3969	4518	4411	4624	4493	4688	4688	4537	4688	4465	4699
REG LEAD	9258	8680	9973	9704	10145	9980	10270	10316	10027	10346	9947	10243
REG UNLD	4763	4555	5224	5082	5310	5165	5341	5363	5248	5404	5195	5351
.3%S FO6	15393	15472	17020	15508	15077	12062	13199	13653	12961	13586	13783	14118
REV/MO	47739	46195	52241	50031	50994	46926	49335	49857	48099	49882	48738	50270
REV/DY	1540	1650	1685	1668	1645	1564	1591	1608	1603	1609	1625	1622
REV $/B	38.95	41.73	42.62	42.18	41.60	39.56	40.25	40.68	40.55	40.70	41.09	41.01

INPUT COSTS AT TESORO REFINERY,M$

ANS @NIK	4125	4362	4824	4599	4566	4326	4460	4382	4154	4306	4153	4264
INDO@NIK	3365	3055	3376	3267	3368	3251	3349	3339	3227	3321	3225	3323
COOK@NIK	21092	19051	20743	19941	20608	19564	20207	19760	19115	19536	18907	19868
KENI@NIK	11713	10579	11518	11072	11442	10861	11218	10968	10610	10843	10494	11029
INPUT/MO	40295	37047	40461	38880	39984	38002	39233	38449	37106	38006	36779	38484
INPUT/DY	1300	1323	1305	1296	1290	1267	1266	1240	1237	1226	1226	1241
INPUT$/B	32.87	33.46	33.01	32.78	32.62	32.04	32.01	31.37	31.28	31.01	31.01	31.40

PRODUCT MARK-UP AT TESORO REFINERY,M$

MU/MO	7443	9148	11780	11152	11010	8923	10102	11408	10994	11877	11959	11786
MU/DY	240	327	380	372	355	297	326	368	366	383	399	380
MU,$/B	6.07	8.26	9.61	9.40	8.98	7.52	8.24	9.31	9.27	9.69	10.08	9.62

TABLE V-R-2a

TESORO REFINERY PRODUCT/CRUDE SUMMARY 1982

PRODUCT	VOL %	BPCD	ave. $/B	MU $/B	REV. MM$/Y	% REV.
JET A-1	28.37	12620	48.32	19.10	222.54	35.27
JET B	2.23	990	42.67	13.46	15.42	2.44
#2 OIL	8.79	3910	42.12	12.91	60.10	9.53
REG LEAD	17.25	7673	44.88	15.67	125.68	19.92
REG UNLD	8.63	3837	46.76	17.54	65.47	10.38
.3%S FO6	34.73	15450	25.14	-4.08	141.78	22.47
SUMMARY	100.00	44480	36.37	9.65	630.99	100.00

INPUTS	% CHARGE	BPCD	ave $/B	+/- ave.	COST MM$/Y	% COST
ANS @NIK	11.99	5420	26.33	-2.42	52.08	10.98
INDO@NIK	5.64	2550	38.32	9.57	35.66	7.52
COOK@NIK	59.91	27078	28.51	-0.24	281.81	59.41
KENI@NIK	22.46	10152	28.27	-0.48	104.76	22.09
SUMMARY	100.00	45200	28.75		474.32	100.00

TABLE V-R-2b

TESORO REFINERY PRODUCT/CRUDE SUMMARY 1981

PRODUCT	VOL %	BPCD	ave. $/B	MU $/B	REV. MM$/Y	% REV.
JET A-1	24.66	9750	48.92	16.86	174.14	29.50
JET B	1.59	630	41.85	9.79	9.62	1.63
#2 OIL	8.78	3470	42.57	10.50	53.93	9.14
REG LEAD	17.75	7020	46.35	14.29	118.79	20.12
REG UNLD	8.88	3510	48.39	16.32	62.00	10.50
.3%S FO6	38.34	15160	25.00	-7.06	171.83	29.11
SUMMARY	100.00	39540	40.90	8.84	590.31	100.00

INPUTS	% CHARGE	BPCD	ave $/B	+/- ave.	COST MM$/Y	% COST
ANS @NIK	12.00	4820	29.85	-1.70	52.52	11.35
INDO@NIK	6.97	2800	38.62	7.06	39.47	8.53
COOK@NIK	51.98	20884	31.27	-0.28	238.39	51.52
KENI@NIK	29.06	11676	31.05	-0.50	132.35	28.60
SUMMARY	100.00	40180	31.55		462.73	100.00

TABLE V-R-3a

TESORO REFINERY ESTIMATED INCOME STATEMENT
1982

ITEM	M$/DY	MM$/YR	$ B-PROD
PRODUCT REVENUE	1728.75	630.99	38.87
CRUDE PURCHASES	1299.51	474.32	29.22
GROSS MARGIN,MU	429.24	156.67	9.65
% TO SALES		24.83	
OPERATIONS	61.47	22.44	1.36
DEPRECIATION	18.57	6.78	0.42
INS/TAX @ 2 %	5.57	2.03	0.13
INTEREST,11%	13.00	4.75	0.29
TOTAL OPER.COSTS	98.62	36.00	2.22
NET INCOME	330.62	120.68	7.43
TAXES @ 54 % F/S	178.53	65.17	4.01
INVESTMENT CREDITS	0.00	0.00	0.00
NET EARNINGS	152.08	55.51	3.42
DEPRECIATION	18.57	6.78	0.42
DEBT SERVICE	-13.00	-4.75	-0.29
CASH FLOW	157 66	57.54	3.54
RETURN ON INVESTMENT:			
payout $ 101.69MM:plant		1.77 years	
DCF on plant at 15 years		57 %	
payout $ 203.40MM:assets(plant+WC)		3.53 years	
DCF on plant and WC at 15 years		28 %	

TABLE V-R-3b

TESORO REFINERY ESTIMATED INCOME STATEMENT
1981

ITEM	M$/DY	MM$/YR	$ per B-PROD
PRODUCT REVENUE	1617.28	590.31	40.90
CRUDE PURCHASES	1267.74	462.73	32.06
GROSS MARGIN,MU	349.54	127.58	8.84
% TO SALES		21.61	
OPERATIONS	51.43	18.77	1.28
DEPRECIATION	18.57	6.78	0.47
INS/TAX @ 2 %	5.57	2.03	0.14
INTEREST,11%	21.45	7.83	0.54
TOTAL OPER.COSTS	97.03	35.42	2.45
NET INCOME	252.51	92.17	6.39
TAXES @ 54 % F/S	136.36	49.77	3.45
INVESTMENT CREDITS	0.00	0.00	0.00
NET EARNINGS	116.15	42.40	2.94
DEPRECIATION	18.57	6.78	0.47
DEBT SERVICE	-13.00	-4.75	-0.33
CASH FLOW	121.73	44.43	3.08
RETURN ON INVESTMENT:			
payout $ 101.69MM:plant		2.29	
DCF on plant at 15 years		43.50 %	
payout $ 203.40MM:assets(plant+WC)		4.58	
DCF on plant and WC at 15 years		20.50 %	

TABLE V-S-1a

REVENUE CHEVRON REFINERY 1982, M$	JAN82	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC82
JET A-1	3467	3132	3465	3232	3320	3219	3327	3327	3219	3339	3258	3371
JET B	1098	992	1098	1063	1098	1063	1098	1098	1063	1098	1063	1098
#1 OIL	0	0	0	0	0	0	0	0	0	0	0	0
#2 OIL	959	866	935	888	915	887	916	916	889	918	895	930
1+%S FO6	5913	5102	5625	5490	6078	5940	5804	6135	5962	6029	5731	5922
ASPHALT	889	803	869	860	869	860	889	889	860	889	860	889
REV/MO	12326	10894	12012	11533	12300	11969	12034	12365	11993	12272	11807	12210
REV/DY	398	389	387	384	397	399	388	399	400	396	394	394
REV $/B	31.19	30.52	30.39	30.15	31.12	31.29	30.45	31.28	31.35	31.05	30.87	30.89
INPUT COSTS AT CHEVRON REFINERY,M$												
ANS @NIK	10112	8601	9121	8954	9340	9488	9786	9834	9450	9760	9318	9629
COOK@NIK	0	0	0	0	0	0	0	0	0	0	0	0
KENI@NIK	0	0	0	0	0	0	0	0	0	0	0	0
ASPHmix@	1273	1150	1273	1232	1273	1232	1273	1273	1232	1273	1232	1273
INPUT/MO	11385	9752	10394	10186	10613	10721	1106	11107	10682	11033	10550	10902
INPUT/DY	367	348	335	340	342	357	357	358	356	356	352	352
INPUT$/B	28.81	27.32	26.30	26.63	26.85	28.03	27.98	28.10	27.93	27.91	27.58	27.58
PRODUCT MARK-UP AT CHEVRON REFINERY,M$												
GROSS MU	941	1143	1618	1347	1686	1248	974	1257	1311	1239	1257	1308
$MU/DY	30.36	40.82	52.20	44.89	54.40	41.61	31.43	40.56	43.69	39.98	41.90	42.18
$MU/B	2.38	3.20	4.09	3.52	4.27	3.26	2.47	3.28	3.43	3.14	3.29	3.31

TABLE V-S-1b

REVENUE CHEVRON REFINERY 1981, M$

	JAN81	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC81
JET A-1	3112	2977	3121	3385	3498	3385	3498	3498	3385	3498	3385	3498
JET B	1109	1001	1109	1073	1109	1073	1109	1109	1073	1138	1101	1138
#1 OIL	0	0	0	0	0	0	0	0	0	0	0	0
#2 OIL	884	846	964	941	986	958	1000	1000	967	1000	952	1002
1+%S FO6	7462	6683	7565	7008	7364	6237	6527	6650	6119	6382	6458	6496
ASPHALT	684	618	684	662	684	662	684	684	662	684	662	684
REV/MO	13251	12125	13742	13068	13641	12315	12817	12940	12206	12702	12558	12818
REV/DY	427	433	443	436	440	411	413	417	407	410	419	413
REV $/B	32.33	32.76	33.53	32.95	33.29	31.05	31.28	31.58	30.78	30.99	31.67	31.28

INPUT COSTS AT CHEVRON REFINERY,M$

ANS @NIK	10526	11130	12311	11737	11651	11039	11381	11182	10600	10988	10597	10881
COOK@NIK	0	0	0	0	0	0	0	0	0	0	0	0
KENI@NIK	0	0	0	0	0	0	0	0	0	0	0	0
ASPHmix@	1417	1417	1417	1417	1417	1417	1417	1417	1417	1417	1417	1417
INPUT/MO	11943	12547	13728	13154	13069	12457	12798	12600	12017	12405	12014	12298
INPUT/DY	385	448	443	438	422	415	413	406	401	400	400	397
INPUT$/B	29.14	33.00	33.50	33.17	31.89	31.41	31.23	30.74	30.30	30.27	30.29	30.01

PRODUCT MARK-UP AT CHEVRON REFINERY,M$

MU/MO	1308	-422	14	-86	572	-142	20	341	189	296	545	520
MU/DY	42.18	-15.09	0.45	-2.85	18.46	-4.72	0.63	11.00	6.29	9.56	18.16	16.76
MU,$/B	3.19	-1.14	0.03	-0.22	1.40	-0.36	0.05	0.83	0.48	0.72	1.37	1.27

TABLE V-S-2a

CHEVRON REFINERY PRODUCT/CRUDE SUMMARY 1982

PRODUCT	VOL %	BPCD	ave. $/B	MU $/B	REV. MM$/Y	% REV.
JET A-1	17.65	2250	48.32	20.73	39.68	27.61
JET B	6.51	830	42.67	15.08	12.93	9.00
#1 OIL	0.00	0	0.00	0.00	0.00	0.00
#2 OIL	5.57	710	42.12	14.54	10.91	7.59
1+%S FO6	64.71	8250	23.15	-4.44	69.73	48.52
ASPHALT	5.57	710	40.38	12.79	10.46	7.28
SUMMARY	100.00	12750	30.88	3.29	143.71	100.00

INPUTS	% CHARGE	BPCD	ave $/B	+/- ave.	COST MM$/Y	% COST
ANS @NIK	86.92	11800	26.33	0.42	113.39	88.32
COOK@NIK	0.00	0	0.00	0.00	0.00	0.00
KENI@NIK	0.00	0	0.00	0.00	0.00	0.00
ASPHmix@	13.08	1775	23.14	-2.77	14.99	11.68
SUMMARY	100.00	13575	25.91		128.38	100.00

TABLE V-S-2b

CHEVRON REFINERY PRODUCT/CRUDE SUMMARY 1981

PRODUCT	VOL %	BPCD	ave. $/B	MU $/B	REV. MM$/Y	% REV.
JET A-1	17.17	2270	48.92	17.62	40.54	26.29
JET B	6.51	860	41.85	10.55	13.14	8.52
#1 OIL	0.00	0	0.00	0.00	0.00	0.00
#2 OIL	5.60	740	42.57	11.27	11.50	7.46
1+%S FO6	65.96	8720	25.44	-5.86	80.95	52.50
ASPHALT	4.77	630	35.02	3.72	8.05	5.22
SUMMARY	100.00	13220	31.95	0.65	154.18	100.00

INPUTS	% CHARGE	BPCD	ave $/B	+/- ave.	COST MM$/Y	% COST
ANS @NIK	87.23	12300	29.85	0.51	134.02	88.74
COOK@NIK	0.00	0	0.00	0.00	0.00	0.00
KENI@NIK	0.00	0	0.00	0.00	0.00	0.00
ASPHmix@	12.77	1800	25.88	-3.46	17.00	11.26
SUMMARY	100.00	14100	29.35		151.03	100.00

TABLE V-S-3a

CHEVRON REFINERY ESTIMATED INCOME STATEMENT
1982

ITEM	M$/DY	MM$/YR	$ B-PROD
PRODUCT REVENUE	393.74	143.71	30.88
CRUDE PURCHASES	351.74	128.38	27.59
GROSS MARGIN,MU	42.00	15.33	3.29
% TO SALES		10.67	
OPERATIONS	11.54	4.21	0.85
DEPRECIATION	0.00	0.00	0.00
INS/TAX @ 2 %	1.22	0.45	0.10
INTEREST,11%	0.00	0.00	0.00
TOTAL OPER.COSTS	12.76	4.66	1.00
NET INCOME	29.24	10.67	2.29
TAXES @ 54 % F/S	15.79	5.76	1.24
INVESTMENT CREDITS	0.00	0.00	0.00
NET EARNINGS	13.45	4.91	1.05
DEPRECIATION	0.00	0.00	0.00
DEBT SERVICE	0.00	0.00	0.00
CASH FLOW	13.45	4.91	1.05
hypothetical....this plant is already amortized			
payout $ 22.34MM:plant		4.55 years	
DCF on plant at 15 years		21 %	
payout $ 44.68MM:assets(plant+WC)		9.10 years	
DCF on plant and WC at 15 years		7 %	

TABLE V-S-3b

CHEVRON REFINERY ESTIMATED INCOME STATEMENT
1981

ITEM	M$/DY	MM$/YR	$ per B-PROD
PRODUCT REVENUE	422.42	154.18	31.95
CRUDE PURCHASES	413.78	151.03	31.30
GROSS MARGIN,MU	8.64	3.15	0.65
% TO SALES		2.05	
OPERATIONS	11.28	4.12	0.80
DEPRECIATION	0.00	0.00	0.00
INS/TAX @ 2 %	1.22	0.45	0.09
INTEREST,11%	0.00	0.00	0.00
TOTAL OPER.COSTS	12.50	4.56	0.95
NET INCOME	-3.86	-1.41	-0.29
TAXES @ 54 % F/S	0.00	0.00	0.00
INVESTMENT CREDITS	0.00	0.00	0.00
NET EARNINGS	-3.86	-1.41	-0.29
DEPRECIATION	0.00	0.00	0.00
DEBT SERVICE	0.00	0.00	0.00
CASH FLOW	-3.86	-1.41	-0.29
hypothetical....this plant is already amortized			
payout $ 22.34MM:plant		NA years	
DCF on plant at 15 years		NA %	
payout $ 44.68MM:assets(plant+WC)		NA years	
DCF on plant and WC at 15 years		NA %	