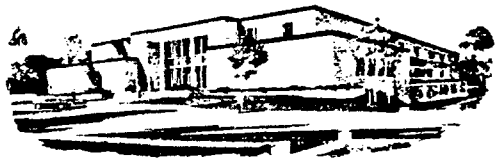
State of New Mexico



W.R. HUMPHRIES
COMMISSIONER

Commissioner of Public Lands

SLO REF NO. OG-772

P.O. BOX 1148
SANTA FE, NEW MEXICO 87504-1148

April 4, 1988

Standard Oil Production Co.
ATTENTION: Mr. R. B. Frazier
P. O. Box 4587
Houston, Texas 77210

Re: Surface Commingling of measured well fluids from State 2-1 Lease No. V-654 and State 35-1 Lease No. L-990

Gentlemen:

This office is in receipt of your letter of April 22, 1988, wherein you have requested our approval to surface commingle the well fluids from the above captioned state leases.

Before your application can be processed, please comply with State Land Office Rule No. 1.055 and submit the additional required information, and a filing fee in the amount of Thirty ($30.00) Dollars.

Our approval will be subject to like approval by the New Mexico Oil Conservation Division.

If we can be of further help please do not hesitate to call on us.

Very truly yours,

WILLIAM R. HUMPHRIES
COMMISSIONER OF PUBLIC LANDS

BY: Floyd O. Prando
FLOYD O. PRANDO, Director
Oil and Gas Division
(505) 827-5744

WRH/FOP/pm
encls.
cc: OCD-Santa Fe, New Mexico

Standard Oil
Production Company
5151 San Felipe
P.O. Box 4587
Houston, Texas 77210
713 552-8500

May 16, 1988

STANDARD OIL
PRODUCTION

State of New Mexico
Commissioner of Public Lands
P. O. Box 1148
Santa Fe, New Mexico 87504-1148

Attention: Mr. Floyd O. Prondo, Director

RE: SURFACE COMMINGLING OF MEASURED WELL FLUIDS FROM
STATE "2" #1 LEASE NO. V-654 AND STATE "35" #1 LEASE NO. 1-990

Gentlemen:

Enclosed please find a check for $30.00 as filing fee for this application. Also enclosed is a justification package with five attachments containing the information required by Rule No. 1.055. This same information has been sent to the Oil Conservation Division for their review; a copy of the cover memo is included for your information.

The attachments cover all the items noted in Rule 1.055 with the exception of Part C, State Beneficiaries. According to our records, the land is all State mineral title, with no inclusion of any university or other beneficiary other than State.

The after payout partners in the State "2" #1 Lease V-654 have been notified of our intent and have no objection to our proposal. This request is currently being reviewed by the Oil Conservation Division. Upon your verbal or written approval, we are prepared to install the meter runs for commingled storage and to proceed with testing; and, if economic, the installation of a Vapor Recovery Unit to conserve and market tank vapors.

Please review this additional information at your ealiest convenience and, if you have any questions, please call Gary R. B. Campbell at (713) 552-8941.

Sincerely,

STANDARD OIL PRODUCTION COMPANY

Randy B. Frazier

R. B. Frazier, Supervisor
Production Engineering West

RBF:GRBC/efh
0121A.24
Enclosure

B 353602

8EFC1581	CR051288	051288	.00	30.00
SH CALL	E HAMILTON	X8680-HQ		

DETACH AND RETAIN THIS STATEMENT FOR YOUR RECORDS

VENDOR CODE	CHECK NO.	AMOUNT OF CHECK	
3066464	B353602		30.00

STANDARD OIL PRODUCTION COMPANY
5151 SAN FELIPE, P.O. BOX 4587
HOUSTON, TEXAS 77210

FIRST CITY BANK
LAKE JACKSON, TEXAS
88-2232
1131

No. B 353602

DATE: 05/13/88

AMOUNT: **********30.00

PAY **********30**DOLLARS AND **00**CENTS

NOT VALID AFTER 120 DAYS

TO THE ORDER OF
NEW MEXICO STATE COMMISSIONER OF PUBLIC LANDS
P O BOX 1148
SANTA FE, NM 875041148

John R. Klein

CONSOLIDATED COMMERCIAL ACCOUNT

⑈353602⑈ ⑆113122325⑆ 050500⑈

Standard Oil
Production Company
5151 San Felipe
P.O. Box 4587
Houston, Texas 77210
713 552-8500

STANDARD OIL
PRODUCTION

May 13, 1988

State of New Mexico
Department of Energy
Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87501

Gentlemen:

SOHIO Petroleum Company, a/k/a Standard Oil Production Company, hereby requests administrative approval to surface commingle well fluids from two separate leases, each producing from the Shipp Strawn formation, into a common tank battery storage facilities.

Attachments containing the required support data are included as follows:

Attachment 1 - Discussion and technical data supporting the application

Attachment 2 - Surface plats of legal location of leases identifying the current wells on each lease

Attachment 3 - Sketch of field layout of proposed commingling lease production

Attachment 4 - Facility schematic for State "2" #1 facilities with proposed commingling layout

Attachment 5 - Mechanical data on meters, pilot and dump valve proposed

Your early review of this application would be appreciated. SOHIO currently has a production test unit on the State "35" #1 well and is venting tank vapors at the State "2" #1 tank battery. We anticipate being able to install the facilities as discussed in this application within two weeks from either a verbal or written approval of this application. State of New Mexico, Commissioner of Public Lands' consent is anticipated, pending the receipt of the additional information requested by their April 4, 1988, memo.

If you have any questions on this application or any of the supporting data, please call Gary R. B. Campbell at (713) 552-8941.

Sincerely,

STANDARD OIL PRODUCTION COMPANY

Randy B. Frazier

R. B. Frazier, Supervisor
Production Engineering West

RBF:GRBC/efh
0121A.8-9

Attachments

cc: J. D. Scarbrough
Regulatory File
Well File
Nan Smithson
State of New Mexico, Commissioner of Public Lands
P. O. Box 1148, Santa Fe, New Mexico 87504-1148
State of New Mexico, Department of Energy
Oil Conservation Division, P. O. Box 1980
Hobbs, New Mexico 88240

ATTACHMENT NO. 1

DISCUSSION AND TECHNICAL DATA SUPPORTING APPLICATION

Lease	State Lease	Legal description	No. of Wells	Location
State "2"	V-654	A2 T17S R37E	1	530 FNL, 660 FEL
State "35"	L-990	P35 T16S R37E	1	600 FSL, 660 FEL

(both in Lea County, New Mexico)

SOHIO proposal includes the installation of separate 3-phase separator and heater treater for each lease with positive displacement meters operating on a pilot with a snap-acting dump valve for both the oil and water outlets, prior to commingling of the separated metered fluids into common tank battery storage. A Vapor Recovery Unit will also be installed if, upon accurate testing, the volumes of gas and gas liquids will economically support its initial capital purchase and long term maintenance. Dependent on the total volume of oil sold, a LACT meter may be installed; however, current plans are to continue to sell based on tank gauge measurements.

Standard Oil further proposes to share the common facilities on an equal share basis, i.e. 50% each for both initial capital investment and on-going maintenance costs. In the event one lease should cease operations before the other, the remaining producing lease may purchase the outstanding 50% share in the common facilities at the appropriate COPUS value, based on equipment condition and the market value at that time. Installation of a Vapor Recovery Unit on the common tanks shall be shared 50/50 on initial capital cost, with gas and liquid sales allocated on a per bbl of oil produced, and metered from each respective lease.

The operating sequence will be identical to that of a single lease battery with production flowing or artificially lifted from the wells, transferred through surface flow lines to the individual 3-phase separators where gas is recovered and combined with gas from the heater treater and sold. Oil and water are both dumped into the heater treater where fluid is heated to break emulsions. The oil and water dump separately to tank storage prior to sales. The only exception to this operating sequence is: production, oil and water, will be metered at the oil and water outlets at the respective lease heater treater. The only operation proposed that is different from a single lease battery is the common storage facilities.

The metering scheme proposed is drawn on Attachment No. 4. The operation involved is: gas pressure from the heater treater is piped to a Kimray 12PDSS differential pilot that is upstream of a Rockwell Model 790 Series positive displacement vane meter. Once

an oil level (hydrostatic pressure) on bottom of Kimray 12PDSS equalizes, the signal is then transferred from the pilot to a Kimray diaphragm snap-acting dump valve allowing it to open and let oil travel past the pilot, through the meter, through the dump valve and to common tank storage. Each lease will have oil and water metered separately in this manner prior to commingling.

Standard Oil, as prudent operator of both leases, shall maintain all facilities in proper calibrated working order to ensure fair and equitable treatment of production. The net savings to each lease is expected to be approximately $20,000, assuming new tanks and new equipment. The cost split is summarized below, and does not include the on-going maintenance costs that will also be shared.

Equipment Cost (New)	
3 - 500 bbl Stainless Steel Tanks	$15,000
1 - 500 bbl Fiberglass Tank	5,600
1 - Vapor Recovery Unit	14,000
1 - Installation*	15,000
Subtotal	49,600
Less:	
4 - P.O. Meters with installation	10,000
Total	$39,600
50% share equals	$19,800

* includes labor, pipe, valves and fittings, and painting,

Nothing in this application will lower the volume or the value of the hydrocarbons produced. Economic analysis of this proposal results in the following benefits.

(1) Up to $20,000 savings to each lease by being able to share tank facilities,

(2) The elimination of additional Right-of-Ways and subsequent surface damage to State land resulting from installation of additional oil and gas gathering and sales lines,

(3) Centralized facilities for ease of operation and the improved economics to the producer for the installation of a Vapor Recovery Unit to conserve and market tank vapors,

(4) The increased royalty revenue to the State of New Mexico through the sale of tank vapors, and

(5) Reduce risk of oil or water spillage due to only one tank battery facility.

ATTACHMENT NO. 1 CONTINUED

FLUID PROPERTIES OF WELLS; STRAWN FORMATION

	STATE "2" #1	STATE "35" #1	COMMINGLED EXPECTED
Water			
SG	1.121	1.1192	1.12
TDS	183,683	187,442	185,562
RES @ 77	.061	.061	0.61
CL	112,210	113,630	112,920
Oil API @ 60°	43.7	44.5	44.1
	Oil from Flopetrol-Johnson. Water from from Martin Labs, Midland, TX	From Dowell-Schlumberger Labs, Hobbs, NM	Data Averaged

The relative API specific gravities of the separate lease oils indicate no loss of value when commingled. There will be no loss of volume as the GOR's are consistent for both wells, and both wells produce from the Shipp Strawn pool..

In addition, the commingling of the two volumes of liquids into common tanks is expected to result in economic recovery of tank vapors with a BTU content of up to 2300 BTU/MCF and as high as 15-16 gpm liquid recovery. Therefore, total hydrocarbons recovered and sold will actually increase the commercial value as a result of the commingling.

Below is a summary of the original test allowable fluid rates and current fluid rates for both wells.

WELL TEST INFORMATION

WELL	TEST ALLOWABLE					5/11/88 PRODUCTION				
	Oil BOPD	Water BWPD	Gas MCFD	CH x/64	FTP PSIG	Oil BOPD	Water BWPD	Gas MCFD	CH x/64	FTP PSIG
STATE "2" #1	751	48	550	26	740	227	58	220	22	190
STATE "35" #1	448	74	448	19	527	271	50	245	20	252

CH = Choke setting x/64
FTP = Flowing tubing pressure (psig)

GRBC/efh
0121A.10-13
5/13/88

ATTACHMENT 2a

NEW MEXICO OIL CONSERVATION COMMISSION
WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 14-65

All distances must be from the outer boundaries of the Section.

Operator	Lease	Well No.
SOHIO PETROLEUM COMPANY	STATE 2	1

Unit Letter	Section	Township	Range	County
A	2	17 SOUTH	37 EAST	LEA

Actual Footage Location of Well: 530 feet from the NORTH line and 660 feet from the EAST line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
3751.4	LOWER STRAWN	SHIPP STRAWN	82.39 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

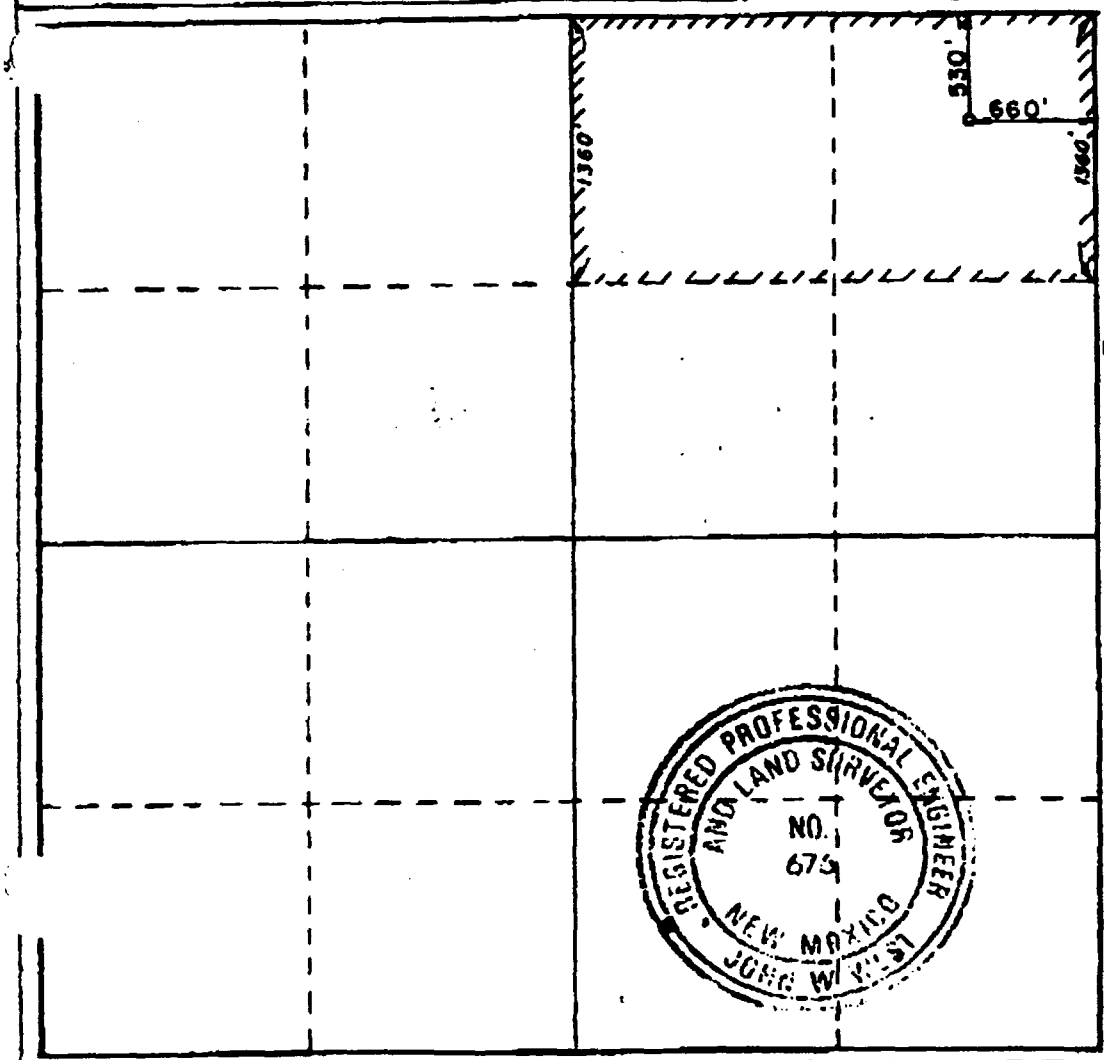
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☐ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name: John W West

Position: AGENT

Company: SOHIO PETROLEUM COMPANY

Date: NOVEMBER 12, 1987

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: NOVEMBER 11 AND 12, 1987

Registered Professional Engineer and/or Land Surveyor

John W West

Certificate No. JOHN W. WEST, 676
RONALD J. EIDSON, 3239

ATTACHMENT #2

NEW MEXICO OIL CONSERVATION COMMISSION

WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section

Operator	Lease	Well No.
Sohio Oil Company	State 35	1

Unit Letter	Section	Township	Range	County
P	35	15 South	37 East	Lea

Actual Footage Location of Well: 500 feet from the south line and 660 feet from the east line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
3753.9	Lower Strawn	Shipp Strawn	$E\frac{1}{2}SE\frac{1}{4}$ 80 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

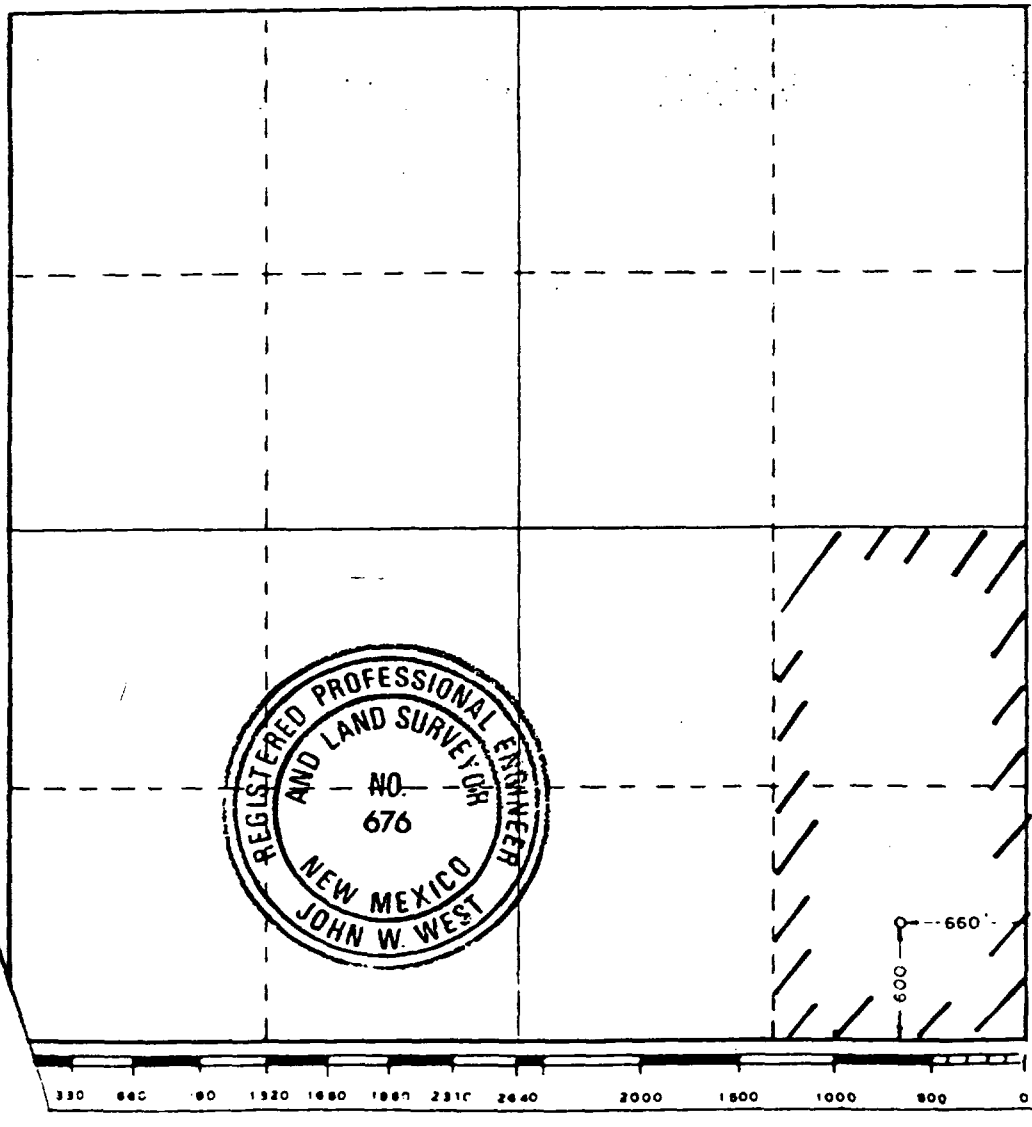
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☐ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name

Position

Company

Date

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed
February 15, 1988

Registered Professional Engineer and/or Land Surveyor

Certificate No. JOHN W. WEST. 676
RONALD J. EIDSON. 3239

ATTACHMENT NO. 5

SECTION 35
16S - 37E

SECTION 36
16S - 37E

35-1

LEASE ROAD

3-371 KVA
TRANS FORMERS

FLOWLINE (±1200' ±)

440'

SECTION 2
17S - 37E

EXISTING "2" #1
FACILITY

2-1

PHILLIPS
GAS SALES

TEX-NEW MEX
OIL SALES

LEASE ROAD

36

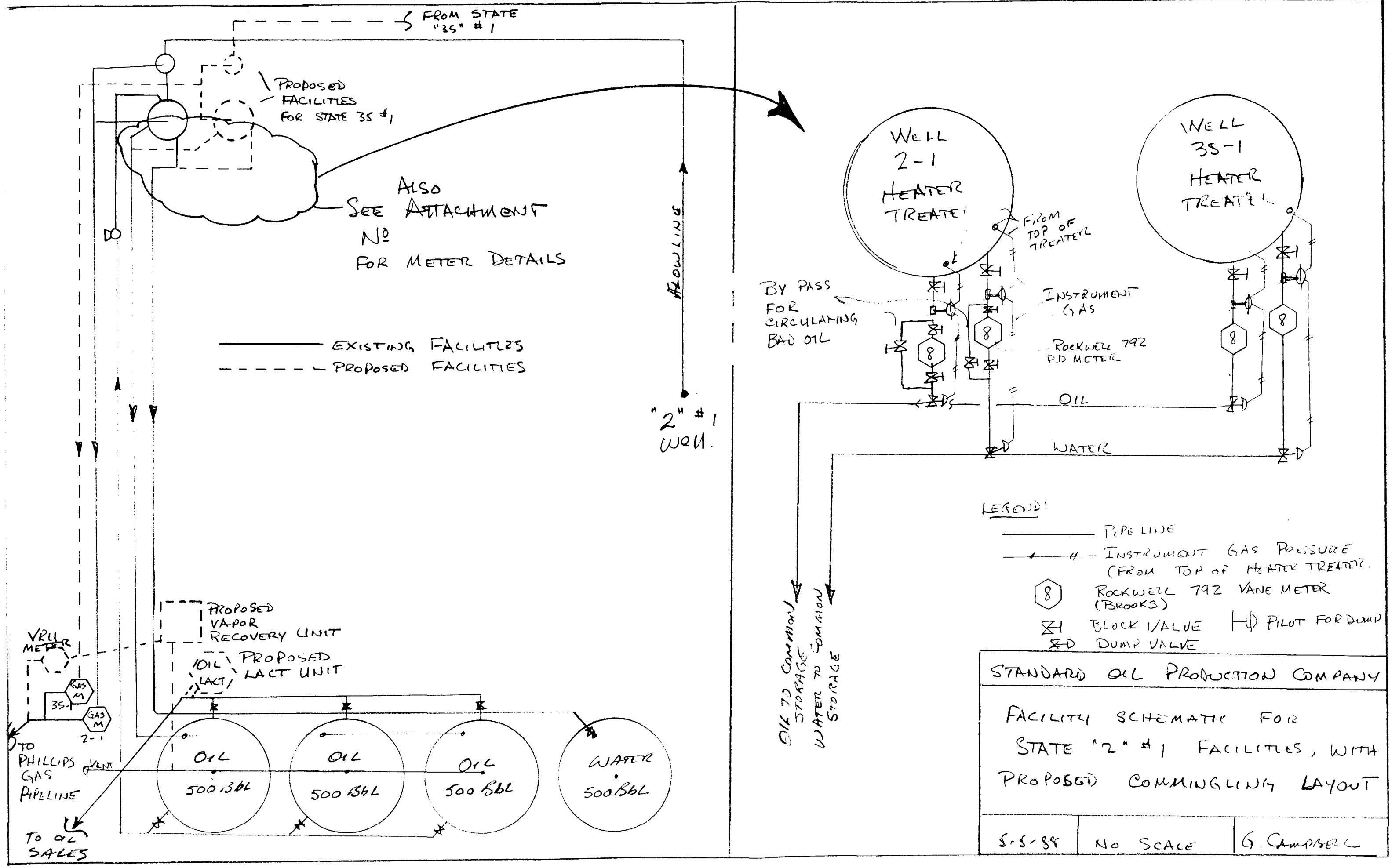
——— FLOWLINES - ALL ARE ANTICIPATED TO BE ON SURFACE

STANDARD OIL PRODUCTION COMPANY

FIELD LAYOUT OF PROPOSED COMMINGLED LEASE PRODUCTION

5-9-88	APPROXIMATE 1" = 300'	S CAMPBELL

ATTACHMENT IV-4



STANDARD OIL PRODUCTION COMPANY

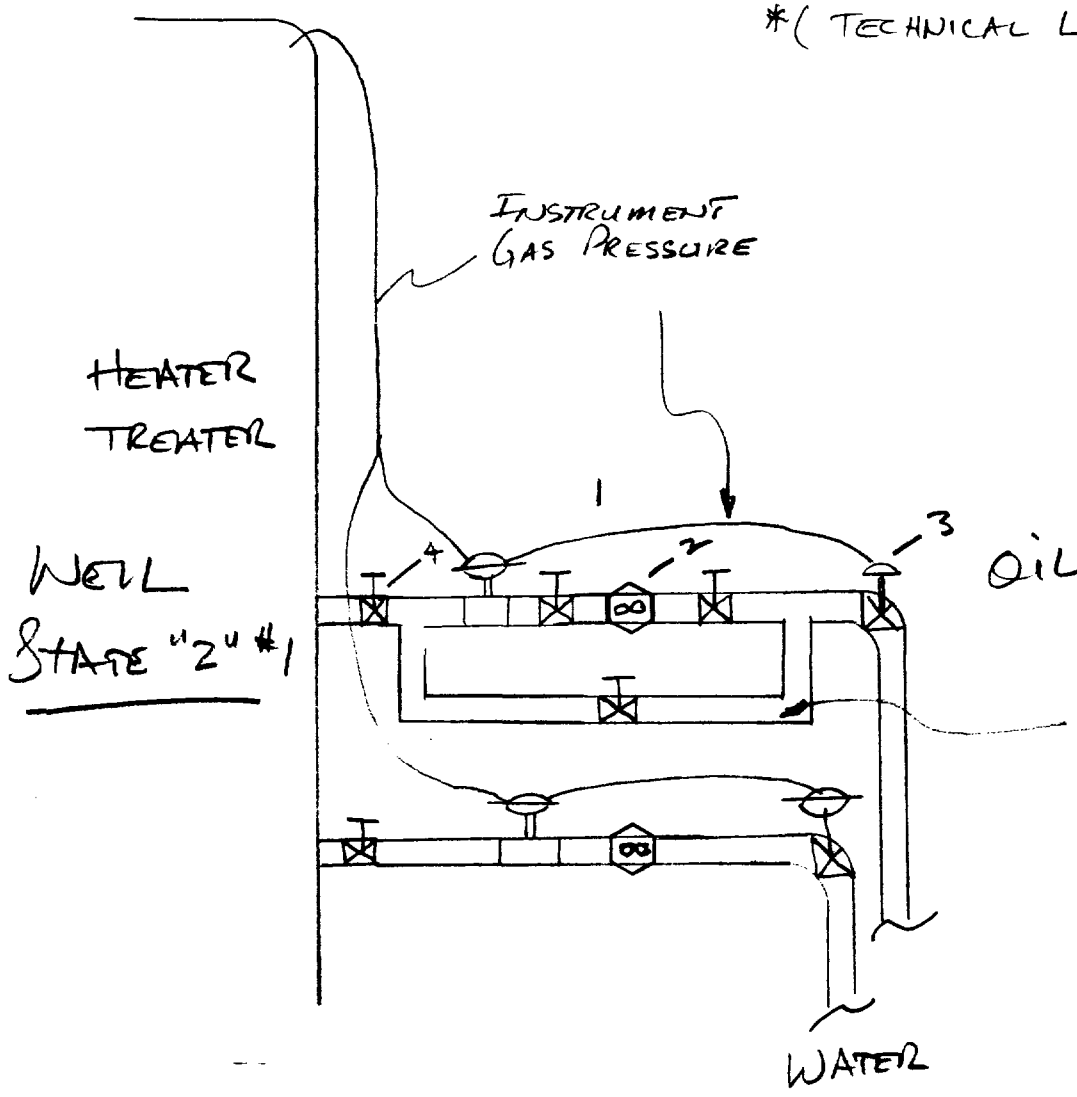
FACILITY SCHEMATIC FOR STATE "2" #1 FACILITES, WITH PROPOSED COMMINGLING LAYOUT

5-5-88	NO SCALE	G. CAMPBELL

ATTACHMENT Nº 5

ITEM	DESCRIPTION
* 1	KIMRAY 12 PDSS PILOT
* 2	ROCKWELL 792 METER
* 3	KIMRAY DUMP VALVE 212 SMA PO W/O/TI.
4	¼ TURN BLOCK VALVE

*(TECHNICAL LITERATURE INCLUDED).



STANDARD OIL PROD. CO.		
TYPICAL METER RUN; MECHANICAL LAYOUT		
5/11/88	NO SCALE	G. CAMPBELL

ITEM 1

KIMRAY, Inc. 12 PDSS DIFFERENTIAL PILOT Oklahoma City, Okla.

APPLICATIONS:

For liquid level control in oil and gas separators where a spread in level is desired.

Indication or control of differentials in low pressure meter runs.

High level shut-in.

For use with Kimray MA-PO series motor valves or valves which use 5-30 p.s.i.g. on the motor valve diaphragm.

FEATURES:

Liquid level pilot with adjustable spread for use with Pressure Opening Motor Valve.

Controls small set differentials in pressures up to 125 p.s.i. Standard differential adjustable to 36 inches of water. Spring for 100 inches of water differential available on request.

Spread adjustable from 6 to 12 inches of water pressure.

Adjustable supply to operate with motor valve actuators requiring from 5 to 30 p.s.i.g.

WORKING PRESSURE:

125 p.s.i.g. max.

SUPPLY PRESSURE:

5 to 30 p.s.i.g.

OUTPUT PRESSURE:

0 p.s.i.g. or supply pressure.

OPERATION:

The colored sectional drawing of the 12 PDS Pilot and 3 PS Snap Pilot is shown for snap liquid level control when used with a Pressure Opening Motor Valves.

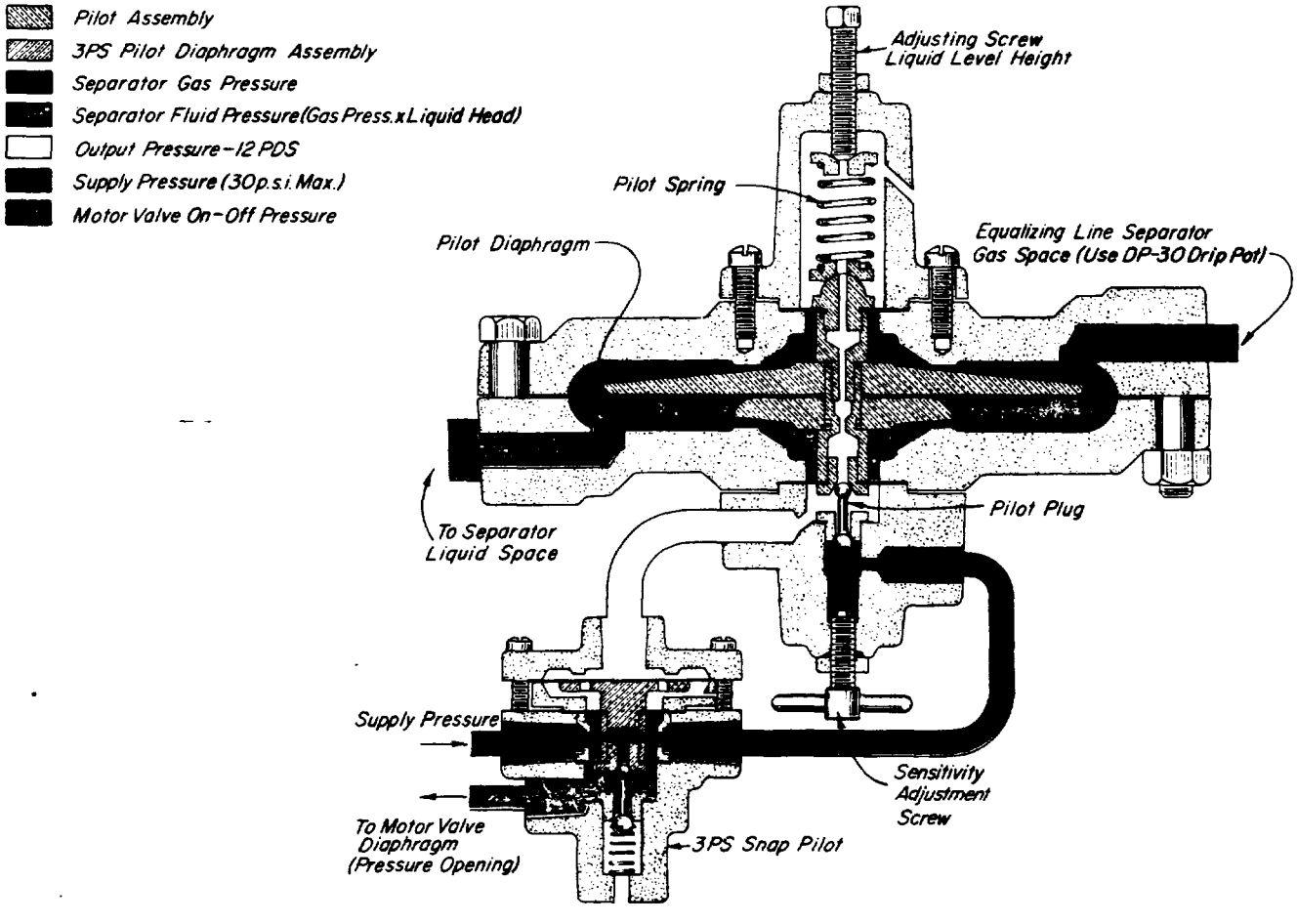
The gas equalizing line from the pilot to the separator gas space (Red) must be located at a point on the vessel where the pressure is the SAME as in the liquid chamber, not to the vent line or downstream from mist extractor or baffles. A DP-30 Drip Pot is furnished for installation on the Pilot in the gas equalizing line.

When the Separator Gas Pressure (Red) is equalized across the PILOT DIAPHRAGM as described above, the only upward force to move the Pilot Assembly is the liquid head under the PILOT DIAPHRAGM. The load of the PILOT SPRING opposes the liquid head and can be varied by the ADJUSTING SCREW to increase or decrease the liquid level.

As the liquid level rises in the separator, it overcomes the PILOT SPRING and forces the Pilot Assembly upward, closing the lower seat (Violet to Yellow) and opening the upper seat (Yellow to Atmosphere). Decreasing Yellow pressure on the main diaphragm of the 3 PS pilot permits the 3 PS Diaphragm Assembly to snap upward, closing the vent (Blue to Atmosphere) and opening the inlet (Violet to Blue). Blue pressure opens the motor valve.

As the liquid level decreases in the separator, the Pilot Assembly moves downward closing the upper seat (Yellow to Atmosphere) and opening the lower seat (Violet to Yellow). Yellow pressure on the 3 PS Main Diaphragm closes the inlet (Violet to Blue) and opens the vent (Blue to Atmosphere). Vented Blue pressure allows the motor valve to close.

The spread of liquid level may be adjusted from 6" to 12" by varying the spring load on the PILOT PLUG. An increase in spring load on the PILOT PLUG increases the spread. One turn on the adjustment changes the spread approximately 1¾".



WAS Rockwell

IDM 2

(S)DS-793

BROOKS®

THE MEASURE OF EXCELLENCE

DESIGN SPECIFICATIONS

BROOKS-Model 792/793 Vane Meters

November, 1980

(Supersedes issude dated May, 1979)

Model 792A High Pressure Water Service Only
Model 793A High Pressure Water Service Only
Model 793V High Pressure Water and Oil or Oil Service

DESCRIPTION

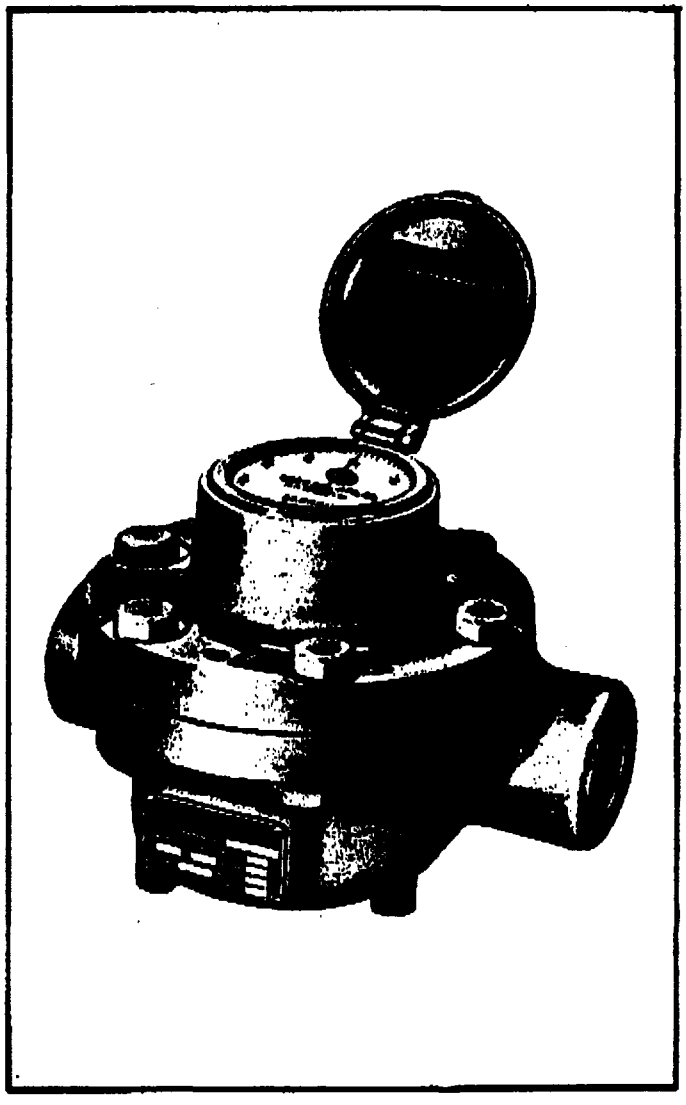
The 790 Series Vane meter for waterflood service and oils service, are compact, newly designed and reliable meters having only one moving part. The new design resulted from records of a two-year study of numerous units in actual installations. Improvements have been incorporated into the design to prolong meter life, simplify and further reduce an already low maintenance cost factor.

The meters remain unexcelled for providing a dependable permanent record of operations. The scientifically selected corrosion resistant materials of the case and internal construction were selected specifically for secondary recovery water service, or oil service.

The register is a hermetically sealed unit with magnetic drive and is protectively sealed against hazards of moisture and dirt. No stuffing box, no wetted gear train, and dependable accuracy help make this meter the most reliable unit in its field.

Rotor assembly has teflon coated magnets for corrosion resistance and bushings are of a select carbon grade to extend rotor life.

The separate rotor shaft of chromed stainless steel is rigidly contained within the body to greatly improve meter life.



DESIGN FEATURES

- *Permanent volume record
- *Full range accuracy
- *Register isolated from line pressure
- *Selected grade carbon bushings
- *75 BPH maximum
- *Only one stuffing box
- *5000 PSI working pressure
- *Hermetically sealed register
- *Non-wetted gear train

ITEM 3

KIMRAY, Inc. DIAPHRAGM & PISTON BALANCED MOTOR VALVES Oklahoma City, Okla.

APPLICATIONS:

As oil or water valve for separators, Meters, Water Knockouts.

FEATURES:

Balanced single seat
Working pressure — See Type Valve
Diaphragm Pressure — 10 p.s.i. min.
Easy to service and repair.
Available for pressure opening or pressure closing service.

RECOMMENDED SUPPLY PRESSURE:

For pressure opening valves; 10 to 100 p.s.i.
For Pressure closing valves; 10 to 25 p.s.i.

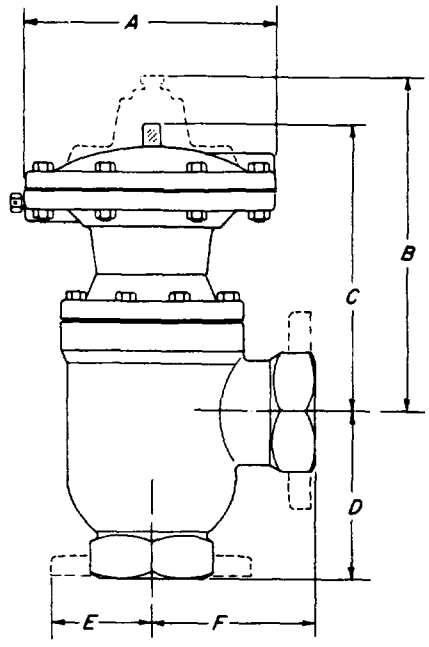
CAPACITY — Bbls. Water/Day. Steady Flow at 125 p.s.i. Max.

Pressure Drop Across Valve p.s.i.	VALVE SIZE			
	2"	3"	4"	6"
1	800	1,500	2,400	9,500
2	1,150	2,100	3,400	13,300
3	1,400	2,600	4,150	16,300
4	1,600	3,000	4,800	18,900
5	1,800	3,450	5,350	21,000
10	2,550	4,750	7,600	30,000
15	3,100	5,800	9,300	36,500
20	3,650	6,700	10,880	42,200
30	4,400	8,250	13,200	51,700
40	5,150	9,500	15,200	59,700
50	5,700	10,600	17,000	66,700
60	6,300	11,600	18,600	73,100
70	6,800	12,500	20,100	79,000
80	7,250	13,400	21,500	84,500
100	8,100	15,000	24,000	94,300

For gravity correction, multiply the above figures by $\frac{1}{\sqrt{G}}$. Where "G" is the specific gravity of the flowing liquid.

CONSTRUCTION

Bodies & diaphragm housings are available in a choice of either gray iron, ductile iron or steel castings. Valve stem is a type of 303 stainless. Diaphragms and seat materials are reinforced oil resistant synthetic rubber. Each valve is given a complete operational test after assembly. Standard maximum service temperature is 225°F. Modification for service temperature of 350°F. is available as an "extra," when specified on order.



MA SERIES
CAST IRON, DUCTILE,STEEL
DIMENSIONS — INCHES

Line Size	A	B	C	D	E	F
2"	6 1/2	9	8 1/2	4 1/4	3	4 1/4
3"	8 1/2	11 3/4	10 1/4	5 1/2	3 3/4	5 1/2
4"	8 1/2	12 1/2	11	6 1/2	4 1/2	6 1/2
6"	10 3/4	—	16 11/16	10 3/8	5 1/2	7 7/8