

~~W.F.H.~~ ~~W.F.H.~~ ~~W.F.H.~~ **TEXACO** Anacortes, Washington 98221, March 29, 1966

FORM R-1211-E
ESTIMATED OPERATING EXPENSES
YEAR 1966

Vice Pres	REFINING	Supr. E. R.
	HOUSTON OFFICE	
Gen. Mgr.	MAR 31 1966	Supr. P & P
Supr. C & J		Supr. E. C.

AIR MAIL

Mr. J. R. Lemmer

Houston, Texas

This is a reply to your memorandum of 3-23-66, above subject.

We apologize for the inaccuracies that have appeared in Form R-1211-E, particularly the Steam, Power and Water distribution. Our engineers make estimates of SP&W consumption based on what they consider a representative week's running inasmuch as the day-by-day clerical tabulations have been eliminated. Some inaccuracies may result. We also point out that Form R-1503 as calculated and printed by the computer contains inaccuracies in yields, particularly on the Polymerization and Alkylation Units which are at "the end of the line".

It appears the R-1503 estimate of Polymer gasoline production should have been 364,000 barrels rather than 516,058 barrels. Our estimate of fuel consumed for polymerization appears to be reasonable when based on the data available for preparing the estimate, although the estimate for 1965 might have been a little high.

The estimate of 53,000 pounds of Poly Catalyst was definitely too low; an estimate of 120,000 pounds would probably be more accurate. There has been considerable improvement in catalyst consumption in the last year or so and we think an estimate of 120,000 pounds would be reasonable.

We have reworked the purchased power section of the steam, power and water distribution and submit the following if you wish to incorporate it in Form R-1211-E.

Unit	Purchased Power Amount
VPS	27,200
BDU	21,000
FCCU	66,800
Poly	20,000
CRU	14,300
Alky	16,700
HTU	33,200
Shipping	7,500
RP&S	28,700

WA-TEX 008911

WA-TEX008911

Mr. J. R. Lemmer

- 2 -

2-29-66

<u>Unit</u>	<u>Purchased Power Amount</u>
BS&W	1,900
Waste Oil	500
Total	237,800
Indirect	47,800
GRAND TOTAL	285,600

G. V. Carroll
G. V. CARROLL *EM*

WWC-JPE

WA-TEX 008912

WA-TEX008912

Miscellaneous - Fuel Only (1)	.095	.031	.063	.218	.082	.193	.024	.005
Purchased Power	(.026)	.002	(.064)	.098	.008	.036	.006	.003
Purchased Water	.021	.001	.014	.053	.002	.013	.001	-
Purchased Utilities in Auxiliaries	.006	.002	.004	-	-	-	-	-
Chemicals	-	-	-	-	-	-	-	-
Acid	.009	-	-	-	-	.249	-	-
Hydrobon Catalyst	.028	-	.053	.143	.020	-	.002	-
Other Catalyst	.002	.001	.001	.053	.002	.007	-	-
Chemicals - Auxiliaries	.039	.001	.054	.196	.022	.256	.002	-
Other Chemicals	.001	.038	.071	.565	.114	.498	.033	.008
Total Chemicals	.136							
Royalties (Running Royalties)								
TOTAL DIRECT VARIABLE CHARGES								
SEMI-VARIABLE CHARGES								
Operators - (ex T&I)	.036	.006	.022	.157	.018	.083	.006	.009
Test and Inspection - Labor	.005	-	.007	.018	.002	.013	.001	-
Maintenance - Labor	.020	.002	.012	.105	.009	.029	.002	.007
Test and Inspection-Contract Work	.008	-	.019	.009	-	.003	-	-
Maintenance - Contract Work	.002	-	.001	.002	.002	.005	-	-
Test and Inspection - Material	.011	-	.026	.006	.003	.002	.001	-
Maintenance - Material	.013	.001	.009	.054	.007	.023	.002	.004
Employee Benefits	.018	.002	.013	.085	.009	.038	.003	.005
Indirect Plant - Labor	.030	.004	.020	.138	.014	.061	.005	.007
Indirect Plant - Other	.027	.003	.019	.131	.014	.058	.004	.007
Steam - Charges Other Than Fuel	.023	.003	.025	.108	.004	.096	.001	.002
Power - Charges Other Than Fuel & Purch. Power	.004	-	.003	.028	.002	.010	.001	-
Water - Charges Other Than Fuel & Purch. Water	-	.007	(.037)	-	-	-	-	-
Auxiliaries-Other Than Fuel, Chemicals & Purch. Util.	(.015)	-	-	-	-	-	-	-
Miscellaneous - Other	-	-	-	-	-	-	-	-
Rentals and Royalties	-	-	-	-	-	-	-	-
TOTAL SEMI-VARIABLE CHARGES	.182	.029	.139	.848	.084	.421	.026	.041
NON-VARIABLE CHARGES								
Depreciation	.120	.014	.078	.403	.050	.228	.017	.037
Insurance & Taxes Related to Investment	.038	.005	.024	.118	.016	.069	.005	.013
General Office and General Overhead & Fast Serv. Pens.	.028	.004	.019	.131	.014	.058	.005	.007
Auxiliaries (Excl)	-	.008	-	-	-	-	-	-
Rentals and Royalties	-	-	-	-	-	-	-	-
TOTAL NON-VARIABLE CHARGES	.186	.031	.121	.652	.080	.355	.027	.057
TOTAL EXPENSE	.504	.098	.331	2.065	.278	1.274	.086	.106

Notes: (1) Credit For Fuel Only in Steam Produced from CO and Waste Heat Boilers;

Fluid Catalytic Cracking 485,816 Barrels @ \$1.00

TOTAL CRUDE Refining Expense 485,816 Barrels @ \$1.00

The estimated divisor represents charge to unit; except for Polymerization, which is based on true Polymer production; and Alkylation, which is based on total Alkylate production.

VPS not scheduled for T&I in 1964.

JRL-RJ
6-1-64

WA-TEX 008913

WA-TEX008913

M-580-11

Standard Expenses 18
Puget Sound Plant
Year 1966

WA-TEX 008914

WA-TEX008914

~~SECRET~~
MEMORANDUM LETTER

INSTRUCTIONS - CANCELS LETTER(S) OF
PERMANENT ☐ ROUTINE ☐

SIGNED BY _____
TEMPORARY ☐

FORM 5-45 1-62-31M PADS

Mr.

Handwritten: J.R. Lemmer
Handwritten: Houston

Vice Pres.	REFINING HOUSTON OFFICE	Sup. P & P
Gen. Mgr.	JUN 8 1966	Supr. E. C.
Sup.		

Handwritten: Enacortes, Wash 6-3 1966
(Location) (Date)

Handwritten: Form R-1211-E

Handwritten: Estimated Operating Expenses - 1966
(Subject)

Handwritten: We have checked the differences called to our attention in your Memorandum of 5-31-66, above subject, and submit the following to be used in place of the figures shown:

Handwritten: 1966
Average Steam Cost Per M Pounds \$.4093
Average Water Cost Per M Gallons \$.2447

Yours very truly,

Handwritten signature: Marshall
By _____

If letter requires reply prepare in triplicate, forwarding original and duplicate, and retain copy.

Handwritten: lwe
Make explanation below. Return original. Retain duplicate.

MEMORANDUM LETTER

INSTRUCTIONS—CANCELS LETTER(S) OF _____

SIGNED BY _____

FORM S-45 1-62-31M PADS

☒ PERMANENT

☐ ROUTINE

☐ TEMPORARY

Mr.

City mail
J. R. Lemmer

Houston

Onacortes, Wash

(Location)

6-3

(Date)

1966

Form R-1211-E

(Subject)

Estimated Operating Expenses - 1966

We have checked the differences called to our attention in your memorandum of 5-31-66, above subject, and submit the following to be used in place of the figures shown:

1966

Average Steam Cost Per M. Pounds \$.4093

Average Water Cost Per M. Gallons \$.2447

Yours very truly,

Signed: G. V. CARROLL

If letter requires reply prepare in triplicate, forwarding original and duplicate, and retain copy.

Wase

By _____

Make explanation below. Return original. Retain duplicate.

EH
Houston, Texas 77052, May 31, 1966

FORM R-1211-E
ESTIMATED OPERATING EXPENSES
YEAR 1966

REFINING HOUSTON OFFICE		
VICE PRES.		
GEN. MGR.		
SUPVR. COST & ST.		21
SUPVR. EMP. REL.		
Suprv. Proc. & Prod.		
SUPVR. EXP. CONT.		

MEMORANDUM

Mr. G. V. Carroll
Anacortes, Washington

Please refer to Exhibit 3 of subject form and reported average steam cost of \$.2629 per M pounds, and average water cost of \$.0589 per M gallons.

Steam cost in 1964 was \$.492 per M pounds, and water cost was \$.310 per M gallons as extracted from Exhibit 4 of the 1964 report and summarized under the Steam and Water Department sections of the "Analysis" summary of your copy of R-1211-F.

We will appreciate your checking these differences and advising promptly as we are holding up issuance of the 1966 R-1211-F pending receipt of your reply.

J. R. LEMMER

EHF-NLM

WA-TEX 008917

WA-TEX008917

TEXACO

WFK

Anacortes, Washington 98221, February 23, 1966

3-21-66
checked against
Budget (within
close limits)
HJH

FORM R-1211-E
ESTIMATED OPERATING EXPENSES
YEAR 1966

AIR MAIL

PERSONAL

MEMORANDUM

Mr. J. R. Lemmer

Houston, Texas

Vice Pres	REFINING	Supr. E. R.
	HOUSTON OFFICE	
Gen. Mgr.	FEB 28 1966	Supr P & P
Supr. E. R.		Supr. E. C.

We are submitting herewith Estimated Crude Refining Expenses, Form R-1211-E. Exhibits 1, 2, 3 and 4.

The activities shown on the attached statement are in agreement with those shown in the Annual Budget, Form R-1259, as submitted except, Labor was increased by \$88,490 and Contract Work was increased by \$18,200 because of the 4 1/2% wage increase which became effective after the budget was submitted. No new equipment is to start up and none of the present equipment is to be shut down during the year.

The following is a breakdown of expenses included under Miscellaneous Expense:

FCCU - Credit for Steam	(894,700)	
Sub-total Direct Plant		\$ (894,700)
Charge Steam Dept. for above item	894,700	
Purchased Power	285,600	
Purchased Water	117,200	
Total SP&W		1,297,500
Vacation Pay	149,500	
A&S Benefits	25,510	
Telephone	13,100	
Telegraph	2,400	
Contributions & Donations	200	
Memberships & Subscriptions	30	
Postage	1,300	
Traveling & Personal	8,000	
All Other Expense	9,370	
Marine Dept-Rentals & Services	(11,200)	
Sales Dept.-Electric Sign	(800)	
Rentals	6,315	
Sub-total Indirect		203,725
Grand Total Miscellaneous Expense		\$606,525

Included in Material Operating is an estimate of \$6,980 for Printing and Stationery and excluded from Material Operating is an estimate of \$3,000 for Hydrogen which has been included with Chemicals.

WA-TEX 008918

WA-TEX008918

Mr. J. R. Lemmer

- 2 -

2-23-66

Labor costs are based on the following manpower:

	<u>No. Men</u>	<u>Cost</u>
Calendar Personnel & Other Staff	6	0
Construction & Outside Charges	4	31,400
Plant Expense - Form R-1259	258	2,054,730
Total Labor	268	2,086,130
Less: Vacation Pay		149,500
A&S Benefits		25,510
Construction & Outside		31,400
Labor Distributed on Form R-1211-E as Labor		1,879,720

The following is a breakdown of the component costs used in pricing out steam produced from CO and waste heat boilers:

	<u>FCCU</u>
M Lbs. Steam	2,211,000
BTU's/Lb.	1,326
MM BTU's	2,932,000
Total Steam Cost basis Unit Cost previous report	.30516
Credit for Steam	\$ 894,700

Component Costs:

Labor	199,071
Material	28,809
Contract Work	626
Fuel-Bbls.	427,747
Fuel-Cost	629,332
Transfers of Steam	(14,315)
Transfers from Power	39,725
Trnasfers from Water	11,452
	\$ 894,700


G. V. CARROLL

WWC-JPE

JRL(2)

LHB (Bookkeeping)

Attachments

PLANT LABOR AND CONTRACT WORK
ESTIMATED OPERATING EXPENSES - YEAR 1966
PUGET SOUND PLANT

Line No.	Activities Barrels	LABOR				Contract Work		
		Operators-Ex.	I&T	Maint.	Total	I&T	Maint.	Total
		Number Employees	\$ Amt.	\$ Amt.	\$ Amt.			
1	VPS	21,493,000	14.0	110,500	58,100	168,600	43,400	43,400
2	Decarbonizer		(1)		26,700	26,700	5,300	5,300
3	PCGU	7,918,135	18.0	148,400	79,300	284,600	287,400	294,100
4	Poly (Bbls. Polymer)	516,058	7.0	56,400	34,000	90,400	5,300	5,300
5	Catalytic Reforming	3,096,000	7.0	56,400	23,700	80,100	5,500	5,500
6	Alkylation (Bbls. Alkylate)	702,189	7.0	56,600	30,800	87,400	9,500	9,500
7	Hydrotreating	9,660,611	7.0	56,400	13,500	87,000	37,600	43,100
8	Shipping Bulk	20,068,494	(2)		33,800	33,800	6,700	6,700
9	RP&S		20.0	195,300	81,400	276,700	36,100	36,100
10	BS&W		0.5	3,800		3,800		
11	Waste Oil Recovery		0.5	3,800		3,800		
12	Total Direct	20,445,000	81.0	687,600	74,000	381,300	1,142,900	325,000
13	S.P. & W.		13.0	98,200		115,400	213,600	2,100
14	Indirect Plant		14.0(3)	113,700		409,520	523,220	28,800
15	GRAND TOTAL		108.0	899,500	74,000	906,220	1,879,720	325,000

- (1) Operated by VPS Personnel
(2) Included in RP&S Dock Forces
(3) Includes 13 from Laboratory and 1 from Effluent Treating

* PSMemo GVC → JRL 3-29-66

1,142,900
874,967

WA-TEX 008920

GVC-JPE 2-23-66

JRL (2)

LHB (Bookkeeping)

WA-TEX008920

MATERIAL, MISCELLANEOUS EXPENSE AND FUEL CONSUMED
ESTIMATED OPERATING EXPENSES - YEAR 1966
PUGET SOUND PLANT

Line No.	Material			Misc. Expense	Fuel Consumed		
	I&T	Maint.	Total		Total Gas Std. Bbls.	Liquid Std. Bbls.	Total Fuel Amount
1 VPS		26,500	26,500		426,759	10,058	797,700
2 Decarbonizer		17,100	17,100		21,554	0	39,600
3 FCCU	225,000	62,800	287,800	(894,700)*	60,300	60,300	177,400
4 Poly (Bbls. Polymer)		18,400	18,400				
5 Catalytic Reforming		19,200	19,200		199,729	21,554	390,100
6 Alkylation (Bbls. Alkylate)		14,900	14,900				
7 Hydrotreating	8,000	19,400	27,400		241,399	0	440,500
8 Shipping Bulk		11,200	11,200				
9 RP&S		58,100	58,100				
10 BS&W		900	900				
11 Waste Oil Recovery		900	900				
12 Total Direct	253,000	249,400	482,400	(894,700)	949,741	91,912	1,845,300
13 SP&W		44,600	44,600	1,297,500	196,022	196,225	577,100
14 Indirect Plant		187,250	187,250	203,725	3,000	-	5,305
15 GRAND TOTAL	233,000	481,250	714,250	606,525	1,148,763	288,137	2,427,705

	Std. Bbls.	\$/Bbl.	Amount
Gas Produced	1,123,263	1.820	2,044,338
Liquid Fuel	288,137	1.107	319,087
Purchased Gas	25,500	2.521	64,280
TOTALS	1,436,900	1.690	2,427,705

Handwritten: \$1.13 vs

Handwritten: (*) Includes \$29,337 Fuel

GVC-JPE 2-23-66

JRL (2)

LHB (Bookkeeping)

WA-TEX 008921

WA-TEX008921

DETAILED DISTRIBUTION OF CHEMICALS CONSUMED
ESTIMATED CRUDE REFINING OPERATING EXPENSES - YEAR 1966
PUGET SOUND PLANT

Line No.	Chemical	V.P.S.		F.C.C.U.		Poly		Alkylation	
		Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
1	Acid, Alky Sulfuric-Tons							8,740	205,600 ✓
2	Anti-Foam DG-200-Lbs.	585	1,300						
3	Catalyst: -								
4	HDS-2 Hydrotreater-Lbs.								
5	Davison F-1-13-Tons			1299.8	447,600 ✓	120,000	33,600		
6	UOP #1 Poly-Lbs.					53,000	14,700 ✓		
7	UOP-R-5 Platinum-Lbs.								
8	Caustic Soda - Lbs.			156,000	4,800 ✓	147,000	4,400	78,500	2,300 ✓
9	Monoethanolamine-Lbs.					33,000	9,400 ✓		
10	Nalco 537-D-Gals.	4,890	11,400						
11	Sodium Chloride - Lbs.					15,000	200	263,000	4,000 ✓
12	Hydrogen - Cu. Ft.								
13	TOTAL		12,700 ✓		452,400 ✓		28,700 ✓		211,900 ✓

47,600

GVC-JPE 2-23-66

JRL(2)

LHB (Bookkeeping)

WA-TEX 008922

See Correction
in PSP ltr 3-29-66

WA-TEX008922

STEAM, POWER, & WATER EXPENSES
ESTIMATED OPERATING EXPENSES - YEAR
PUGET SOUND PLANT

Line No.		Barrels	Amount	Purchased Power	Purchased Water	Other Cost	Total SP&W	Total Plant
1	VPS	133,100	195,800	29,500	22,100	85,300	323,700	1,372,600
2	Decarbonization	65,700	96,700	25,900	3,800	42,100	168,500	257,200
3	FCCU	255,900	376,300	44,600	36,700	164,000	621,600	1,223,200
4	Polymerization	63,300	93,100	17,900	15,300	40,600	166,900	309,700
5	Catalytic Reforming	16,700	24,600	12,000	8,900	10,700	56,200	595,500
6	Alkylation	118,300	174,000	4,200	11,500	75,800	265,500	589,200
7	Hydrotreating	10,900	16,100	40,800	11,800	7,000	75,700	677,300
8	Shipping Bulk	4,600	6,800	10,800	400	3,000	21,000	72,700
9	RP&S	67,800	99,700	38,200	1,700	43,400	183,000	559,500
10	BS&W	4,600	6,800	2,300	600	3,000	12,700	37,400
11	Waste Oil Recovery	7,700	11,400	—	600	5,000	17,000	21,700
12	Total	748,600	1,101,300	217,200	113,400	479,900	1,911,000	5,696,000
13	S.P. & W.						(2,134,900)	0,000
14	Indirect Plant	71,394	105,132	68,480	3,800	45,768	223,190	1,171,400
15	GRAND TOTAL	819,994	1,206,432	285,600	117,200	525,668	0,000	6,867,400

238 196455
006

5923

100555
000000
376500
376747
42747
51215

Changes based
PSP Ltr
GVE JPL 3/29/66

WA-TEX 008923

WA-TEX008923

STEAM, POWER & WATER EXPENSES
ESTIMATED OPERATING EXPENSES YEAR 1966
PUGET SOUND PLANT

<u>Distribution</u>	<u>Steam</u>	<u>Power</u>	<u>Water</u>	<u>Total</u>
Fuel - Barrels	814,135		5,859	819,994
Fuel - Cost	1,197,813		8,619	1,206,432
Purch. - Power	36,139	187,897	61,564	285,600
Purch. - Water	10,323		106,877	117,200
Other Cost	462,161	2,500	61,007	525,668
TOTAL COST	1,706,436	190,397	238,067	2,134,900
Avg. Steam Cost / M Lbs.	\$.262857			
Avg. Power Cost / KW		\$.005238		
Avg. Water Cost / M Gals.			\$.058939	
<u>Purchased Utility Rates</u>				
* Last Increment of Power /KW		\$.000000		
Last Increment of Water /M Gal.			\$.039000	

SP&W Fuel Summary

Total SP&W Fuel From Exhibit II	Barrels	392,247
Plus FCCU Waste Heat Fuel Credit	Barrels	427,747
TOTAL SP&W FUEL TO DISTRIBUTE	Barrels	819,994

* PSP has a power contract based on a peak demand of 8010 KW. No additional payment is required unless demand exceeds 8010 KW, and if demand exceeds 8010 KW the monthly charge will be increased by \$2.31 per KW in excess of 8010.

GVC-JPE 2-23-66

JRL (2)

LHB (Bookkeeping)

WA-TEX 008924

WA-TEX008924

TEXACO

73-21-66

PSP
Budget VS R-1211-E ✓
6,678,045

Budget Request

Reductions <7300>

✓ <55,100>

✓ <6400>

✓ <14,100>

✓ <23,300>

Labor Addn - Request Understated

<106,200>

70,000

Sub-total

<36,200>

4 1/2% - 74,400

✓ - 1150

✓ - 12200

✓ - 6000

✓ 12200

105,950

Sub

69,250

Note:
Acctg. not in Budget Labor
but incl in R-1211-E indirect
\$70000 + Labor addn } not in
or Budget Cuts R-1211-E

TEXACO

3521-66

PS P
Budget No. R-1211-E

Budget
Order

Item	Budget	R-1211-E	R-1211-E
Alt Labor	\$1,966,600	\$1,879,720	\$81,880
Added WSD			70,000
			11,880
Cwrk Total	459,300	479,900	<20,600>
Labor Hike			<19,815>
Material Total	710,000	714,250	<4,250>
Fuel	2,427,705	2,427,705	-0-✓
Chem	756,300	759,300	<3000>
Purch Power			-0-✓
✓ Water			-0-✓

$A \frac{1}{2} \% \text{ per PSD} \rightarrow 106,690 \checkmark$
 $105,950 \checkmark$
 $A \frac{1}{2} \% \text{ per WSD} \rightarrow 740$

TEXACO

7/23/66	PSP - R-1211-E	\$6,863,400
	R-1259 per TRL 12/27/65	6,742,695
		<u>124,705</u>

Note 9-2-65 Request	\$6,678,045
Plus 12/27/65 Adjustments	64,650
Less 4% + 70,000 Amer Labor	
R-1259 Per TRL	<u>\$6,742,695</u>

Per PSP	
9-265 Request	\$6,678,045
Min Credit Adj.	(9,400)
	<u>\$6,668,645</u>
Plus 4 1/2% On Plant	88,490
	<u>18,200</u>
Adj Total	<u>\$6,775,335</u>
Less	<u>6,742,695</u>
	<u>32,640</u>

TEXACO

BP - R-1211-E

#6, 867, 400

Budget

6, 748, 045

119, 355

Plant sec.

$4\frac{1}{2}\%$

{ 88, 490 } 106, 690
{ 18, 200 }

Orig Request

6, 678, 045

#6, 784, 735

#6, 867, 400

- 106, 690

6, 760, 710

Requested 9-2-65

6, 678, 045

82, 665 ?

(10,000 - 600)

9, 400

#7, 065

~~6,867,400~~
~~6,789,~~

Budget
R-1211-E

6,742,695
~~82,665~~ 85,393

~~6,825,360~~

6,828,088

6,867,400

\$ 39,312

<4,250>

Math

Calc.

Chem

20

<3,000>

TEXACO

#6, 748, 045 orig ady. Budget Request

WA-TEX 008930

WA-TEX008930

TEXACO

3-11-65

Pugit Sound

Budget Vs R-1211-E

Item	Budget	R-1211-E	Budget over R-1211-E △
Plant Labor	1,937,000	1,855,900	81,100 *
Cook op	80,500	82,900	<2400>
✓ Rpm	118,800	119,100	<300>
✓ Sub-total	2,136,300	2,057,900	78,400.
Material			
Op	324,100	329,300	<5200>
Rpm	272,500	272,500	-0-
sub-total	596,600	601,800	<5200>
Chemicals	902,100 *	902,100	-0-
* By 2200 Hz			
Fuel			
Bbls	1332 774	1332,774	-0-
#	2127 200	2127 200	-
Unit	1.596	1.596	-
Power	474,800	474,800	-0-
✓ Water	118 300	118 300	-0-
other	38,800	199,670	<160,870>
✓ Total	6,394,100	6,481,770	<87,670>

* Accounting 87630

WA-TEX 008931

WA-TEX008931

Houston, Texas 77052, March 23, 1966

FORM R-1211-E
ESTIMATED OPERATING EXPENSES
YEAR 1966

AIR MAIL

MEMORANDUM

Mr. G. Carroll
Anacortes, Washington

This will refer to your memorandum of February 23, 1966, transmitting PSP's R-1211 for year 1966.

In analyzing the subject report for 1966 we note that fuel (SPAW) as well as UOP No. 1 catalyst, required for polymerization in 1966 does not appear consistent with that required for previous years considering true polymer production, as indicated by the following:

Item	1964	1965	1966
Barrels true polymer produced	319,353	397,142	516,058
Barrels of fuel (SPAW) for polymerization	76,193	102,969	63,300
Pounds of UOP No. 1 Catalyst	172,500	198,200	53,000

We also note that the power requirement for alkylation in 1966 apparently has dropped drastically. Whereas the total cost of power decreased by some 40%, the power required for alkylation has apparently decreased some 85% as indicated by the following:

Item	1964	1965	1966
Alkylate production - bbls.	665,873	767,146	702,189
Dollars of purchased power for alkylation	\$ 24,584	\$ 27,820	\$ 4,200

Although there may be some reasons for the items drawn to your attention above, we would appreciate your identification of such reasons. We will then be in a better position to use this data for economic cost studies and other purposes.

J. R. LEMMER

WPH-MLM

WA-TEX 008932

WA-TEX008932

TEXACO

Bbls alkylate

665,873 767,146 702,189
1964 1965 1966

Purch Power for alkyl

(.037) .036 .006
24,584 ~~\$7787~~ \$4200
27,820

Volume Chicago (VPS)

18,870,000 18,367,000 ~~21,493,000~~
18,990,000 ~~21,493,000~~

Total Power Unit

.021 .017 .010
~~\$307,500~~ ~~325,345~~ ~~\$285,600~~
388,015 313,350

TEXACO

3-23-66

G. V. Carroll

Rememo 2/23/66, R-1211-E 1966, ~~R~~
~~Polymerization, Cost of Fuel Steam~~
~~Power, Water & Fuel Values @ \$1.00~~

~~please note~~
 Comparison of Polymerization Cost and
 Activity for Unit 3 R-1211-E's:

	1964	1965	1966
Bbls True Polymer	250,000	397,142	516,058
Purchased Power	319,353		
Total #	34,125	33,291	77,900

Poly.
 Fuel Barrels (SPW) 76,193 ✓ 102,969 ✓ 63,300 ✓

Catalyst #s Vol #1	172,500 lb	198,200 lb	53,000 lb
" " #	\$50,000	\$57,800	\$14,700
Caustic Soda Lbs	210,000 lb	158,000 lb	147,000 lb
✓ ✓ \$	\$6740	\$5200	\$4400
MEA - #s	40,000	25,000 lb	33,000 lb
✓ \$	\$12000	\$7600	\$9,400
Sodium Chloride #s	3100	13,000	15,000 lb
✓ ✓ \$	50	200	\$200

Project Sound Plant - Comparison of Estimated Expenses
year 1964, 1965, and 1966

	1964	1965	1966
<i>Activity - Bldg</i>			
<i>5-line (Polymer)</i>			
	250,000 BBL.	397,148 BBL.	576,058 BBL.
	\$ Per BBL.	\$ Per BBL.	\$ Per BBL.
	POLYMER	POLYMER	POLYMER
	\$ / YR	\$ / YR	\$ / YR
<i>Fuel - C 100 BBL.</i>			
<i>Thermostat, Power, & Water</i>			
<i>Purch. Power</i>	218	\$ 102,969	122
<i>Purch. Water</i>	888	33,201	035
<i>WSP Catalyst</i>	053	13,895	030
<i>Other Chemicals</i>	143	59,800 (5)	028
<i>SUB-TOTAL (VARIABLE)</i>	053	13,000	028
	18,790		
	\$ 197,633	\$ 219,915	\$ 121,200

BUGET SOUND 1966

DISTR OF INDIRECT PRT.
IND. PRT.

Invest-

DIRECT FRINGE		EMPL. BENE		TOTAL	OTHER INDIRECT	LABOR	BENEFITS	LABOR	INDIRECT	TOTAL	EMPL. BENE	TAXES	INVEST
LABOR	%	LABOR	%										
VPS	14.78%	\$ 25,814	\$ 77,195	\$ 103,009	\$ 17,108	\$ 120,117	\$ 17,108	\$ 120,117	\$ 17,108	\$ 137,225	\$ 37,462		
FCCU	24.90	43,578	130,282	173,860	17,108	147,752	17,108	147,752	17,108	164,860	63,441		
POLY.	7.91	13,843	41,387	55,230	17,108	72,338	17,108	72,338	17,108	89,446	20,070		
CRU	7.01	12,268	36,678	48,946	17,108	66,054	17,108	66,054	17,108	83,162	17,804		
ALKY	7.65	13,388	40,000	53,388	17,108	70,496	17,108	70,496	17,108	87,604	19,429		
HTU	7.61	13,318	39,917	53,235	17,108	70,343	17,108	70,343	17,108	87,451	19,328		
S&S (S&S)	27.17	47,550	141,159	188,709	17,108	205,817	17,108	205,817	17,108	222,925	69,007		
Decarbonizer	2.34	409	12,473	12,882	17,108	29,981	17,108	29,981	17,108	47,089	5,943		
BSEN	.33	578	1,727	2,305	17,108	19,413	17,108	19,413	17,108	36,521	838		
Waste Oil Recovery	.33	578	1,727	2,305	17,108	19,413	17,108	19,413	17,108	36,521	838		
TOTAL	100.00	\$ 142,900	\$ 453,320	\$ 596,220	\$ 17,108	\$ 613,328	\$ 17,108	\$ 613,328	\$ 17,108	\$ 630,436	\$ 213,260		

WA-TEX 008937

WA-TEX008937

WA-TEX 008938

STANDARD EXPENSES

UNIT

PLANT

YEAR

PIGMEY SOUND

1965

	TOTAL REFINING EXPENSE	VACUUM STILLING	PIPE	RECARBON- IZER 100 %	BS&W 100 %	WASTE OIL RECOVERY 100 %	F.C. C.U.
ESTIMATED DIVISOR -- Barrels	15367000	11990000					7.571923
CAPACITY -- Barrels	11950000	11950000					57191000
Direct Variable Charges							
Fuel @ \$1.00							
Fuel in Steam	1.48	1.36	377766	16500			1.18 134100
Fuel in Power	1.50	1.05	96116	48055	1188		1.57 388654
Fuel in Water							
Fuel in Auxiliaries	1.01	1.01	11824	330	48		1.14 3142
Total Fuel	1.99	1.42	49416	16835			2.85 577076
Miscellaneous -- Fuel Only (1)	1.03	1.03	13111	55097	3146		1.07 339036
Purchased Power	1.12	1.12	14150	4085	764		1.15 111016
Purchased Water	1.06	1.06	14150	4085	764		1.05 38031
Purchased Utilities in Auxiliaries							
Chemicals							
Acid	1.10	1.10	14150	4085	764		1.10 111016
Hydrogen Catalyst							
Other Catalyst	1.34	1.34	14150	4085	764		1.34 14150
Chemicals -- Auxiliaries							
Other Chemicals	1.01	1.01	14150	4085	764		1.01 111016
Total Chemicals	1.45	1.45	14150	4085	764		1.45 14150
Royalties (Running Royalties)							
TOTAL DIRECT VARIABLE CHARGES	1.43	1.43	14150	4085	764		1.43 14150
SEMI-VARIABLE CHARGES							
Operators -- (ex T&I)	1.36	1.36	14150	4085	764		1.36 14150
Test and Inspection -- Labor	1.01	1.01	14150	4085	764		1.01 111016
Maintenance -- Labor	1.01	1.01	14150	4085	764		1.01 111016
Test and Inspection -- Contract Work	1.01	1.01	14150	4085	764		1.01 111016
Maintenance -- Contract Work	1.01	1.01	14150	4085	764		1.01 111016
Test and Inspection -- Material	1.01	1.01	14150	4085	764		1.01 111016
Maintenance -- Material	1.01	1.01	14150	4085	764		1.01 111016
Employe Benefits	1.01	1.01	14150	4085	764		1.01 111016
Indirect Plant -- Labor	1.01	1.01	14150	4085	764		1.01 111016
Indirect Plant -- Other	1.01	1.01	14150	4085	764		1.01 111016
Steam -- Charges Other Than Fuel	1.01	1.01	14150	4085	764		1.01 111016
Power -- Charges Other Than Fuel & Purch. Power	1.01	1.01	14150	4085	764		1.01 111016
Water -- Charges Other Than Fuel & Purch. Water	1.01	1.01	14150	4085	764		1.01 111016
Auxiliaries -- Other Than Fuel, Chemicals & Purch. Util.	1.01	1.01	14150	4085	764		1.01 111016
Miscellaneous -- Other	1.01	1.01	14150	4085	764		1.01 111016
Rentals and Royalties	1.01	1.01	14150	4085	764		1.01 111016
TOTAL SEMI-VARIABLE CHARGES	1.01	1.01	14150	4085	764		1.01 111016
NON-VARIABLE CHARGES							
Depreciation							
Insurance & Taxes Related to Investment							
General Office and General Overhead & MGMT. SERV. DEPTS.							
Auxiliaries (F&OH)							
Rentals and Royalties							
TOTAL NON-VARIABLE CHARGES							
TOTAL EXPENSE							

WA-TEX 008939

Notes (1) CREDIT FOR FUEL ONLY IN STEAM PRODUCED FROM CO AND WASTE HEAT BOILERS

WA-TEX008939

STANDARD EXPENSES

UNIT

PLANT PIGET SOUNDYEAR 1965

	POLYMERIZATION	CATALYTIC REFORMING	ALKYLATION	HYDROTREATING	STORING AND SHIPPING
ESTIMATED DIVISOR -- Barrels	397.142	2959400	767.146	8137627	1267000
CAPACITY -- Barrels	4015500	2912000	835500	8137627	810000
Direct Variable Charges					
Fuel @ \$1.00					
Direct Fuel	—	1062.183820	—	1023.183300	—
Fuel in Steam	1257.101773	1008.20396	172.181801	1001.8742	1006.101773
Fuel in Power	—	—	—	—	—
Fuel in Water	1072.1026	754	1001.14220	—	—
Fuel in Auxiliaries	—	—	—	—	—
Total Fuel	1259.102629	1070.206950	173.183021	1024.183392	1006.101845
Miscellaneous -- Fuel Only (1)	—	—	—	—	—
Purchased Power	1084.33291	1008.23709	1036.27826	1006.55181	1003.60102
Purchased Water	1033.12825	1003.18361	1019.14530	1001.12652	1003.2925
Purchased Utilities in Auxiliaries	—	—	—	—	—
Chemicals	—	—	—	—	—
Acid	—	—	143.182300	—	—
Hydroben Catalyst	—	—	—	1001.4000	—
Other Catalyst	1126.57100	1070.57400	—	—	—
Chemicals -- Auxiliaries	—	—	—	—	—
Other Chemicals	1032.18000	1002.27100	1008.5852	—	—
Total Chemicals	1128.70800	1072.64500	1017.197152	1001.4000	1003.4500
Royalties (Running Royalties)	—	—	—	—	—
TOTAL DIRECT VARIABLE CHARGES	554.127955	1031.023565	479.367641	1034.183392	1009.167311
SEMI-VARIABLE CHARGES					
Operators -- (ex 14)	125.53700	1018.53700	170.53900	1007.53700	1010.186000
Test and Inspection -- Labor	—	1001.2400	1014.7000	1001.9500	—
Maintenance -- Labor	1097.38700	1009.27700	1022.20500	1007.17400	1007.181300
Test and Inspection -- Contract Work	—	—	—	—	—
Maintenance -- Contract Work	1012.4800	1004.16500	1007.55000	1001.16200	—
Test and Inspection -- Material	—	1005.15200	1004.54000	1001.4000	—
Maintenance -- Material	1056.22400	1008.23400	1004.18200	1003.23600	1005.184300
Employee Benefits	—	—	—	—	—
Indirect Plant -- Labor	—	—	—	—	—
Indirect Plant -- Other	—	—	—	—	—
Steam -- Charges Other Than Fuel	124.53142	1004.11682	1090.68757	1001.5266	1003.53036
Power -- Charges Other Than Fuel & Purch. Power	—	—	—	—	—
Water -- Charges Other Than Fuel & Purch. Water	119.179	119	122	1007.407	1007.450
Auxiliaries -- Other Than Fuel, Chemicals & Purch. Util.	1023.8228	1002.5623	1012.9434	1001.7769	1007.1500
Miscellaneous -- Other	—	—	—	—	—
Rentals and Royalties	—	—	—	—	—
TOTAL SEMI-VARIABLE CHARGES					
NON-VARIABLE CHARGES					
Depreciation	—	—	—	—	—
Insurance & Taxes Related to Investment	—	—	—	—	—
General Office and General Overhead	—	—	—	—	—
Auxiliaries (F&OH)	—	—	—	—	—
Rentals and Royalties	—	—	—	—	—
TOTAL NON-VARIABLE CHARGES					
TOTAL EXPENSE					WA-TEX 008940

Worksheet (1)

WA-TEX008940

WA-JEX 008941

DSP
THRU June
CRU 1-2/1-10 Heater Kpro
HTU & 11 5-6/5-15 Catalyst Regen
AIK 2-27/3-12 Pressure Relief Valves

Inge A Sand
R-1211-F. Bata
1965

$$N \leq N$$

WA-TEX008941

WA-JEX 008941

WTH
T E X A C O

Anacortes, Washington 98221, February 11, 1965

FORM R-1211-E
ESTIMATED OPERATING EXPENSES
PUGET SOUND PLANT
YEAR 1965

AIR MAIL

PERSONAL

MEMORANDUM

Mr. J. R. Lemmer

Houston, Texas

REFINING	Supr. D.S.
HOUSTON OFFICE	☒
FEB 15 1965	Supr. E.R.
Asst. Cr. Asst. to G.M.	Supv. E.C.
Supv. P&P	

We are submitting herewith Estimated Crude Refining Expenses, Form R-1211-E, Schedules 1, 2, 3, 4 and 6.

The activities shown on the attached statement are in agreement with those shown in the Annual Budget, Form R-1259, as approved. No new equipment is to start up and none of the present equipment is to be shut down during the year.

The following is a breakdown of expenses included under Miscellaneous Expense:

FCCU-Credit for Steam	(1,017,536)	
Subtotal Direct Plant		(1,017,536)
Charge Steam Dept. for above item	1,017,536	
Purchased Power	474,800	
Purchased Water	118,300	
Total SP&W		1,610,636
Vacation Pay	136,700	
A&S Benefits	23,840	
Telephone	13,100	
Telegraph	2,400	
Contributions & Donations	200	
Memberships & Subscriptions	30	
Postage	1,300	
Traveling & Personal	11,300	
All Other Expense	11,770	
Marine Dept.-Rentals & Services	(10,800)	
Sales Dept.-Electric Sign	(800)	
Rentals	8,430	
Subtotal Indirect		197,470
GRAND TOTAL MISCELLANEOUS EXPENSE		790,570

Included in Material Operating is an estimate of \$7,280 for Printing and Stationery, and excluded from Material Operating is an estimate of \$2,200 for Hydrogen which has been included with Chemicals.

WA-TEX 008942

WA-TEX008942

Mr. J. R. Lemmer

- 2 -

2-11-65

Labor costs are based on the following manpower:

	<u>No. Men</u>	<u>Cost</u>
Calendar Personnel and Other Staff	6	0
Construction and Outside Charges	3	20,000
Plant Expense-Form R-1259	257	2,016,440
Total Labor	<u>266</u>	<u>2,036,440</u>
Less: Vacation Pay		136,700
A&S Benefits		23,840
Construction and Outside		20,000
Labor Distributed on Form R-1211-E as Labor		<u>1,855,900</u>

The following is a breakdown of the component costs used in pricing out steam produced from CO and waste heat boilers:

	<u>FCCU</u>
M Lbs. Steam	2,494,330
BTU's/Lb.	1,323
MM BTU's	3,200,000
Total Steam Cost basis Unit Cost previous report	.31798
Credit for Steam	<u>1,017,536</u>

Component Costs:

Labor	222,230
Material	40,092
Contract Work	712
Fuel-Bbls.	559,036
Fuel-Cost	<u>689,482</u>
Transfers of Steam	(24,421)
Transfers from Power	75,501
Transfers from Water	13,940
	<u>1,017,536</u>

MISC OTHER

328,054

G. V. Carroll
G. V. CARROLL

WWC-JPE

JRL(2)

LHB (Bookkeeping)

Attachments

WA-TEX 008943

WA-TEX008943

CONTRACT WORK, MATERIAL & MISCELLANEOUS EXPENSES
ESTIMATED CRUDE REFINING OPERATING EXPENSES - YEAR 1965
PUGET SOUND PLANT

R-1211-E
Exhibit 2

() Indicates Red Figures

Line No.		C O N T R A C T W O R K					M A T E R I A L				
		Operating		Repairs		Total	Operating		Repairs		Misc.
		T&I	Other	T&I	Other	Contract	T&I	Other	T&I	Other	Material Expense
1	VPS	10,000		20,200	5,200	35,400	1,900	15,200	3,100	12,200	32,400
2	Decarbonizer				4,800	4,800		11,500		9,400	20,900
3	FOCU				15,200	15,200		42,300		34,200	76,500(1,017,536)
4	Poly (Bbls. Polymer)				4,800	4,800		12,400		10,000	22,400
5	Catalytic Reforming	10,000		6,800	15,200	32,000	500	12,800	4,500	10,600	28,400
6	Alkylation (Bbl. Alky)	3,700		1,300	4,800	9,800	900	10,100	2,100	8,100	21,200
7	Hydrotreating	10,000		6,800	4,800	21,600	500	13,000	3,500	10,600	27,600
8	Shipping Bulk				6,100	6,100		7,500		6,100	13,600
9	RP&S							39,000		31,700	70,700
10	BS&W							500		500	1,000
11	Waste Oil Rec.							600		500	1,100
12	Total Direct	33,700		35,100	60,900	129,700	3,800	164,900	13,200	133,900	315,800(1,017,536)
13	SP&W				1,600	1,600		29,800		24,500	54,300 1,610,636
14	Indirect Plant		49,200		21,500	70,700		130,800		100,900	231,700 197,470
15	GRAND TOTAL	33,700	49,200	35,100	84,000	202,000	3,800	325,500	13,200	259,300	601,800 790,570

GVC-JFE 2-11-65
JRL(2)
LHB. (Bookkeeping)

CHEMICALS AND FUEL CONSUMED ESTIMATED CRUDE REFINING OPERATING EXPENSES - YEAR 1965 PUGET SOUND PLANT

R-1211-E
Exhibit 3

() Indicates Red Figures

CHEMICALS

Line No.		FUEL CONSUMED				Total		Total Fuel Line No.
		Hydrogen	Acid	Catalyst	Other Chemicals	Chemicals	Gas (2)	
		Amount	Tons	Amount	Amount	Amount	Std Bbls	Std Bbls
1	VPS						11,200	676,843
2	Decarbonizer						200	30,026
3	FCOU						67,100	207,342
4	Poly (Bbls. Polymer)							
5	Catalytic Reforming							
6	Alkylation (Bbls. Alky)							
7	Hydrotreating							
8	Shipping - Bulk							
9	RP&S							
10	ES&W							
11	Waste Oil Recovery							
12	Total Direct							
13	SP&W							
14	Indirect Plant							
15	GRAND TOTAL							

- (1) See Exhibit 6 for Detail
- (2) Gas Consumed, 828,111 bbls, plant production, 32,400 purchased
- (3) Total Fuel at FCCU used at CO Boiler for Steam Production

WA-TEX 008946

GVC-JPE 2-11-65
JRL(2)
LHB (Bookkeeping)

* Start-up?
too low for

Note
3-15-65 PSP
GAB says use of
switched to
more of cheaper
Catalyst \$ 1965
Usage = 5.5 tons
Day 365 days / yr
2007.5 tons / yr
#250.00 v Avg Cost
\$ 501,875

Handwritten notes and calculations at the top right of the page, including a large sum: 1,577,569 + 541,897 = 2,119,466.

64.7% Prod Gas @ 1.65

29.9% Hi Vis Lgd 1.16

5.4% Purch. Gas 2.50

1,332,774

862,305 @ 1.65 # 1422803

~~398,500~~ @ 1.16 462260

71969 @ 2.50 179,923

2,064,986

319,68
40.54

860,511

71,969 @ 2.50 179,923

~~788,542 @ 1.16 914,709~~

472,263 @ 1.16 547,825

00 L 351
~~833 14~~
0440
051
8831

DETAILED DISTRIBUTION OF CHEMICALS CONSUMED
ESTIMATED CRUDE REFINING OPERATING EXPENSES - YEAR 1965
PUGET SOUND PLANT

P-1211-E
Exhibit 6
Sheet 1 of 2

Line No.	Chemical	V.P.S.		F.C.C.U.		POLY		ALKYLATION		HYDROTREATING		RP&S	
		Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
1	Acid, Alky Sulfuric							17770000	\$186300				
2	Anti-Foam DC #200	575	\$1500										
3	Catalyst:-												
4	HDS-2 Hydrotreater			2775000	555000	198200	57800			5000	4000		
5	Filtrol-Gr. 800												
6	UOP #1 Poly												
7	UOP-R-5 Platinum												
8	Gaustic Soda			166000	5400	158000	5200	82500	2650				
9	Monoethanolamine					25000	7600						
10	Naleo 537-D	*2300	6300										
11	Sodium Chloride			13000	200	212000	3200			15600	100	295000	\$4500
12	Hydrogen												
13	TOTAL		\$7800		\$560400		\$70800		\$192150		\$4100		\$4500
	* Gallons												

GVC-JFE 2-11-65
JRL(2)/
LHB (Bookkeeping)

WA-TEX 008949

WA-TEX008949

DETAILED DISTRIBUTION OF CHEMICALS CONSUMED
ESTIMATED CRUDE REFINING OPERATING EXPENSES - YEAR 1965
PUGET SOUND PLANT

R-1211-E
Exhibit 6
Sheet 2 of 2

Line No.	Chemical	CAT. REFORMING		TOTAL	
		Quantity	Amount	Quantity	Amount
1	Acid-Alky Sulfuric			15855319	\$186300
2	Anti-Foam DG#200			575	1500
3	Catalyst/-				
4	HDS-2 Hydrotreater			5000	4000
5	Filtrol Gr.-800			2775000	555000
6	UOP #1 Poly			198200	57800
7	UOP #R-5 Platinum			10800	59800
8	Caustic Soda	10800	\$ 59800	489000	15900
9	Monoethanolamine	82500	2650	25000	7600
10	Nalco 537 D			* 2300	6300
11	Sodium Chloride			520000	7900
12	Hydrogen			156000	2200
13	TOTAL	140400	2100		\$904300
			\$ 64550		

* Gallons

GVC-JPE 2-11-65
JRL(2)
LHB (Bookkeeping)

WA-TEX 008950

WA-TEX008950

DETAILED PLANT DISTRIBUTION OF
STEAM, POWER AND WATER
ESTIMATED CRUDE REFINING OPERATING EXPENSES - YEAR 1965
PUGET SOUND PLANT

R-1211-E
Exhibit 4
Sheet 1 of 3

DETAILED 1
STEAM,
ESTIMATED CRUDE REF:
PUGET

Line No.	MM BTU	S T E A M				Total Amount
		Fuel Consumed Barrels	Purchased Power Amount	Purchased Water Amount	Other Cost Amount	
1 VPS	485,000	96,126	118,555	5,678	50,141	175,414
2 Decarbonizer	247,000	48,954	60,378	2,892	25,536	89,335
3 FCCU	1,967,000	389,854	480,823	23,034	203,357	711,428
4 Polymerization	514,000	101,873	125,645	6,019	53,140	185,905
5 Catalytic Reforming	113,000	22,396	27,622	1,383	11,682	40,869
6 Alkylation	665,000	131,801	162,556	7,787	68,751	240,519
7 Hydrotreating	49,000	9,712	11,978	574	5,066	17,723
8 Shipping Bulk	43,000	8,522	10,511	504	4,445	15,552
9 RP&S	470,000	93,153	114,889	5,504	48,591	169,991
10 B&W	43,000	8,522	10,511	504	4,445	15,552
11 Waste Oil Recovery	59,000	11,694	14,422	691	6,100	21,339
12 Total	4,655,000	922,608	1,137,890	54,510	481,254	1,683,627
13 SP&W	332,000	65,802	81,156	3,888	34,324	120,079
14 Indirect Plant	4,987,000	988,410	1,219,046	58,398	515,578	1,803,706
15 GRAND TOTAL						

* % K.W. Demand
Purchased For

7.19
9.07
15.57
6.27
4.13
1.47
14.30
3.75
13.39
.82
76.64
23.96
100.0

* 1965 POWER BILLS W
based on KW Demand rather

(11.1.53)
Fuel Volume
484.9

GVC-JPE 2-11-65
JRL/2
LHB (Bookkeeping)

T E X A C O

Anacortes, Washington 98221, February 23, 1966

FORM R-1211-E
ESTIMATED OPERATING EXPENSES
YEAR 1966

AIR MAIL

PERSONAL

MEMORANDUM

Mr. J. R. Lemmer

Houston, Texas

We are submitting herewith Estimated Crude Refining Expenses, Form R-1211-E. Exhibits 1, 2, 3 and 4.

The activities shown on the attached statement are in agreement with those shown in the Annual Budget, Form R-1259, as submitted except, Labor was increased by \$88,490 and Contract Work was increased by \$18,200 because of the 4 1/2% wage increase which became effective after the budget was submitted. No new equipment is to start up and none of the present equipment is to be shut down during the year.

The following is a breakdown of expenses included under Miscellaneous Expense:

FCCU - Credit for Steam	(894,700)	
Sub-total Direct Plant		\$ (894,700)
Charge Steam Dept. for above item	894,700	
Purchased Power	285,600	
Purchased Water	117,200	
Total SP&W		1,297,500
Vacation Pay	149,500	
A&S Benefits	25,510	
Telephone	13,100	
Telegraph	2,400	
Contributions & Donations	200	
Memberships & Subscriptions	30	
Postage	1,300	
Traveling & Personal	8,000	
All Other Expense	9,370	
Marine Dept-Rentals & Services	(11,200)	
Sales Dept.-Electric Sign	(800)	
Rentals	6,315	
Sub-total Indirect		203,725
Grand Total Miscellaneous Expense		\$606,525

Included in Material Operating is an estimate of \$6,980 for Printing and Stationery and excluded from Material Operating is an estimate of \$3,000 for Hydrogen which has been included with Chemicals.

Mr. J. R. Lemmer

- 2 -

2-23-66

Labor costs are based on the following manpower:

	<u>No. Men</u>	<u>Cost</u>
Calendar Personnel & Other Staff	6	0
Construction & Outside Charges	4	31,400
Plant Expense - Form R-1259	258	2,054,730
Total Labor	268	2,086,130
Less: Vacation Pay		149,500
A&S Benefits		25,510
Construction & Outside		31,400
Labor Distributed on Form R-1211-E as Labor		1,879,720

The following is a breakdown of the component costs used in pricing out steam produced from CO and waste heat boilers:

	<u>FCCU</u>
M Lbs. Steam	2,211,000
BTU's/Lb.	1,326
MM BTU's	2,932,000
Total Steam Cost basis Unit Cost previous report,	.30516
Credit for Steam	\$ 894,700

Component Costs:

Labor	199,071
Material	28,809
Contract Work	626
Fuel-Bbls.	427,747
Fuel-Cost	629,332
Transfers of Steam	(14,315)
Transfers from Power	39,725
Transfers from Water	11,452
	\$ 894,700

Signed: G. V. CARROLL

G. V. CARROLL

WWC-JPE

JRL(2)

LHB (Bookkeeping)

Attachments

PLANT LABOR AND CONTRACT WORK
ESTIMATED OPERATING EXPENSES - YEAR 1966
PUGET SOUND PLANT

Line No.	Activities	LABOR					Contract Work		
		Barrels	Operators-Ex. I&T	I&T	Maint.	Total	I&T	Maint.	Total
			Number	\$ Amt.	\$ Amt.	\$ Amt.			
1	VPS	21,493,000	14.0	110,500	58,100	168,600		43,400	43,400
2	Decarbonizer		(1)		26,700	26,700		5,300	5,300
3	FGU	7,918,135	18.0	148,400	79,300	227,700		6,700	6,700
4	Poly (Bbls. Polymer)	516,058	7.0	56,400	34,000	90,400		5,300	5,300
5	Catalytic Reforming	3,096,000	7.0	56,400	23,700	80,100		5,500	5,500
6	Alkylation (Bbls. Alkylate)	702,189	7.0	56,600	30,800	87,400		9,500	9,500
7	Hydrotreating	9,660,611	7.0	56,400	13,500	69,900	37,600	5,500	43,100
8	Shipping Bulk	20,068,494	(2)		33,800	33,800		6,700	6,700
9	RP&S		20.0	195,300	81,400	276,700		36,100	36,100
10	BS&W		0.5	3,800		3,800			
11	Waste Oil Recovery		0.5	3,800		3,800			
12	Total Direct	20,445,000	81.0	687,600	381,300	1,068,900	325,000	124,000	449,000
13	S.P. & W.		13.0	98,200	115,400	213,600		2,100	2,100
14	Indirect Plant		14.0(3)	113,700	409,520	523,220		28,800	28,800
15	GRAND TOTAL		108.0	899,500	906,220	1,879,720	325,000	154,900	479,900

- (1) Operated by VPS Personnel
(2) Included in RP&S Dock Forces
(3) Includes 13 from Laboratory and 1 from Effluent Treating

GVC-JPE 2-23-66

JRL (2)

LHB (Bookkeeping)

MATERIAL, MISCELLANEOUS EXPENSE AND FUEL CONSUMED
ESTIMATED OPERATING EXPENSES - YEAR 1966
PUGET SOUND PLANT

Line No.	Material		Misc. Expense	Fuel Consumed		
	Int	Maint.		Total Gas Std. Bbls.	Liquid Std. Bbls.	Total Fuel Amount
1 VPS		26,500		426,759	10,058	797,700
2 Decarbonizer		17,100		21,554	0	39,600
3 FCCU	225,000	62,800	(894,700)	60,300	60,300	177,400
4 Poly (Bbls. Polymer)		18,400				
5 Catalytic Reforming		19,200		199,729	21,554	390,100
6 Alkylation (Bbls. Alkylate)		14,900				
7 Hydrotreating	8,000	19,400		241,399	0	440,500
8 Shipping Bulk		11,200				
9 RP&S		58,100				
10 BS&W		900				
11 Waste Oil Recovery		900				
12 Total Direct	233,000	249,400	(894,700)	949,741	91,912	1,845,300
13 SP&W		44,600	1,297,500	196,022	196,225	577,100
14 Indirect Plant		187,250	203,725	3,000		5,305
15 GRAND TOTAL	233,000	481,250	606,525	1,148,763	288,137	2,427,705

	Std. Bbls.	\$/Bbl.	Amount
Gas Produced	1,123,263	1.820	2,044,338
Liquid Fuel	288,137	1.107	319,087
Purchased Gas	25,500	2.521	64,280
TOTALS	1,436,900	1.690	2,427,705

GVC-JPE 2-23-66

JRL (2)

LHB (Bookkeeping)

DETAILED DISTRIBUTION OF CHEMICALS CONSUMED
ESTIMATED CRUDE REFINING-OPERATING EXPENSES - YEAR 1966
PUGET SOUND PLANT

Line No.	Chemical	V.P.S.		F.C.C.U.		Poly		Alkylation	
		Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
1	Acid, Alky Sulfuric-Tons								
2	Anti-Foam DC-200-Lbs.	585	1,300					8,740	205,600
3	Catalyst: -								
4	HDS-2 Hydrotreater-Lbs.								
5	Davison F-1-13-Tons			1299.8	447,600				
6	UOP #1 Poly-Lbs.					53,000	14,700		
7	UOP-R-5 Platinum-Lbs.								
8	Caustic Soda - Lbs.								
9	Monoethanolamine-Lbs.			156,000	4,800	147,000	4,400	78,500	2,300
10	Malco 537-D-Gals.					33,000	9,400		
11	Sodium Chloride - Lbs.	4,890	11,400			15,000	200	263,000	4,000
12	Hydrogen - Cu. Ft.								
13	TOTAL		12,700		452,400		28,700		211,900

GVC-JPE 2-23-66

JRL(2)

LHB (Bookkeeping)

WA-TEX 008956

WA-TEX008956

DETAILED DISTRIBUTION OF CHEMICALS CONSUMED
ESTIMATED CRUDE REFINING OPERATING EXPENSES - YEAR 1966
PUGET SOUND PLANT

Line No.	Chemical	HYDROTREATING		RP&S		Cat. Reforming		Total Amount
		Quantity	Amount	Quantity	Amount	Quantity	Amount	
1	Acid, Alky Sulfuric-Tons							205,600
2	Anti-Foam DC-200-Lbs.							1,300
3	Catalyst: -							
4	HDS-2 Hydrotreater-Lbs.	4,062	3,300					3,300
5	Davison F-1-13-Tons							447,600
6	UOP #1 Poly-Lbs.							14,700
7	UOP-R-5 Platinum-Lbs.							39,400
8	Caustic Soda - Lbs.					11,200	39,400	13,800
9	Monoethanolamine-Lbs.					78,500	2,300	9,400
10	Naleo 537-D-Gals.							11,400
11	Sodium Chloride - Lbs.							5,800
12	Hydrogen - Cu. Ft.	20,000	300	370,000	5,600	180,000	2,710	3,000
13	TOTAL		3,600		5,600		44,400	759,300

GVC-JPE 2-23-66

JRL(2)

LHB (Bookkeeping)

STEAM, POWER, & WATER EXPENSES
ESTIMATED OPERATING EXPENSES - YEAR
PUGET SOUND PLANT

Line No.	Barrels	Amount	Purchased Power	Purchased Water	Other Cost	Total SP&W	Total Plant
1 VPS	133,100	195,800	20,500	22,100	85,300	323,700	1,372,600
2 Decarbonization	65,700	96,700	25,900	3,800	42,100	168,500	257,200
3 FCCU	255,900	376,300	44,600	36,700	164,000	621,600	1,223,200
4 Polymerization	63,300	93,100	17,900	15,300	40,600	166,900	309,700
5 Catalytic Reforming	16,700	24,600	12,000	8,900	10,700	56,200	595,500
6 Alkylation	118,300	174,000	4,200	11,500	75,800	265,500	589,200
7 Hydrotreating	10,900	16,100	40,800	11,800	7,000	75,700	677,300
8 Shipping Bulk	4,600	6,800	10,800	400	3,000	21,000	72,700
9 RP&S	67,800	99,700	38,200	1,700	43,400	183,000	559,500
10 BS&W	4,600	6,800	2,300	600	3,000	12,700	17,400
11 Waste Oil Recovery	7,700	11,400		600	5,000	17,000	21,700
12 Total	746,600	1,101,300	217,200	113,400	479,900	1,911,800	5,696,000
13 S.P. & W.					(2,134,900)		0,000
14 Indirect Plant	71,394	105,132	68,400	3,800	45,768	223,100	1,171,400
15 GRAND TOTAL	819,994	1,206,432	285,600	117,200	525,668	0,000	6,867,400

STEAM, POWER & WATER EXPENSES
ESTIMATED OPERATING EXPENSES YEAR 1966
PUGET SOUND PLANT

Distribution	Steam	Power	Water	Total
Fuel - Barrels	814,135		5,859	819,994
Fuel - Cost	1,197,813		8,619	1,206,432
Purch. - Power	36,139	187,897	61,564	285,600
Purch. - Water	10,323		106,877	117,200
Other Cost	462,161	2,500	61,007	525,668
TOTAL COST	1,706,436	190,397	238,067	2,134,900

Avg. Steam Cost / M Lbs.
Avg. Power Cost / KW
Avg. Water Cost / M Gals.

\$.262857
\$.005238
\$.058939

Purchased Utility Rates

* Last Increment of Power / KW
Last Increment of Water / M Gal.

\$.000000
\$.039000

SP&W Fuel Summary

Total SP&W Fuel From Exhibit II
Plus FOU Waste Heat Fuel Credit

Barrels 392,247
Barrels 427,747

TOTAL SP&W FUEL TO DISTRIBUTE

Barrels 819,994

* PSP has a power contract based on a peak demand of 8010 KW. No additional payment is required unless demand exceeds 8010 KW, and if demand exceeds 8010 KW the monthly charge will be increased by \$2.31 per KW in excess of 8010.

AVC-JPE 2-23-66

JRL (2)

LHB (Bookkeeping)