CTB 508

API N° pDev 0020119930

PHILLIPS PETROLEUM COMPANY
FARMINGTON, NEW MEXICO 87401
5525 HWY. 64 NBU 3004

February 27, 1998

MAR - 3 1998

Re: 29-6 #1 CPD Off-Lease Measurement
29-6 #2 CPD Off-Lease Measurement
Amendment For 29-6 #1 & #2 CPDs

State of New Mexico
Energy, Minerals & Natural Resources Dept.
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

Attn: David Catanach

Phillips Petroleum Company respectfully requests New Mexico Oil Conservation approval for off-lease measurement/commingling of gas through the subject central points of delivery (CPDs) located in Rio Arriba County, New Mexico. The original application for each of the CPDs was approved by the BLM on March 23, 1995 and the allocation method was approved by the OCD on April, 10 1995. The amendment for the 29-6 #1 and #2 CPDs was approved by the BLM on February 29, 1996 and the allocation method was approved by the OCD on February 13, 1998. A copy of the following documents are attached for your reference:

1) **Original application for the 29-6 #1 CPD dated February 23, 1995 and approved by the BLM on March 23, 1995**
2) **Approval of the allocation method for the 29-6 #1 CPD by Frank Chavez of the OCD dated April 10, 1995.**
3) **Original application for the 29-6 #2 CPD dated February 23, 1995 and approved by the BLM on March 23, 1995.**
4) **Approval of the allocation method for the 29-6 #2 CPD by Frank Chavez of the OCD dated April 10, 1995.**
5) **Amendment to the 29-6 #1 and #2 CPDs dated February 13, 1996 and approved by the BLM on February 29, 1996.**
6) **Approval of the allocation method for the amendment to the 29-6 #1 and #2 CPDs by Frank Chavez of the OCD dated February 13, 1998.**

There are 10 wells connected to the 29-6 #1 CPD. There are 24 wells connected to the 29-6 #2 CPD. There are 4 wells involved in the amendment to the 29-6 #1 and #2 CPDs.

As we discussed by phone last year, Phillips has several cases where off-lease measurement/commingling approval was obtained from the BLM without approval from the OCD in Santa Fe. This was unintentional. We did obtain approval for the allocation method on these cases from the OCD office in Aztec. It was not known at that time that additional approval was needed from the OCD in Santa Fe.

If you have any questions concerning this, please call me at (505) 599-3450.

Sincerely,
Phillips Petroleum Company

Doyle Pruden
Accounting Specialist

cc: Frank Chavez-OCD Aztec, NM
Danny Jaap

PHILLIPS PETROLEUM COMPANY
FARMINGTON, NEW MEXICO 87401
5525 HWY 64 NBU 3004

February 23, 1995

Bureau of Land Management
ATTN: Mr. Mike Pool
1235 La Plata Highway
Farmington, NM 87401

29-6 #1 CPD
Off-Lease Measurement of Gas

Dear Mr. Pool:

Phillips Petroleum Company requests approval for off-lease measurement/commingling of gas through the subject central point of delivery (CPD) located in Rio Arriba County, New Mexico. Our original request for approval was submitted on August 31, 1994. Due to additional information requests and changes in our proposal, a complete new application is being submitted.

The required information for this application is attached. Phillips is the only operator participating in this CPD which contains only 29-6 Unit Fruitland Coal wells. If additional wells are proposed to be added to the system, prior approval will be obtained.

If you have any questions or if additional information is required, please contact me at 599-3460.

Sincerely,

PHILLIPS PETROLEUM COMPANY

E J Hasely

Ed Hasely
Environmental/Regulatory Engineer

COPY

attachments
cc: Frank Chavez - OCD Aztec, NM
J. W. Taylor

leh\296#1cpd.mea

APPROVED

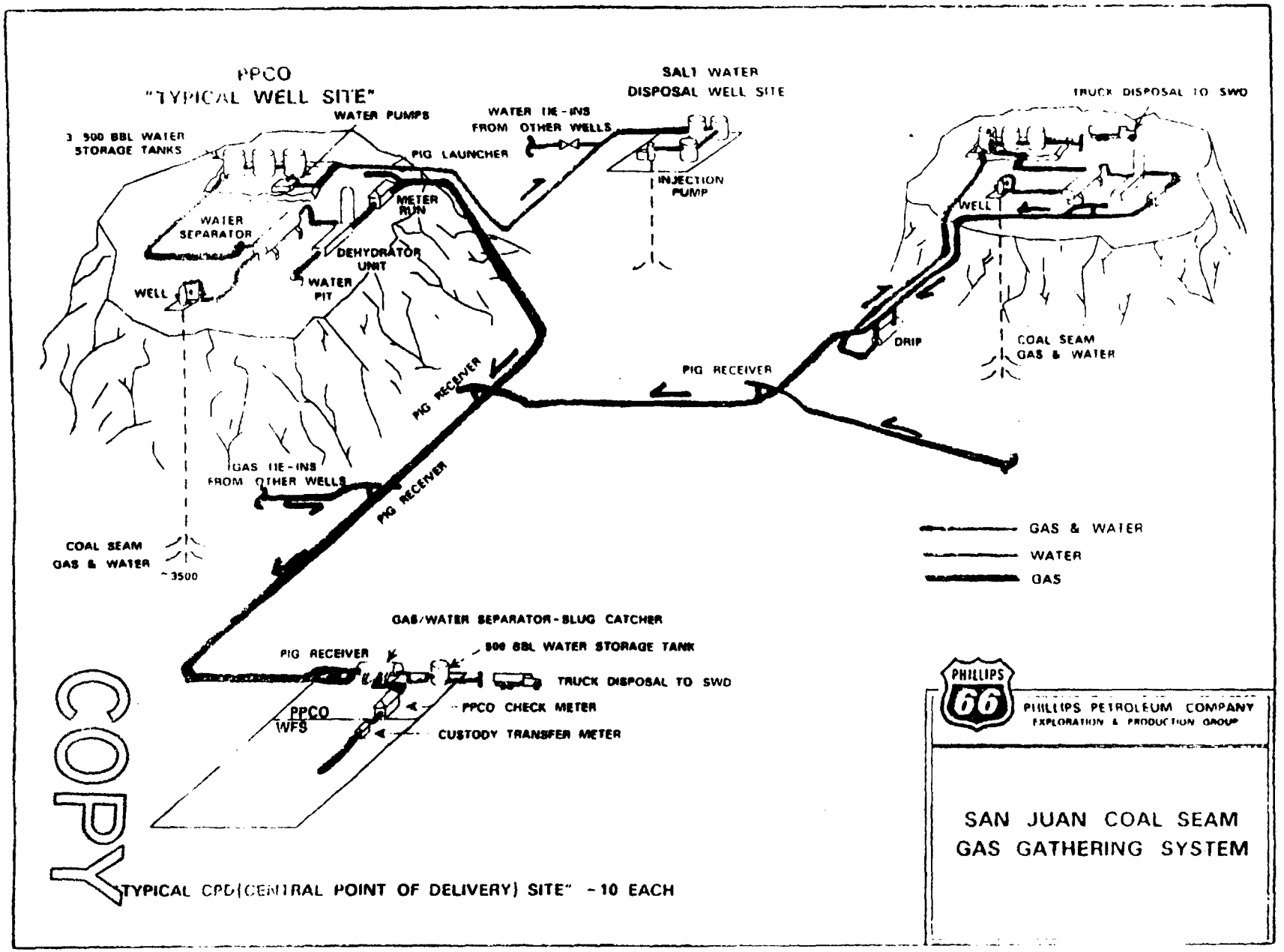
MAR 23 1995

DISTRICT MANAGER

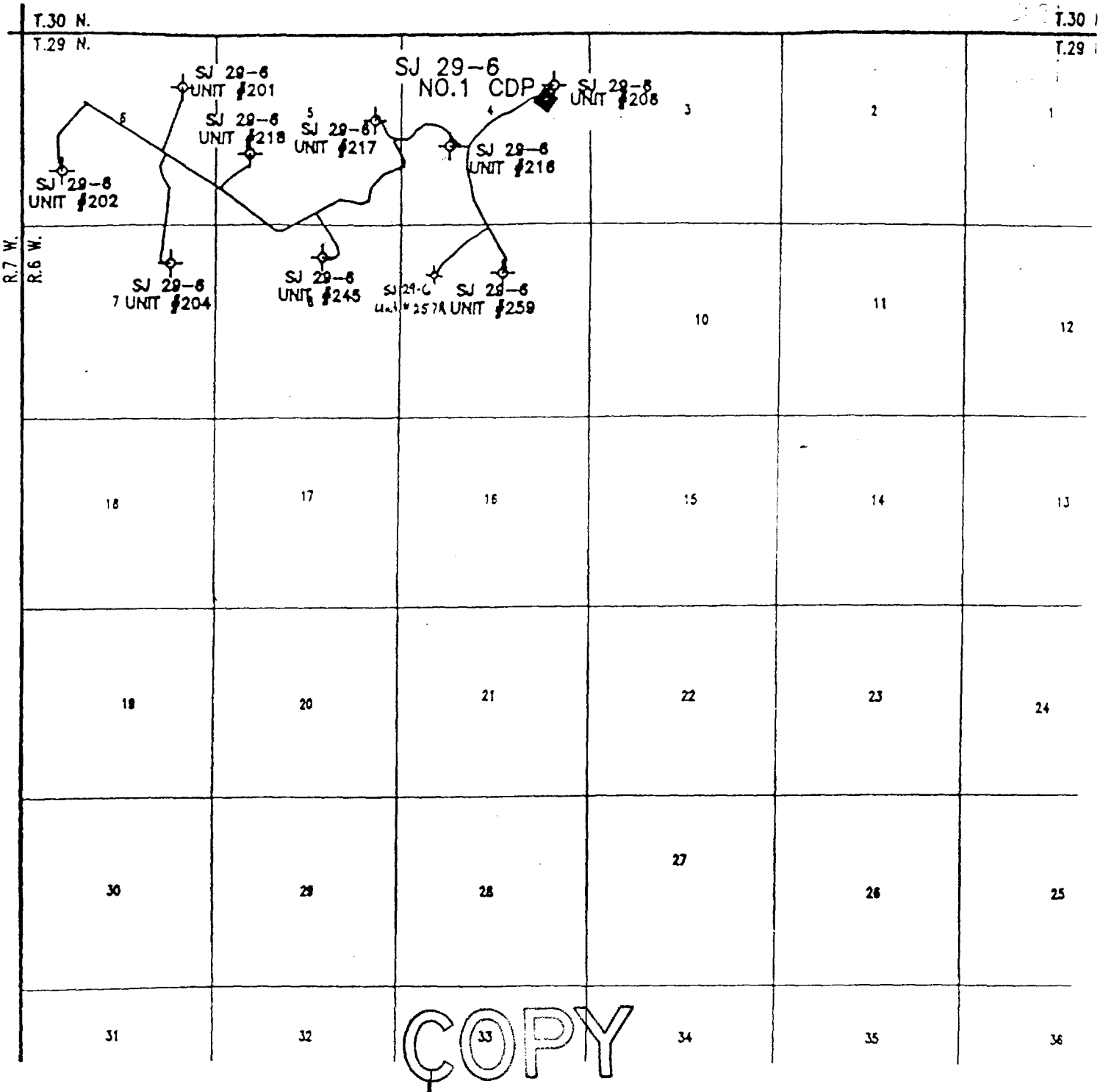
OPERATOR

Off Lease Measurement/Commingling Application

Contents:


PPCO
"TYPICAL WELL SITE"
WATER PUMPS
3 500 BBL WATER STORAGE TANKS
WATER TIE-INS FROM OTHER WELLS
PIG LAUNCHER
METER RUN
WATER SEPARATOR
DEHYDRATOR UNIT
WELL
WATER PIT
SALT WATER DISPOSAL WELL SITE
INJECTION PUMP
TRUCK DISPOSAL TO SWD
WELL
DRIP
COAL SEAM GAS & WATER
PIG RECEIVER
PIG RECEIVER
GAS TIE-INS FROM OTHER WELLS
PIG RECEIVER
COAL SEAM GAS & WATER
~3500
GAS & WATER
WATER
GAS
GAS/WATER SEPARATOR - SLUG CATCHER
PIG RECEIVER
500 BBL WATER STORAGE TANK
TRUCK DISPOSAL TO SWD
PPCO
WFS
PPCO CHECK METER
CUSTODY TRANSFER METER
"TYPICAL CPD(CENTRAL POINT OF DELIVERY) SITE" - 10 EACH
PHILLIPS 66
PHILLIPS PETROLEUM COMPANY
EXPLORATION & PRODUCTION GROUP
SAN JUAN COAL SEAM
GAS GATHERING SYSTEM

S.J. 29-6 No.1 C.D.P. GATHERING
T.29 N., R.6 W., N.M.P.M.,
RIO ARRIBA COUNTY, NEW MEXICO



Daggett, Inc.
420 West Elm Street
FARMINGTON, NEW MEXICO 8740
(505) 326-1772
REGISTERED LAND SURVEYOR
NEW MEXICO No.8894

DATE: 5/13/94 DWG. REF. No. 296NO1M6

PHILLIPS PETROLEUM COMPANY
FARMINGTON AREA

	UNIT	CPD LOCATION SEC	TWN	RNG	Q/Q	WELL #	CONNECT DATE	LEASE OR AGREEMENT NUMBER	CPD OWNER
	CPD #1 29-6	4	29N	6W	S / NE		04/07/93		WILLIAMS FIELD SERVICE
**	S. J. 29-6	6	29	6	SE/NE	201		891000439D	
	S. J. 29-6	6	29	6	NW/SW	202	08/10/93	891000439D	
	S. J. 29-6	7	29	6	NE/NE	204	07/28/93	891000439D	
	S. J. 29-6	4	29	6	SE/NE	206	04/07/93	891000439D	
	S. J. 29-6	4	29	6	NE/SW	216	04/07/93	891000439D	
	S. J. 29-6	5	29	6	SE/NE	217	04/07/93	891000439D	
**	S. J. 29-6	5	29	6	NE/SW	218		891000439D	
**	S. J. 29-6	8	29	6	NW/NE	245		891000439D	
	S. J. 29-6	9	29	6	SW/NW	257 R	12/15/94	SF080377	
	S. J. 29-6	9	29	6	NW/NE	259	07/02/93	891000439X	

** INDICATES WELLS THAT HAVE NOT PRODUCED THROUGH CPD BUT COULD AT LATER DATE.

Description of System

Fruitland Coal wells, operated by Phillips Petroleum, are tied into a Phillips gathering system. The gathering system delivers gas to the Central Point of Delivery (CPD) which is operated by Williams Field Service (WFS). The CPD is the point of interconnection on WFS's Manzanares System where WFS receives Phillips Petroleum's gas for gathering. (See Attached Map)

Each of the wells are equipped with a separator, a dehydrator and an electronic flow gas meter. Some wells may also have a small compressor on location. The gas is produced through the separator to remove excess water. The water is stored in water storage tanks on location prior to disposal. The gas is further dried by the dehydrator prior to measurement. Fuel gas required to operate the well equipment (separator, dehydrator, compressors and tank heaters) is taken from the dehydrator prior to measurement. The gas leaving the well location is measured through Phillips Petroleum's electronic flow meter.

After the gas is measured at the individual well locations, the combined gas enters the gathering system which is operated by Phillips Petroleum. The gathering system delivers the gas to the CPD.

At the CPD, the gas enters a gas/water separator which separates any free water that drops out in the pipeline. Since all the gas flows through dehydrators on individual well locations prior to entering the gathering system, this water volume is normally negligible. The gas then goes through Phillips Petroleum's check meter (electronic flow meter) and directly through WFS's CPD meter. Williams compresses the gas downstream of the CPD meter. No gas is removed for fuel between Phillips Petroleum's allocation gas meters on the individual wells and the CPD meter.

Mechanical Integrity

All lines downstream of the meter runs on the individual well locations to the CPDs have been pressure tested with either water or nitrogen.

Equipment Specifications

A sheet is attached that lists the size and make of all fuel burning equipment on each well location. A separate sheet details the burner size for each type of equipment. The equipment list is subject to change as operational needs vary over time. Equipment changes will be reflected in our fuel gas calculations.

PHILLIPS PETROLEUM COMPANY

WELL NUMBER	PROD SEP MFG	SIZE	DEHY MFG	SIZE	TANK #1 MFG	TANK #2 MFG	TANK #3 MFG	RENTAL COMP. HP
CPD # 1 29-6								
29-6 #201 039-24597	P & A	6 MM	P&A	6 MM	WESTERN	WESTERN		
29-6 #202 24899	PESCO	2 MM	PESCO	2 MM	PERMIAN	PERMIAN	PERMIAN	
29-6 #204 24822	PESCO	2 MM	PESCO	2 MM	PERMIAN	PERMIAN	PERMIAN	
29-6 #206 24521	P & A	2 MM	P & A	2 MM	WESTERN	WESTERN		
29-6 #216 24607	PESCO	2 MM	PESCO	2 MM	PERMIAN	PERMIAN		
	P & A	2 MM	P & A	2 MM				
29-6 #217 24794	PESCO	6 MM	PESCO	6 MM	PERMIAN	PERMIAN		
29-6 #218 24746	PESCO	6 MM	PESCO	6 MM	PERMIAN	PERMIAN	PERMIAN	
29-6 #245 24910	P & A	4 MM	P & A	4 MM	PALMER	PALMER	PALMER	
29-6 #259 24763	P & A	2 MM	P & A	2 MM	PALMER	PALMER	PALMER	
29-6 #257 R 25456	PESCO	4 MM	PESCO	4 MM	PESCO			

BURNER SIZES

	Size (MMCF/D)	Manufacturer	Burner Size (BTU/HR)
Separators			
	2	P&A	250,000
	2	Pesco	250,000
	2	Enertek	250,000
	4	P&A	400,000
	4	Pesco	400,000
	4	Enertek	400,000
	4	American Tank	400,000
	6	P&A	450,000
	6	Pesco	450,000
Dehydrators			
	2	P&A	150,000
	2	Pesco	125,000
	4	P&A	250,000
	4	Pesco	125,000
	4	Enertek	250,000
	6	P&A	350,000
	6	Pesco	200,000
Tank Heaters			
	N/A	All	350,000

ALLOCATION DETAILS

Basically, the gas sales volume (mcf) will be allocated on a volume basis and the gas sales MMBTUs will be allocated on an MMBTU basis.

The gas sales volume (mcf) from an individual well is determined by first calculating a ratio by dividing its metered volume (mcf) by the sum of the metered volumes (mcf) of all wells connected to the CPD. This ratio is then multiplied by the total CPD volume (mcf). The gas production volume for an individual well is determined by adding the well's estimated fuel gas volume and the "Flared or Vented" gas volume to the well's allocated sales volume.

The fuel gas volumes are based upon the type and size of equipment on each well location and the number of producing days for each well. The fuel gas usage for the equipment was detailed in Phillips Petroleum's August 17, 1994 letter addressed to Mr. Mike Pool (attached).

The MMBTUs assigned to an individual well is determined by first calculating a ratio by dividing its metered MMBTUs by the sum of the metered MMBTUs of all wells connected to the CPD. This ratio is then multiplied by the total CPD MMBTUs. The individual well BTU value (MMBTU/mcf) will be calculated by dividing the allocated MMBTUs by the allocated volume (mcf).

If a section of line is blown down, the calculated volume of blowdown gas will be allocated to the affected wells. This allocated blowdown volume will be reported as "Flared or Vented" gas.

Since all the gas flows through dehydrators on individual well locations prior to entering the gathering system, water volumes at the CPD are normally negligible. If these water volumes become significant, they will be allocated to the wells.

Allocation examples using actual data for the months October, November and December, 1994 are attached.

PHILLIPS PETROLEUM COMPANY
FARMINGTON, NEW MEXICO 87401
5525 HWY 64 NBU 3004

August 17, 1994

Bureau of Land Management
1235 La Plata Hwy.
Farmington, NM 87041
Attn: Mike Pool

Gas Used on Lease As Reported
On Form MMS-3160 (Monthly
Report of Operations)

Dear Mr. Pool:

It has been brought to our attention that there are volume discrepancies between gas used on lease as reported by Phillips Petroleum Company on Form MMS-3160 and gas used on lease as calculated by Mike Wade of your office. This was found during the recent Production Accountability Inspections conducted by Mike Wade. The most notable volume discrepancy is the gas used by water tank heaters on our coal seam wells. We have not been calculating or reporting any gas used on lease volumes for these tank heaters.

I am proposing that effective with August 1994 production, Phillips Petroleum Company report gas used on lease based on the attached table for all leases that we operate in the area that your office administers. I would also like to recommend for your approval that we not be required to make retroactive corrections prior to August 1994 for gas used on lease as reported on the Form MMS-3160. The reasoning behind this request is the manpower involved for both Phillips Petroleum Company and the federal agencies to process these corrections, the relatively small gas volumes as compared to the produced volumes, and the fact that volumes are not royalty bearing.

Please let me know your decision concerning this as early as possible to allow our Production Accounting personnel time to make adjustments prior to August's production reports. My phone number is 599-3460 if you would like to discuss.

Sincerely,

PHILLIPS PETROLEUM COMPANY

Ed Hasely
Environmental/Regulatory Engineer

cc: J. W. Taylor
E. D. Pruden

kch\mms3160.gas

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FUEL USE EQUIPMENT

(All factors at 15.025 Pressure Base)

SEPARATORS	≤ 2 MM	-	4.3	mcf/producing day
	4 MM	-	6.9	mcf/producing day
	6 MM	-	7.7	mcf/producing day
DEHYDRATORS	≤ 2 MM	-	2.4	mcf/producing day
	4 MM	-	3.2	mcf/producing day
	6 MM	-	4.7	mcf/producing day
	10 MM	-	6.0	mcf/producing day
TANK HEATERS		-	1.8	mcf/producing day/tank

Note: Anticipate tank heaters to operate from November through March, but this may vary year to year.

COMPRESSORS	50 HP	-	8	mcf/producing day
	80 HP	-	13	mcf/producing day
	100 HP	-	16	mcf/producing day
	120 HP	-	19	mcf/producing day
	165 HP	-	26	mcf/producing day

BLOWDOWN GAS

Fruitland Sand & Mesaverde - 0.7 mcf/minute of blowdown

Dakota - 1.0 mcf/minute of blowdown

Monthly Production

Sheets are attached that show the estimated 1995 production for each of the wells connected to the CPD. The allocation examples show the BTU content of the gas from the individual wells, as well as the BTU content of the combined gas at the CPD. Since all the gas is produced from wells completed in the same formation and in the same general area, the BTU content of the gas does not vary substantially.

Evidence on Federal Royalties

Gas volumes and MMBTU quantities are allocated to the wells from the CPD because the most accurate volumes and MMBTU quantities available are from the CPD. The reasons for this, such as measurement errors, stable flow rates, BTU content, etc., have been discussed on numerous occasions. The inherently greater accuracy of the CPD volume, as compared to the sum of the individual well metered volumes, warrants the acceptance of the CPD volume as representative of the total sales volume from the individual wells. It is then necessary only to reduce the total sales volume to its individual components through the proposed allocation method.

Sheets are attached (Allocation Examples) that compare the allocated sales volume with the metered volume for the months October, November and December, 1994. The results vary well by well, month by month, and CPD by CPD, but overall the volumes are extremely close. At the 29-6 #1 CPD, the sum of the allocate MMBTUs were 3.2% lower than sums of the individual well's metered MMBTUs for these three months.

Economic Justification

The CPD system utilizing off-lease gas measurement will extend the economic life of all affected wells due to the reduction of back pressure on the wells. Without the system, the gas would have been produced into a conventional gas pipeline operated at a substantially higher pressure. The higher pipeline pressure would decrease the recoverable reserves from each well or force Phillips to install compressors on each well location. Either scenario will reduce the economic life of the wells.

COPY

ALLOCATION EXAMPLE

.WK3

29-6 #1, CPD DECEMBER, 1994

08-Feb-95

UNIT	WELL #	METERED GAS VOLUME (mcf)	VOLUME RATIO	ALLOCATED GAS VOLUME (mcf)	MEASURED WELL BTU VALUE	METERED MMBTU's	MMBTU RATIO	ALLOCATED MMBTU	ALLOCATED WELL BTU VALUE		VOLUME DIFFERENCE (%)	MMBTU DIFFERENCE (%)	WELL BTU VALUE DIFFERENCE (%)
-6 #1 CPD	CPD	573,399			0.896	513,766							
J. 29-6	201	0	0	0	0	0	0	0					
J. 29-6	202	70,301	0.1141125	65,432	0.891	62,663	0.114363	58,756	0.898		-6.93%	-6.24%	0.74%
J. 29-6	204	61,370	0.0996152	57,119	0.896	55,016	0.100407	51,586	0.903		-6.93%	-6.24%	0.74%
J. 29-6	206	98,045	0.1591459	91,254	0.894	87,693	0.160044	82,225	0.901		-6.93%	-6.24%	0.74%
J. 29-6	216	75,815	0.1230616	70,563	0.910	68,974	0.12588	64,673	0.917		-6.93%	-6.24%	0.74%
J. 29-6	217	264,940	0.4300483	246,589	0.900	238,322	0.43495	223,462	0.906		-6.93%	-6.24%	0.74%
J. 29-6	218	0	0	0	0.000	0	0	0					
J. 29-6	245	0	0	0	0.000	0	0	0					
J. 29-6	257R	6,839	0.0111015	6,366	0.000	0	0	0					
J. 29-6	259	38,760	0.062915	36,075	0.910	35,263	0.064356	33,064	0.917		-6.93%	-6.24%	0.74%
TOTAL		616,070	1	573,399		547,930	1	513,766			-6.93%	-6.24%	

All volumes and BTU values assume a 14.73 Pressure Base.

ALLOCATION EXAMPLE

29-6 #1 CPD NOVEMBER, 1994

08-Feb-95

UNIT	WELL #	METERED GAS VOLUME (mcf)	VOLUME RATIO	ALLOCATED GAS VOLUME (mcf)	MEASURED WELL BTU VALUE	METERED MMBTU's	MMBTU RATIO	ALLOCATED MMBTU	ALLOCATED WELL BTU VALUE		VOLUME DIFFERENCE (%)	MMBTU DIFFERENCE (%)	WELL BTU VALUE DIFFERENCE (%)
#1 CPD	CPD	442,050			0.893	394,751							
29-6	201	0	0	0	0	0	0	0					
29-6	202	64,020	0.1378198	60,923	0.862	55,164	0.136513	53,889	0.885		-4.84%	-2.31%	2.65%
29-6	204	57,649	0.1241044	54,860	0.874	50,382	0.124679	49,217	0.897		-4.84%	-2.31%	2.65%
29-6	206	90,319	0.1944361	85,950	0.858	77,456	0.191677	75,665	0.880		-4.84%	-2.31%	2.65%
29-6	216	65,644	0.1413156	62,469	0.877	57,571	0.142469	56,240	0.900		-4.84%	-2.31%	2.65%
29-6	217	153,184	0.329768	145,774	0.875	134,031	0.331684	130,932	0.898		-4.84%	-2.31%	2.65%
29-6	218	0	0	0	0.000	0	0	0					
29-6	245	0	0	0	0.000	0	0	0					
29-6	257R	0	0	0	0.000	0	0	0					
29-6	259	33,704	0.0725562	32,073	0.875	29,490	0.072978	28,808	0.898		-4.84%	-2.31%	2.65%
TOTAL		464,519	1	442,050		404,094	1	394,751			-4.84%	-2.31%	

olumes and BTU values assume a 14.73 Pressure Base.

ALLOCATION EXAMPLE

29-6 #1 CPD OCTOBER, 1994

07-Feb-95

UNIT	WELL #	METERED GAS VOLUME (mcf)	VOLUME RATIO	ALLOCATED GAS VOLUME (mcf)	MEASURED WELL BTU VALUE	METERED MMBTU's	MMBTU RATIO	ALLOCATED MMBTU	ALLOCATED WELL BTU VALUE		VOLUME DIFFERENCE (%)	MMBTU DIFFERENCE (%)	WELL BTU VALUE DIFFERENCE (%)
6 #1 CPD	CPD	465,818			0.893	415,975							
29-6	201	0	0	0	0	0	0	0					
29-6	202	67,890	0.1418025	66,054	0.862	58,499	0.140499	58,444	0.885		-2.70%	-0.09%	2.68%
29-6	204	60,251	0.1258469	58,622	0.874	52,656	0.126467	52,607	0.897		-2.70%	-0.09%	2.68%
29-6	206	99,544	0.2079197	96,853	0.858	85,367	0.20503	85,287	0.881		-2.70%	-0.09%	2.68%
29-6	216	75,688	0.1580905	73,641	0.877	66,380	0.159428	66,318	0.901		-2.70%	-0.09%	2.68%
29-6	217	141,379	0.2952996	137,556	0.875	123,703	0.297102	123,587	0.898		-2.70%	-0.09%	2.68%
29-6	218	0	0	0	0.000	0	0	0					
29-6	245	0	0	0	0.000	0	0	0					
29-6	257R	0	0	0	0.000	0	0	0					
29-6	259	34,012	0.0710408	33,092	0.875	29,759	0.071474	29,732	0.898		-2.70%	-0.09%	2.68%
TOTAL		478,764	1	465,818		416,364	1	415,975			-2.70%	-0.09%	

olumes and BTU values assume a 14.73 Pressure Base.

1995 PROJECTED CPD VOLUMES

cpd95pjt.wk3

CPD NUMBER	UNIT	WELL	YEARLY MMCF	CPD TOTAL
29-6 #1 CPD				
	S.J. 29-6	201	1,460	
	S.J. 29-6	202	1,369	
	S.J. 29-6	204	949	
	S.J. 29-6	206	876	
	S.J. 29-6	216	757	
	S.J. 29-6	217	2,008	
	S.J. 29-6	218	949	
	S.J. 29-6	245	1,022	
	S.J. 29-6	257 R	912	
	S.J. 29-6	259	438	
		TOTAL		10,740

PHILLIPS PETROLEUM COMPANY
FARMINGTON AREA

UNIT	WELL #	PIPELINE WATER	TRUCKED WATER	SWD LOCATION
CPD #1 29-6				
S. J. 29-6	201	X		29-6 SWD
S. J. 29-6	202	X		29-6 SWD
S. J. 29-6	204	X		29-6 SWD
S. J. 29-6	206	X		29-6 SWD
S. J. 29-6	216	X		29-6 SWD
S. J. 29-6	217	X		29-6 SWD
S. J. 29-6	218	X		29-6 SWD
S. J. 29-6	245	X		29-6 SWD
S. J. 29-6	259	X		29-6 SWD
S. J. 29-6	257 R		X	29-6 SWD

October 19, 1994

PHILLIPS PETROLEUM COMPANY
San Juan Basin, New Mexico
Off-Lease Measurement of Gas Applications

STATEMENT: The allocation meters are calibrated and gas samples are collected in accordance with Onshore Oil and Gas Order No. 5.

MECHANICAL INTEGRITY

All lines downstream of the meter runs on the individual well locations to the CPDs have been pressure tested with either water or nitrogen. The lines were pressured to 750 psi and held overnight.

Estimate of Blowdown Volume

Dakota Formation

Assumptions: Ideal Gas Law ($z = 1$)
$2\frac{3}{8}$" Tubing at 7200 ft
Pressure = 350 psig
Temperature = Constant 60°
Two Tubing Volumes for Blowdown
Average Blowdown = 8 minutes

$P_1 V_1 = P_{sc} V_{sc}$

$P_1 = 364$ psia

$P_{sc} = 14.7$ psia

$V_1 = 2(7200')(.0217\ ft^3/ft)$
$= 312\ ft^3$

$V_{sc} = \left(\frac{364}{14.7}\right)(312) = 7726\ ft^3 \approx 7.7$ MCF

7.7 MCF in 8 minutes $\approx$ **1 MCF/Min**

Dakota Formation = 1.0 MCF/Min

LEH

3/16/95

Estimate of Blowdown Volumes
Mesa Verde & Fruitland Sand Formations

Assumptions: Ideal Gas Law ($Z = 1$)
2 3/8" Tubing at 6000 ft.
Pressure: 300 psig
Temperature: Constant 60°
Two Tubing Volumes for Blowdown
Averge Blowdown: 8 minutes

$P_1 V_1 = P_{sc} V_{sc}$

$P_1 = 314$ psia

$P_{sc} = 14.7$ psia

$V_1 = 2(6000')(.0217\ ^{ft^3}/_{ft}) = 260\ ft^3$

$V_{sc} = \left(\frac{314}{14.7}\right)(260) = 5554\ ft^3 \approx 5.6$ MCF

5.6 MCF in 8 minutes = **0.7 MCF/Min**

Mesa Verde & Fruitland Sand = 0.7 MCF/Min

LEH
3/16/95

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

GARY E. JOHNSON
GOVERNOR

JENNIFER A. SALISBURY
CABINET SECRETARY

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178 FAX: (505) 334-6170

April 10, 1995

Mr Ed Hasely
Phillips Petroleum Company
5525 Hwy 64 NBU 3004
Farmington NM 87401

Re: 29-6 #1 CPD

Dear Mr. Hasely:

As per Rule 403.C. your application for the approval of the allocation method to be used at the referenced CPD is hereby approved.

Sincerely,

Frank T. Chavez, Supervisor District III

FTC/sh

PHILLIPS PETROLEUM COMPANY
FARMINGTON, NEW MEXICO 87401
5525 HWY. 64 NBU 3004

February 23, 1995

Bureau of Land Management
ATTN: Mr. Mike Pool
1235 La Plata Highway
Farmington, NM 87401

29-6 #2 CPD
Off-Lease Measurement of Gas

Dear Mr. Pool:

Phillips Petroleum Company requests approval for off-lease measurement/commingling of gas through the subject central point of delivery (CPD) located in Rio Arriba County, New Mexico. Our original request for approval was submitted on August 31, 1994. Due to additional information requests and changes in our proposal, a complete new application is being submitted.

The required information for this application is attached. Phillips is the only operator participating in this CPD which contains only Fruitland Coal wells. If additional wells are proposed to be added to the system, prior approval will be obtained.

If you have any questions or if additional information is required, please contact me at 599-3460.

Sincerely,

PHILLIPS PETROLEUM COMPANY

Ed Hasely
Environmental/Regulatory Engineer

attachments
cc: Frank Chavez - OCD Aztec, NM
J. W. Taylor

leh\296#2cpd.mea

APPROVED

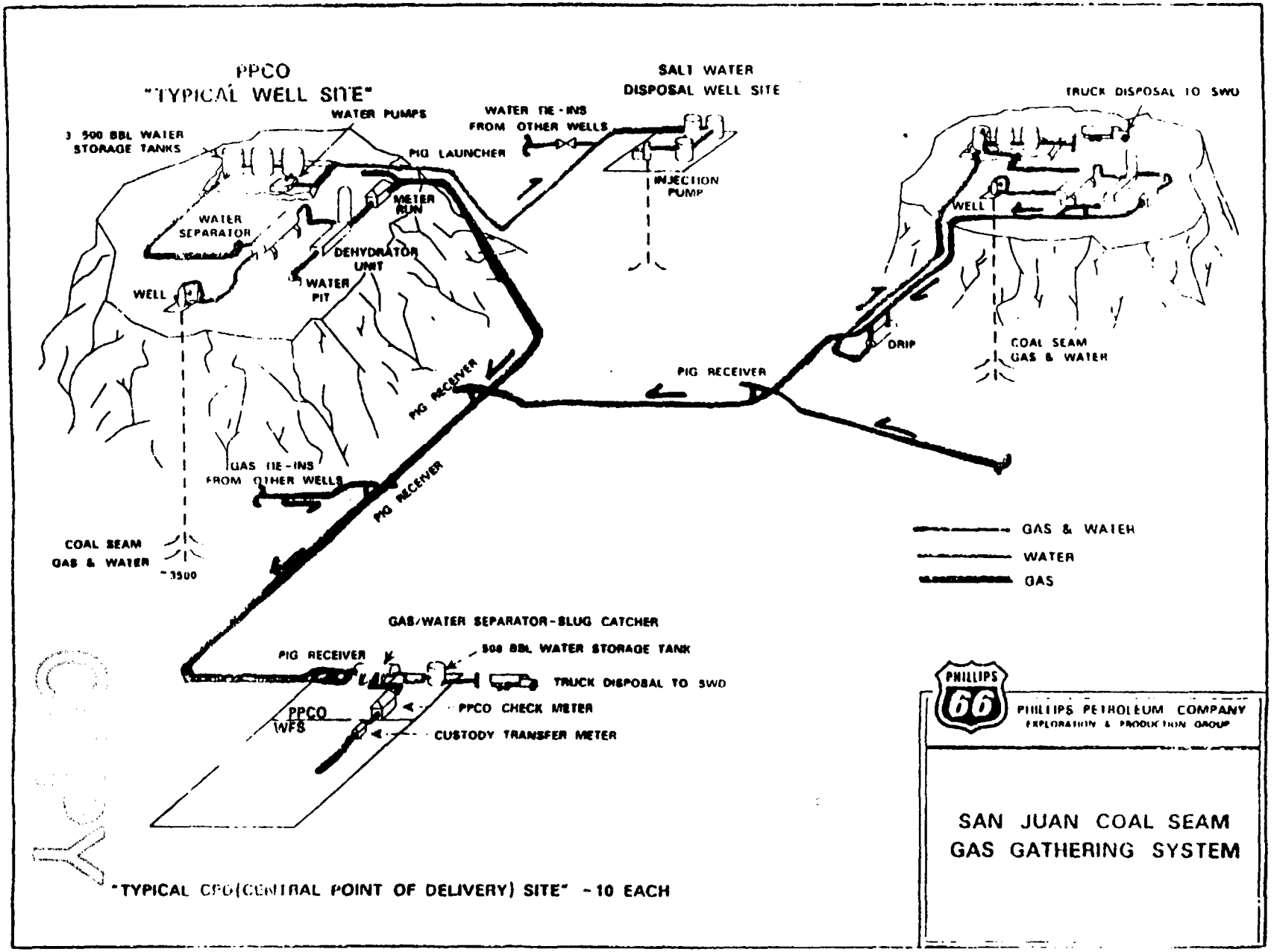
MAR 23 1995

DISTRICT MANAGER

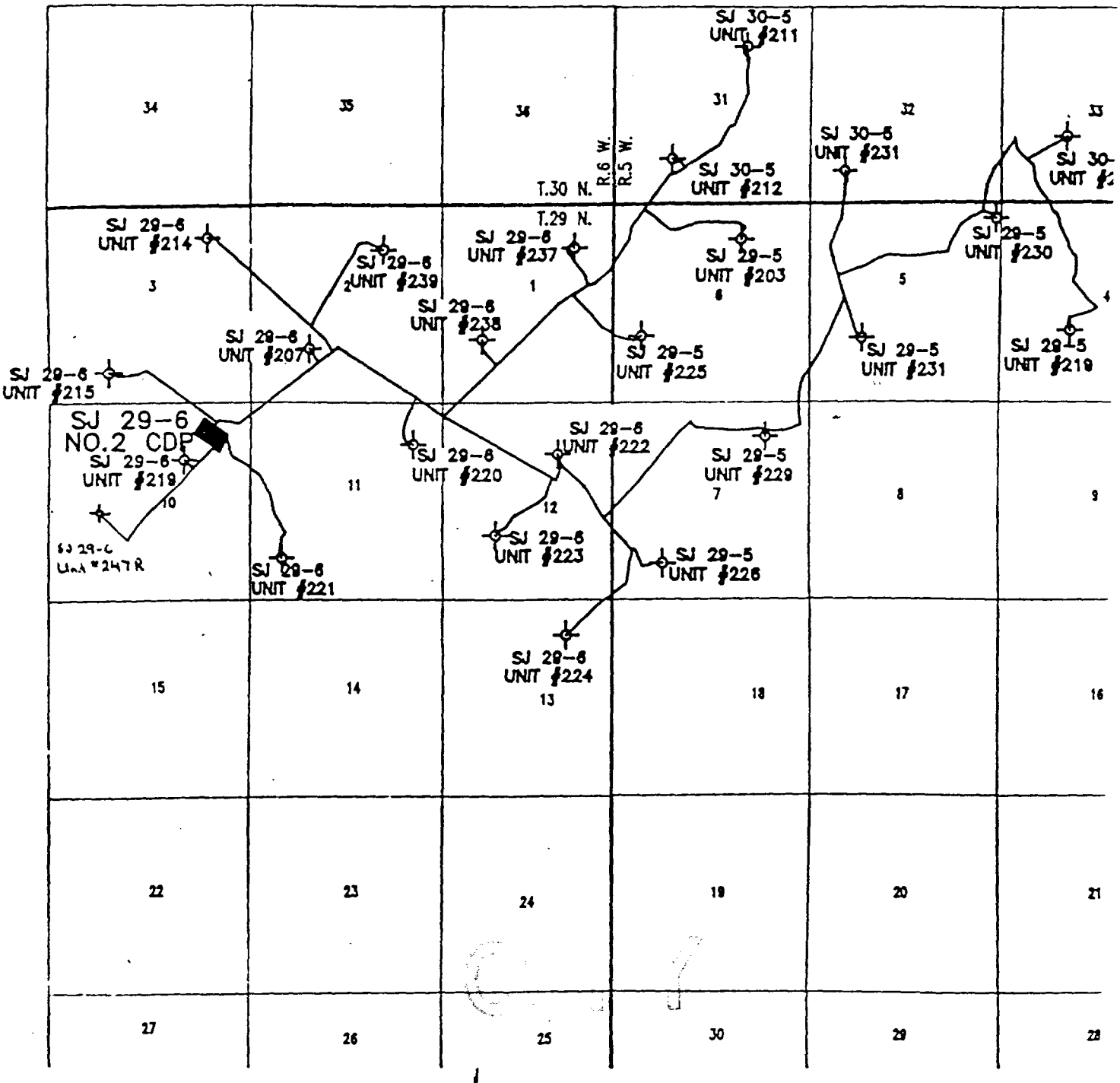
OPERATOR

Off Lease Measurement/Commingling Application

Contents:


PPCO
"TYPICAL WELL SITE"
WATER PUMPS
3 500 BBL WATER STORAGE TANKS
WATER TIE-INS FROM OTHER WELLS
PIG LAUNCHER
METER RUN
WATER SEPARATOR
DEHYDRATOR UNIT
WATER PIT
WELL
SALT WATER DISPOSAL WELL SITE
INJECTION PUMP
TRUCK DISPOSAL TO SWD
WELL
DRIP
COAL SEAM GAS & WATER
PIG RECEIVER
PIG RECEIVER
GAS TIE-INS FROM OTHER WELLS
PIG RECEIVER
COAL SEAM GAS & WATER
~3500
GAS & WATER
WATER
GAS
GAS/WATER SEPARATOR-SLUG CATCHER
PIG RECEIVER
500 BBL WATER STORAGE TANK
TRUCK DISPOSAL TO SWD
PPCO WFS
PPCO CHECK METER
CUSTODY TRANSFER METER
"TYPICAL CPD(CENTRAL POINT OF DELIVERY) SITE" - 10 EACH
PHILLIPS 66
PHILLIPS PETROLEUM COMPANY
EXPLORATION & PRODUCTION GROUP
SAN JUAN COAL SEAM
GAS GATHERING SYSTEM

PHILLIPS PETROLEUM CO.
S.J. 29-6 No.2 C.D.P. GATHERING
T.29 N., R.6 W., R.5 W.,N.M.P.M.,
T.30 N., R.5 W.,N.M.P.M.,
RIO ARRIBA COUNTY, NEW MEXICO



0 2000 4000
SCALE: 1"=4000'

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Daggett, Inc.
420 West Elm Street
FARMINGTON, NEW MEXICO 8740
(505) 326-1772
REGISTERED LAND SURVEYOR
NEW MEXICO No.8894

PHILLIPS PETROLEUM COMPANY
FARMINGTON AREA

UNIT	CPD LOCATION SEC	TWN	RNG	Q/Q	WELL #	CONNECT DATE	LEASE OR AGREEMENT NUMBER	CPD OWNER
CPD #2 29-6	10	29N	6W	N / NE		12/29/92		WILLIAMS FIELD SERVICE
S. J. 29-5	6	29	5	NW/NE	203	12/29/92	NMSF078410	24535
S. J. 29-5	10	29	6	SW/NE	219	05/25/93	NMSF081114	25081
S. J. 29-5	6	29	6	NW/SW	225	05/15/93	NMSF078305	25086
S. J. 29-5	7	29	5	SE/SW	226	04/14/93	891000437X	25076
S. J. 29-5	7	29	5	NE/NE	229	12/20/93	NMSF078277	25227
S. J. 29-5	5	29	5	NE/NE	230	05/24/93	NMSF078343	25226
S. J. 29-5	32	30	5	SW/SW	231	12/20/93	NMSF078642	25075
S. J. 29-6	2	29	6	NE/SW	207	12/29/92	891000439D	24516
S. J. 29-6	3	29	6	NE/NE	214	12/29/92	891000439D	24606
S. J. 29-6	3	29	6	SE/SW	215	12/29/92	891000439D	24726
S. J. 29-6	10	29	6	SW/NE	219	12/29/92	891000439D	24608
S. J. 29-6	11	29	6	NE/NE	220	12/29/92	891000439D	24690
S. J. 29-6	11	29	6	SW/SW	221	12/29/92	891000439D	24680
S. J. 29-6	12	29	6	SW/NE	222	12/29/92	891000439D	24758
S. J. 29-6	12	29	6	NE/SW	223	12/29/92	891000439D	24681
S. J. 29-6	13	29	6	NE/NE	224	04/16/93	891000439D	24759
S. J. 29-6	1	29	6	NE/NE	237	12/29/92	891000439D	24804
S. J. 29-6	1	29	6	NW/SW	238	12/29/92	891000439D	24805
S. J. 29-6	2	29	6	NW/NE	239	12/29/92	891000439D	24705
S. J. 29-6	10	29	6	NE/SW	247 R	12/30/94	SF078278	25414
S. J. 30-5	31	30	5	NW/NE	211	12/31/92	NMNM012331	24720
S. J. 30-5	31	30	5	SE/SW	212	12/29/92	NMNM012335	24721
S. J. 30-5	32	30	5	SW/SW	231	06/08/93	891000346X	24893
S. J. 30-5	33	30	5	NE/SW	233	05/25/93	NMSF078739	25195

Description of System

Fruitland Coal wells, operated by Phillips Petroleum, are tied into a Phillips gathering system. The gathering system delivers gas to the Central Point of Delivery (CPD) which is operated by Williams Field Service (WFS). The CPD is the point of interconnection on WFS's Manzanares System where WFS receives Phillips Petroleum's gas for gathering. (See Attached Map)

Each of the wells are equipped with a separator, a dehydrator and an electronic flow gas meter. Some wells may also have a small compressor on location. The gas is produced through the separator to remove excess water. The water is stored in water storage tanks on location prior to disposal. The gas is further dried by the dehydrator prior to measurement. Fuel gas required to operate the well equipment (separator, dehydrator, compressors and tank heaters) is taken from the dehydrator prior to measurement. The gas leaving the well location is measured through Phillips Petroleum's electronic flow meter.

After the gas is measured at the individual well locations, the combined gas enters the gathering system which is operated by Phillips Petroleum. The gathering system delivers the gas to the CPD.

At the CPD, the gas enters a gas/water separator which separates any free water that drops out in the pipeline. Since all the gas flows through dehydrators on individual well locations prior to entering the gathering system, this water volume is normally negligible. The gas then goes through Phillips Petroleum's check meter (electronic flow meter) and directly through WFS's CPD meter. Williams compresses the gas downstream of the CPD meter. No gas is removed for fuel between Phillips Petroleum's allocation gas meters on the individual wells and the CPD meter.

Mechanical Integrity

All lines downstream of the meter runs on the individual well locations to the CPDs have been pressure tested with either water or nitrogen.

Equipment Specifications

A sheet is attached that lists the size and make of all fuel burning equipment on each well location. A separate sheet details the burner size for each type of equipment. The equipment list is subject to change as operational needs vary over time. Equipment changes will be reflected in our fuel gas calculations.

PHILLIPS PETROLEUM COMPANY

WELL NUMBER	PROD SEP MFG	SIZE	DEHY MFG	SIZE	TANK #1 MFG	TANK #2 MFG	TANK #3 MFG	RENTAL COMP. HP
CPD # 2 29-6								
29-5 #203	P & A	2 MM	P & A	2 MM	WESTERN	WESTERN		
29-5 #219	PESCO	2 MM	PESCO	2 MM	PERMIAN	PERMIAN		100
29-5 #225	P & A	2 MM	P & A	2 MM	PESCO	PESCO		
29-5 #226	PESCO	2 MM	PESCO	2 MM	PERMIAN	PERMIAN		
29-5 #229	PESCO	2 MM	PESCO	2 MM	PERMIAN	PERMIAN		
29-5 #230	P & A	2 MM	P & A	2 MM	PERMIAN	PERMIAN		
29-5 #231	PESCO	2 MM	PESCO	2 MM	PERMIAN	PESCO		
29-6 #207	P & A	6 MM	P & A	6 MM	WESTERN	WESTERM		
29-6 #214	PESCO	6 MM	PESCO	6 MM	WESTERN	WESTERN	WESTERN	
	PESCO	4 MM	PESCO	4 MM				
29-6 #215	PESCO	2 MM	PESCO	2 MM	PERMIAN	PERMIAN		
29-6 #219	PESCO	4 MM	PESCO	4 MM	WESTERN	WESTERN		
29-6 #220	PESCO	2 MM	PESCO	2 MM	PERMIAN	PERMIAN		
29-6 #221	PESCO	2 MM	PESCO	2 MM	PERMIAN	PERMIAN		
	P & A	2 MM	P & A	2 MM				
29-6 #222	P & A	4 MM	P & A	4 MM	PALMER	PALMER		
29-6 #223	PESCO	6 MM	PESCO	6 MM	PERMIAN	PERMIAN	PERMIAN	
29-6 #224	P & A	2 MM	P & A	2 MM	PALMER	PALMER		
	P & A	2 MM	P & A	2 MM				
29-6 #237	P & A	2 MM	P & A	2 MM	PALMER	PALMER		
29-6 #238	P & A	2 MM	P & A	2 MM	PALMER	PALMER		
29-6 #239	P & A	2 MM	P & A	2 MM	PALMER	PALMER		
30-5 #211	PESCO	6 MM	PESCO	6 MM	PERMIAN	PERMIAN	PERMIAN	
30-5 #212	PESCO	2 MM	PESCO	2 MM	PERMIAN	PERMIAN		
30-5 #231	PESCO	2 MM	PESCO	2 MM	PESCO	PESCO	PERMIAN	
30-5 #233	P & A	2 MM	P & A	2 MM	PERMIAN	PERMIAN		80
29-6 #247 R	PESCO	2 MM	P & A	2 MM	PESCO	PESCO		

BURNER SIZES

	Size (MMCF/D)	Manufacturer	Burner Size (BTU/HR)
Separators			
	2	P&A	250,000
	2	Pesco	250,000
	2	Enertek	250,000
	4	P&A	400,000
	4	Pesco	400,000
	4	Enertek	400,000
	4	American Tank	400,000
	6	P&A	450,000
	6	Pesco	450,000
Dehydrators			
	2	P&A	150,000
	2	Pesco	125,000
	4	P&A	250,000
	4	Pesco	125,000
	4	Enertek	250,000
	6	P&A	350,000
	6	Pesco	200,000
Tank Heaters			
	N/A	All	350,000

ALLOCATION DETAILS

Basically, the gas sales volume (mcf) will be allocated on a volume basis and the gas sales MMBTUs will be allocated on an MMBTU basis.

The gas sales volume (mcf) from an individual well is determined by first calculating a ratio by dividing its metered volume (mcf) by the sum of the metered volumes (mcf) of all wells connected to the CPD. This ratio is then multiplied by the total CPD volume (mcf). The gas production volume for an individual well is determined by adding the well's estimated fuel gas volume and the "Flared or Vented" gas volume to the well's allocated sales volume.

The fuel gas volumes are based upon the type and size of equipment on each well location and the number of producing days for each well. The fuel gas usage for the equipment was detailed in Phillips Petroleum's August 17, 1994 letter addressed to Mr. Mike Pool (attached).

The MMBTUs assigned to an individual well is determined by first calculating a ratio by dividing its metered MMBTUs by the sum of the metered MMBTUs of all wells connected to the CPD. This ratio is then multiplied by the total CPD MMBTUs. The individual well BTU value (MMBTU/mcf) will be calculated by dividing the allocated MMBTUs by the allocated volume (mcf).

If a section of line is blown down, the calculated volume of blowdown gas will be allocated to the affected wells. This allocated blowdown volume will be reported as "Flared or Vented" gas.

Since all the gas flows through dehydrators on individual well locations prior to entering the gathering system, water volumes at the CPD are normally negligible. If these water volumes become significant, they will be allocated to the wells.

Allocation examples using actual data for the months October, November and December, 1994 are attached.

PHILLIPS PETROLEUM COMPANY
FARMINGTON, NEW MEXICO 87401
5525 HWY 64 NBU 3004

August 17, 1994

Bureau of Land Management
1235 La Plata Hwy.
Farmington, NM 87041
Attn: Mike Pool

Gas Used on Lease As Reported
On Form MMS-3160 (Monthly
Report of Operations)

Dear Mr. Pool:

It has been brought to our attention that there are volume discrepancies between gas used on lease as reported by Phillips Petroleum Company on Form MMS-3160 and gas used on lease as calculated by Mike Wade of your office. This was found during the recent Production Accountability Inspections conducted by Mike Wade. The most notable volume discrepancy is the gas used by water tank heaters on our coal seam wells. We have not been calculating or reporting any gas used on lease volumes for these tank heaters.

I am proposing that effective with August 1994 production, Phillips Petroleum Company report gas used on lease based on the attached table for all leases that we operate in the area that your office administers. I would also like to recommend for your approval that we not be required to make retroactive corrections prior to August 1994 for gas used on lease as reported on the Form MMS-3160. The reasoning behind this request is the manpower involved for both Phillips Petroleum Company and the federal agencies to process these corrections, the relatively small gas volumes as compared to the produced volumes, and the fact that volumes are not royalty bearing.

Please let me know your decision concerning this as early as possible to allow our Production Accounting personnel time to make adjustments prior to August's production reports. My phone number is 599-3460 if you would like to discuss.

Sincerely,

PHILLIPS PETROLEUM COMPANY

Ed Hasely
Environmental/Regulatory Engineer

cc: J. W. Taylor
E. D. Pruden

lch\mms3160.gas

FUEL USE EQUIPMENT

(All factors at 15.025 Pressure Base)

SEPARATORS	≤ 2 MM	-	4.3	mcf/producing day
	4 MM	-	6.9	mcf/producing day
	6 MM	-	7.7	mcf/producing day
DEHYDRATORS	≤ 2 MM	-	2.4	mcf/producing day
	4 MM	-	3.2	mcf/producing day
	6 MM	-	4.7	mcf/producing day
	10 MM	-	6.0	mcf/producing day
TANK HEATERS		-	1.8	mcf/producing day/tank

Note: Anticipate tank heaters to operate from November through March, but this may vary year to year.

COMPRESSORS	50 HP	-	8	mcf/producing day
	80 HP	-	13	mcf/producing day
	100 HP	-	16	mcf/producing day
	120 HP	-	19	mcf/producing day
	165 HP	-	26	mcf/producing day

BLOWDOWN GAS

Fruitland Sand & Mesaverde - 0.7 mcf/minute of blowdown

Dakota - 1.0 mcf/minute of blowdown

Monthly Production

Sheets are attached that show the estimated 1995 production for each of the wells connected to the CPD. The allocation examples show the BTU content of the gas from the individual wells, as well as the BTU content of the combined gas at the CPD. Since all the gas is produced from wells completed in the same formation and in the same general area, the BTU content of the gas does not vary substantially.

Evidence on Federal Royalties

Gas volumes and MMBTU quantities are allocated to the wells from the CPD because the most accurate volumes and MMBTU quantities available are from the CPD. The reasons for this, such as measurement errors, stable flow rates, BTU content, etc., have been discussed on numerous occasions. The inherently greater accuracy of the CPD volume, as compared to the sum of the individual well metered volumes, warrants the acceptance of the CPD volume as representative of the total sales volume from the individual wells. It is then necessary only to reduce the total sales volume to its individual components through the proposed allocation method.

Sheets are attached (Allocation Examples) that compare the allocated sales volume with the metered volume for the months October, November and December, 1994. The results vary well by well, month by month, and CPD by CPD, but overall the volumes are extremely close. At the 29-6 #2 CPD, the sum of the allocated MMBTUs were 2.9% higher than sums of the individual well's metered MMBTUs for these three months. This computes to higher overall royalties by following the described off-lease measurement practice.

Economic Justification

The CPD system utilizing off-lease gas measurement will extend the economic life of all affected wells due to the reduction of back pressure on the wells. Without the system, the gas would have been produced into a conventional gas pipeline operated at a substantially higher pressure. The higher pipeline pressure would decrease the recoverable reserves from each well or force Phillips to install compressors on each well location. Either scenario will reduce the economic life of the wells.

1995 PROJECTED CPD VOLUMES

cpd95pjt.wk3

CPD NUMBER	UNIT	WELL	YEARLY MMCF	CPD TOTAL
29-6 #2 CPD	S.J. 29-5	203	913	
	S.J. 29-5	219	164	
	S.J. 29-5	225	365	
	S.J. 29-5	226	730	
	S.J. 29-5	229	0	
	S.J. 29-5	230	438	
	S.J. 29-5	231	9	
	S.J. 29-6	207	2,008	
	S.J. 29-6	214	2,555	
	S.J. 29-6	215	584	
	S.J. 29-6	219	1,059	
	S.J. 29-6	220	548	
	S.J. 29-6	221	694	
	S.J. 29-6	222	784	
	S.J. 29-6	223	1,241	
	S.J. 29-6	224	730	
	S.J. 29-6	237	485	
	S.J. 29-6	238	438	
	S.J. 29-6	239	475	
	S.J. 29-6	247 R	547	
	S.J. 30-5	211	1,643	
	S.J. 30-5	212	211	
	S.J. 30-5	231	110	
	S.J. 30-5	233	219	
		TOTAL		16,950

CDP1094.WK3

ALLOCATION EXAMPLE

29-6 #2 CPD OCTOBER, 1994

07-Feb-95

UNIT	WELL #	METERED GAS VOLUME (mcf)	VOLUME RATIO	ALLOCATED GAS VOLUME (mcf)	MEASURED WELL BTU VALUE	METERED MMBTU's	MMBTU RATIO	ALLOCATED MMBTU	ALLOCATED WELL BTU VALUE		VOLUME DIFFERENCE (%)	MMBTU DIFFERENCE (%)	WELL BTU VALUE DIFFERENCE (%)
29-6 #2 CPD	CPD	786,581			0.906	712,642							
S. J. 29-5	203	46,746	0.0614023	48,298	0.897	41,954	0.06268	44,669	0.925		3.32%	6.47%	3.05%
S. J. 29-6	207	128,405	0.1686648	132,669	0.856	109,854	0.164126	116,963	0.882		3.32%	6.47%	3.05%
S. J. 29-6	214	0	0	0	0.000	0	0	0					
S. J. 29-6	215	0	0	0	0.000	0	0	0					
S. J. 29-6	219	0	0	0	0.000	0	0	0					
S. J. 29-6	220	41,984	0.0551479	43,378	0.867	36,391	0.05437	38,746	0.893		3.32%	6.47%	3.05%
S. J. 29-6	221	0	0	0	0.000	0	0	0					
S. J. 29-6	222	68,625	0.090142	70,904	0.860	58,992	0.088136	62,810	0.886		3.32%	6.47%	3.05%
S. J. 29-6	223	97,901	0.1285968	101,152	0.855	83,657	0.124987	89,071	0.881		3.32%	6.47%	3.05%
S. J. 29-6	224	58,558	0.0769177	60,502	0.890	52,135	0.077892	55,509	0.917		3.32%	6.47%	3.05%
S. J. 29-6	237	40,200	0.0528046	41,535	0.888	35,709	0.053351	38,020	0.915		3.32%	6.47%	3.05%
S. J. 29-6	238	36,398	0.0478096	37,606	0.874	31,810	0.047525	33,868	0.901		3.32%	6.47%	3.05%
S. J. 29-6	239	40,759	0.0535388	42,113	0.867	35,330	0.052784	37,616	0.893		3.32%	6.47%	3.05%
S. J. 30-5	211	83,659	0.1098886	86,436	0.914	76,452	0.114223	81,400	0.942		3.32%	6.47%	3.05%
S. J. 30-5	212	15,705	0.0206296	16,227	0.892	14,015	0.020939	14,922	0.920		3.32%	6.47%	3.05%
S. J. 30-5	231	9,570	0.0125704	9,888	0.919	8,795	0.013139	9,364	0.947		3.32%	6.47%	3.05%
S. J. 29-5	219	10,294	0.0135217	10,636	0.887	9,133	0.013646	9,725	0.914		3.32%	6.47%	3.05%
S. J. 29-5	225	4,363	0.0057305	4,508	0.897	3,915	0.00585	4,169	0.925		3.32%	6.47%	3.05%
S. J. 29-5	226	37,676	0.0494884	38,927	0.880	33,158	0.049539	35,304	0.907		3.32%	6.47%	3.05%
S. J. 29-5	229	0	0	0	0.000	0	0	0					
S. J. 29-5	230	21,811	0.0286499	22,535	0.954	20,803	0.03108	22,149	0.983		3.32%	6.47%	3.05%
S. J. 29-5	231	269	0.0003537	278	1.026	276	0.000413	294	1.058		3.32%	6.47%	3.05%
S. J. 30-5	233	18,380	0.0241426	18,990	0.922	16,947	0.02532	18,044	0.950		3.32%	6.47%	3.05%
S.J. 29-6	247R	0	0	0	0.000	0	0	0					
TOTAL		761,303	1	786,581		669,327	1	712,642			3.32%	6.47%	

CDP1094.WK3

ALLOCATION EXAMPLE

29-6 #2 CPD NOVEMBER, 1994

07-Feb-95

UNIT	WELL #	METERED GAS VOLUME (mcf)	VOLUME RATIO	ALLOCATED GAS VOLUME (mcf)	MEASURED WELL BTU VALUE	METERED MMBTU's	MMBTU RATIO	ALLOCATED MMBTU	ALLOCATED WELL BTU VALUE		VOLUME DIFFERENCE (%)	MMBTU DIFFERENCE (%)	WELL BTU VALUE DIFFERENCE (%)
29-6 #2 CPD	CPD	790,420			0.906	716,121							
S. J. 29-5	203	43,978	0.0573109	45,300	0.897	39,470	0.058458	41,863	0.924		3.00%	6.06%	2.97%
S. J. 29-6	207	130,243	0.1697275	134,156	0.856	111,427	0.16503	118,181	0.881		3.00%	6.06%	2.97%
S. J. 29-6	214	0	0	0	0.000	0	0	0					
S. J. 29-6	215	0	0	0	0.000	0	0	0					
S. J. 29-6	219	0	0	0	0.000	0	0	0					
S. J. 29-6	220	44,719	0.058276	46,062	0.867	38,762	0.057409	41,111	0.893		3.00%	6.06%	2.97%
S. J. 29-6	221	0	0	0	0.000	0	0	0					
S. J. 29-6	222	64,987	0.0846883	66,939	0.860	55,864	0.082738	59,251	0.885		3.00%	6.06%	2.97%
S. J. 29-6	223	91,753	0.1195693	94,510	0.855	78,404	0.116121	83,157	0.880		3.00%	6.06%	2.97%
S. J. 29-6	224	61,885	0.080646	63,744	0.890	55,098	0.081603	58,438	0.917		3.00%	6.06%	2.97%
S. J. 29-6	237	41,156	0.0536329	42,392	0.888	36,558	0.054145	38,774	0.915		3.00%	6.06%	2.97%
S. J. 29-6	238	35,764	0.0466064	36,839	0.874	31,256	0.046292	33,151	0.900		3.00%	6.06%	2.97%
S. J. 29-6	239	40,905	0.0533059	42,134	0.867	35,456	0.052513	37,605	0.893		3.00%	6.06%	2.97%
S. J. 30-5	211	83,689	0.1090602	86,203	0.914	76,480	0.113272	81,116	0.941		3.00%	6.06%	2.97%
S. J. 30-5	212	18,737	0.0244171	19,300	0.892	16,720	0.024764	17,734	0.919		3.00%	6.06%	2.97%
S. J. 30-5	231	9,462	0.0123302	9,746	0.919	8,695	0.012878	9,222	0.946		3.00%	6.06%	2.97%
S. J. 29-5	219	10,637	0.0138615	10,956	0.887	9,438	0.013978	10,010	0.914		3.00%	6.06%	2.97%
S. J. 29-5	225	6,622	0.0086295	6,821	0.897	5,943	0.008802	6,303	0.924		3.00%	6.06%	2.97%
S. J. 29-5	226	37,434	0.0487824	38,559	0.880	32,945	0.048794	34,942	0.906		3.00%	6.06%	2.97%
S. J. 29-5	229	0	0	0	0.000	0	0	0					
S. J. 29-5	230	24,930	0.0324884	25,679	0.954	23,778	0.035217	25,219	0.982		3.00%	6.06%	2.97%
S. J. 29-5	231	274	0.0003576	283	1.026	282	0.000417	299	1.057		3.00%	6.06%	2.97%
S. J. 30-5	233	20,189	0.02631	20,796	0.922	18,616	0.027571	19,744	0.949		3.00%	6.06%	2.97%
S.J. 29-6	247R	0	0	0	0.000	0	0	0					
TOTAL		767,366	1	790,420		675,191	1	716,121			3.00%	6.06%	

** All volumes and BTU values assume a 14.73 Pressure Base

CDP1094.WK3

ALLOCATION EXAMPLE

29-6 #2 CPD DECEMBER, 1994

08-Feb-95

UNIT	WELL #	METERED GAS VOLUME (mcf)	VOLUME RATIO	ALLOCATED GAS VOLUME (mcf)	MEASURED WELL BTU VALUE	METERED MMBTU's	MMBTU RATIO	ALLOCATED MMBTU	ALLOCATED WELL BTU VALUE		VOLUME DIFFERENCE (%)	MMBTU DIFFERENCE (%)	WELL BTU VALUE DIFFERENCE (%)
29-6 #2 CPD	CPD	871,461			0.905	788,672							
S. J. 29-5	203	47,348	0.0529177	46,116	0.925	43,802	0.054055	42,631	0.924		-2.60%	-2.67%	-0.07%
S. J. 29-6	207	154,435	0.1726032	150,417	0.892	137,813	0.170071	134,130	0.892		-2.60%	-2.67%	-0.07%
S. J. 29-6	214	0	0	0	0.000	0	0	0					
S. J. 29-6	215	0	0	0	0.000	0	0	0					
S. J. 29-6	219	0	0	0	0.000	0	0	0					
S. J. 29-6	220	53,423	0.0597077	52,033	0.903	48,220	0.059506	46,931	0.902		-2.60%	-2.67%	-0.07%
S. J. 29-6	221	0	0	0	0.000	0	0	0					
S. J. 29-6	222	74,307	0.0830485	72,374	0.887	65,929	0.081361	64,167	0.887		-2.60%	-2.67%	-0.07%
S. J. 29-6	223	102,231	0.1142578	99,571	0.905	92,483	0.114131	90,012	0.904		-2.60%	-2.67%	-0.07%
S. J. 29-6	224	72,365	0.0808779	70,482	0.890	64,428	0.079509	62,706	0.890		-2.60%	-2.67%	-0.07%
S. J. 29-6	237	46,216	0.0516534	45,014	0.921	42,566	0.05253	41,429	0.920		-2.60%	-2.67%	-0.07%
S. J. 29-6	238	38,062	0.04254	37,072	0.895	34,083	0.04206	33,172	0.895		-2.60%	-2.67%	-0.07%
S. J. 29-6	239	47,420	0.0529986	46,186	0.902	42,753	0.05276	41,610	0.901		-2.60%	-2.67%	-0.07%
S. J. 30-5	211	109,954	0.122889	107,093	0.915	100,595	0.124141	97,907	0.914		-2.60%	-2.67%	-0.07%
S. J. 30-5	212	21,352	0.0238641	20,797	0.931	19,884	0.024539	19,353	0.931		-2.60%	-2.67%	-0.07%
S. J. 30-5	231	10,432	0.011659	10,160	0.919	9,587	0.011831	9,330	0.918		-2.60%	-2.67%	-0.07%
S. J. 29-5	219	12,159	0.0135891	11,842	0.918	11,161	0.013774	10,863	0.917		-2.60%	-2.67%	-0.07%
S. J. 29-5	225	8,017	0.0089606	7,809	0.922	7,392	0.009123	7,195	0.921		-2.60%	-2.67%	-0.07%
S. J. 29-5	226	44,367	0.0495865	43,213	0.913	40,500	0.04998	39,418	0.912		-2.60%	-2.67%	-0.07%
S. J. 29-5	229	0	0	0	0.000	0	0	0					
S. J. 29-5	230	30,194	0.0337459	29,408	0.940	28,396	0.035043	27,637	0.940		-2.60%	-2.67%	-0.07%
S. J. 29-5	231	260	0.0002907	253	1.026	267	0.000329	260	1.026		-2.60%	-2.67%	-0.07%
S. J. 30-5	233	22,199	0.0248104	21,621	0.922	20,468	0.025259	19,921	0.921		-2.60%	-2.67%	-0.07%
S.J. 29-6	247R	0	0	0	0.000	0	0	0					
TOTAL		894,741	1	871,461		810,329	1	788,672			-2.60%	-2.67%	

PHILLIPS PETROLEUM COMPANY
FARMINGTON AREA

UNIT	WELL #	PIPELINE WATER	TRUCKED WATER	SWD LOCATION
CPD #2 29-6				
S. J. 29-5	203	X		29-6 SWD
S. J. 29-6	207	X		29-6 SWD
S. J. 29-6	214	X		29-6 SWD
S. J. 29-6	215	X		29-6 SWD
S. J. 29-6	219	X		29-6 SWD
S. J. 29-6	220	X		29-6 SWD
S. J. 29-6	221	X		29-6 SWD
S. J. 29-6	222	X		29-6 SWD
S. J. 29-6	223	X		29-6 SWD
S. J. 29-6	224	X		29-6 SWD
S. J. 29-6	237	X		29-6 SWD
S. J. 29-6	238	X		29-6 SWD
S. J. 29-6	239	X		29-6 SWD
S. J. 30-5	211	X		29-6 SWD
S. J. 30-5	212	X		29-6 SWD
S. J. 30-5	231	X		29-6 SWD
S. J. 29-5	219	X		29-6 SWD
S. J. 29-5	225	X		29-6 SWD
S. J. 29-5	226	X		29-6 SWD
S. J. 29-5	229		X	29-6 SWD
S. J. 29-5	230	X		29-6 SWD
S. J. 29-5	231		X	29-6 SWD
S. J. 30-5	233	X		29-6 SWD
S. J. 29-6	247 R		X	29-6 SWD

October 19, 1994

PHILLIPS PETROLEUM COMPANY
San Juan Basin, New Mexico
Off-Lease Measurement of Gas Applications

STATEMENT: The allocation meters are calibrated and gas samples are collected in accordance with Onshore Oil and Gas Order No. 5.

COPY

MECHANICAL INTEGRITY

All lines downstream of the meter runs on the individual well locations to the CPDs have been pressure tested with either water or nitrogen. The lines were pressured to 750 psi and held overnight.

COPY

Estimate of Blowdown Volumes
Mesa Verde & Fruitland Sand Formations

Assumptions: Ideal Gas Law ($Z = 1$)
$2\frac{3}{8}$" Tubing at 6000 ft.
Pressure = 300 psig
Temperature = Constant 60°
Two Tubing Volumes for Blowdown
Average Blowdown = 8 minutes

$P_1 V_1 = P_{sc} V_{sc}$ $\quad P_1 = 314$ psia

$P_{sc} = 14.7$ psia

$V_1 = 2(6000')(.0217\ ^{ft^3}/_{ft})$

$= 260\ ft^3$

$V_{sc} = \left(\frac{314}{14.7}\right)(260) = 5554\ ft^3 \approx 5.6$ MCF

5.6 MCF in 8 minutes = $\boxed{0.7\ ^{MCF}/_{Min}}$

Mesa Verde & Fruitland Sand = $0.7\ ^{MCF}/_{Min}$

LEH

3/16/95

Estimate of Blowdown Volume

Dakota Formation

Assumptions: Ideal Gas Law ($z = 1$)
$2\frac{3}{8}$" Tubing at 7200 ft
Pressure = 350 psig
Temperature = Constant 60°
Two Tubing Volumes for Blowdown
Average Blowdown = 8 minutes

$P_1 V_1 = P_{sc} V_{sc}$

$P_1 = 364$ psia

$P_{sc} = 14.7$ psia

$V_1 = 2(7200')(.0217\ ^{ft^3}/_{ft})$
$= 312\ ft^3$

$V_{sc} = \left(\frac{364}{14.7}\right)(312) = 7726\ ft^3 \approx 7.7$ MCF

7.7 MCF in 8 minutes $\approx$ **1 MCF/Min**

Dakota Formation = 1.0 MCF/Min

LEH

3/16/95

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

GARY E. JOHNSON
GOVERNOR

JENNIFER A. SALISBURY
CABINET SECRETARY

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178 FAX: (505) 334-6170

April 10, 1995

Mr Ed Hasely
Phillips Petroleum Company
5525 Hwy 64 NBU 3004
Farmington NM 87401

Re: 29-6 #2 CPD

Dear Mr. Hasely:

As per Rule 403.C. your application for the approval of the allocation method to be used at the referenced CPD is hereby approved.

Sincerely,

Frank T. Chavez, Supervisor District III

FTC/sh

PHILLIPS PETROLEUM COMPANY
FARMINGTON, NEW MEXICO 87401
5525 HWY. 64 NBU 3004

NAME	ACT	INIT
DM		
ADM		
ADMIN		
LRR		
MIN		
P&EC		
NAV		
RAN		
PAO		
IRM		
SUPR		
EMP		
FILE		
LIBRARY		

February 13, 1996

Bureau of Land Management
Attn: Mr. Mike Pool
1235 La Plata Hwy.
Farmington, NM 87401

Amendment - Off Lease Measurement
San Juan 29-6 #1 & #2 CPDs

Dear Mr. Pool:

Phillips Petroleum Company proposes to amend our approved off lease measurement/ commingling applications for the two subject Central Points of Delivery (CPDs). The original applications were approved by the BLM on March 23, 1995 and by the NMOCD on April 10, 1995.

The proposal is to convert several water lines to gas service which will allow four wells that currently flow to the 29-6 CPD#1 to flow gas to the 29-6 CPD #2. The proposed system will permit Phillips to selectively flow gas to either CPD #1 or CPD #2, but not both at the same time. We do not expect to be switching CPDs on a frequent basis. Currently CPD #2 has additional capacity and CPD #1 is at full capacity. By flowing excess gas from the CPD #1 system to CPD #2, we will be able to maximize production from the area. If in the future, volumes and capacities are such that additional gas volumes are needed at CPD #1, the flow will be redirected.

As shown on the attached map, the four wells are:

29-6 #206	NE Sec. 4, T29N, R6W
29-6 #216	SE Sec. 4, T29N, R6W
29-6 #257R	NW Sec. 9, T29N, R6W
29-6 #259	NE Sec. 9, T29N, R6W

Phillips is the only operator participating in 29-6 #1 and #2 CPDs which contain only Fruitland Coal wells. The water lines will be pressure tested prior to converting them to gas service. Gas allocation will be handled in the same manner as described in our approved application. The only change is that the sales volume for the four wells will be allocated back from whichever CPD they flowed to for the time period.

APPROVED
FEB 29 1996
DISTRICT MANAGER

OPERATOR

Phillips Petroleum will appreciate your timely response concerning our proposal. If you have any questions or if additional information is required, please contact me at 599-3460.

Sincerely,

PHILLIPS PETROLEUM COMPANY

Ed Hasely

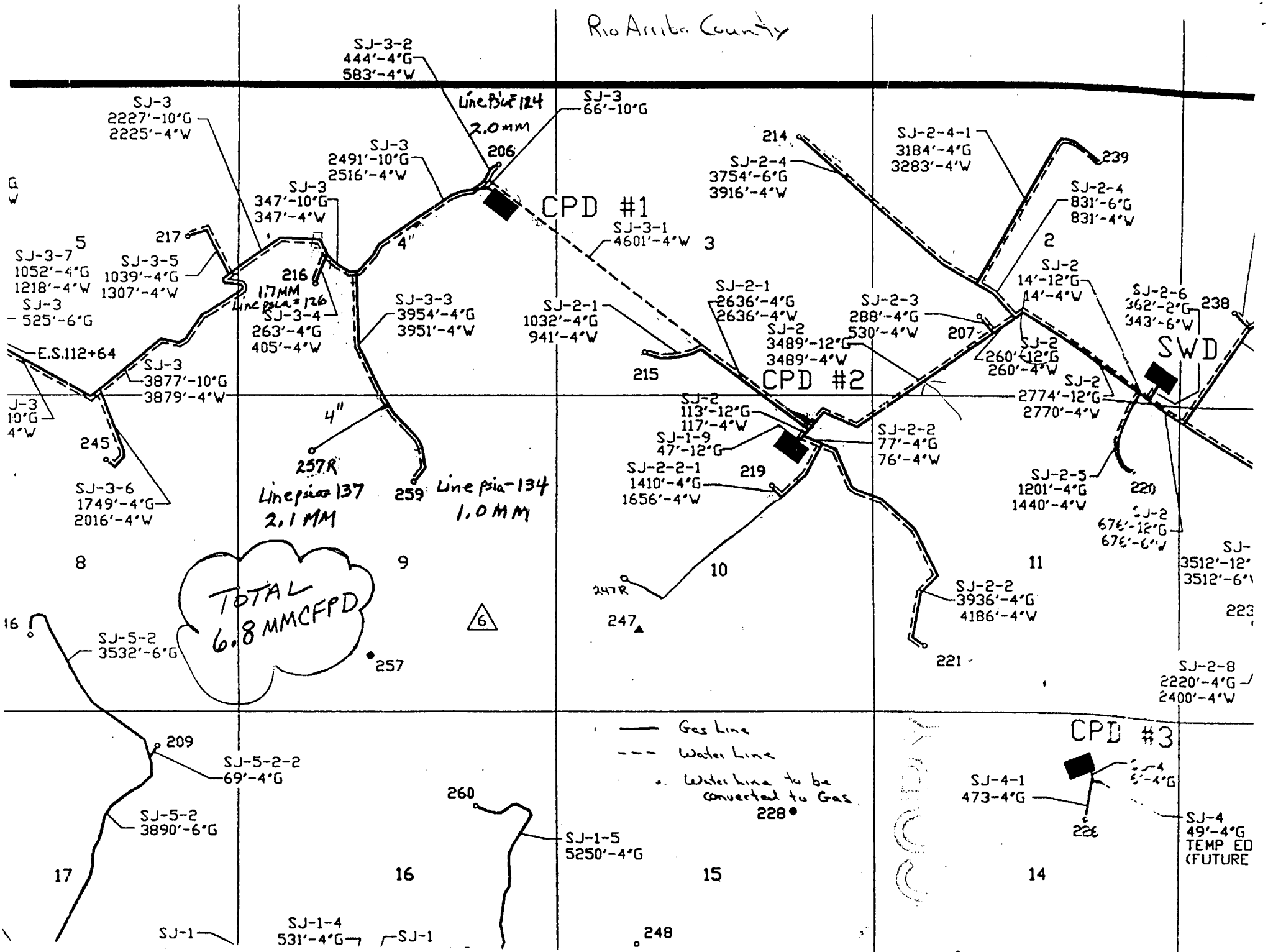
Ed Hasely
Environmental/Regulatory Engineer

attachment
cc: Frank Chavez (NMOCD)

leh\OLMamd.296

29-6 Unit

Rio Arriba County



NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE
AZTEC NM 87410
(505) 334-6178 FAX: (505) 334-6170
http:\\emnrd.state.nm.us\ocd\District III\3distric.htm

GARY E. JOHNSON
GOVERNOR

Jennifer A. Salisbury
CABINET SECRETARY

February 13, 1998

Doyle Pruden
Phillips Pet Co
5525 Hwy 64 NBU 3004
Farmington NM 87401

COPY

Re: Aztec CPD
San Juan 29-6 CPD #1 and #2
32-8 CPD #1, #2, and #3

Dear Doyle:

Your recommended allocation procedures for the listed CPD's are hereby approved.

Sincerely,

Frank T. Chavez
District Supervisor

FTC\sh

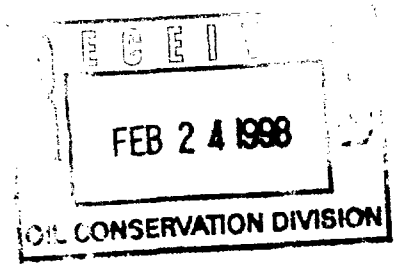
OLM 3/16/98

PHILLIPS PETROLEUM COMPANY
FARMINGTON, NEW MEXICO 87401
5525 HWY. 64 NBU 3004

February 20, 1998

Re: 29-6 #3 CPD
Off-Lease Measurement of Gas

State of New Mexico
Energy, Minerals & Natural Resources Dept.
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505



Attn: David Catanach

Phillips Petroleum Company respectfully requests New Mexico Oil Conservation approval for off-lease measurement/commingling of gas through the subject central point of delivery (CPD) located in Rio Arriba County, New Mexico. The original application was approved by the BLM on March 23, 1995 and the allocation method was approved by the OCD on April, 10 1995. A copy of the following documents are attached for your reference:

1) **Original application for the 29-6 #3 CPD dated February 23,1995 and approved by the BLM on March 23, 1995**
2) **Approval of the allocation method for the 29-6 #3 CPD by Frank Chavez of the OCD dated April 10, 1995.**

There is only 1 well connected to this central delivery point.

As we discussed by phone last year, Phillips has several cases where off-lease measurement/commingling approval was obtained from the BLM without approval from the OCD in Santa Fe. This was unintentional. We did obtain approval for the allocation method on these cases from the OCD office in Aztec. It was not known at that time that additional approval was needed from the OCD in Santa Fe. I will be forwarding for approval these additional applications in the coming weeks.

If you have any questions concerning this, please call me at (505) 599-3450.

Sincerely,
Phillips Petroleum Company

Doyle Pruden
Accounting Specialist

cc: Frank Chavez-OCD Aztec, NM
Danny Jaap

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

New Mexico DRUG FREE It's a State of Mind!

GARY E. JOHNSON
GOVERNOR

JENNIFER A. SALISBURY
CABINET SECRETARY

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178 FAX: (505) 334-6170

April 10, 1995

COPY

Mr Ed Hasely
Phillips Petroleum Company
5525 Hwy 64 NBU 3004
Farmington NM 87401

Re: 29-6 #3 CPD

Dear Mr. Hasely:

As per Rule 403.C. your application for the approval of the allocation method to be used at the referenced CPD is hereby approved.

Sincerely,

Frank T. Chavez, Supervisor District III

FTC/sh

PHILLIPS PETROLEUM COMPANY
FARMINGTON, NEW MEXICO 87401
5525 HWY 64 NBU 3004

February 23, 1995

Bureau of Land Management
ATTN: Mr. Mike Pool
1235 La Plata Highway
Farmington, NM 87401

COPY

29-6 #3 CPD
Off-Lease Measurement of Gas

Dear Mr. Pool:

Phillips Petroleum Company requests approval for off-lease measurement/commingling of gas through the subject central point of delivery (CPD) located in Rio Arriba County, New Mexico. Our original request for approval was submitted on August 31, 1994. Due to additional information requests and changes in our proposal, a complete new application is being submitted.

The required information for this application is attached. Phillips is the only operator participating in this CPD which contains only one 29-6 Unit Fruitland Coal well. We would like the one well CPD system approved in order to facilitate approvals if additional wells are proposed for the system.

If you have any questions or if additional information is required, please contact me at 599-3460.

Sincerely,

PHILLIPS PETROLEUM COMPANY

E J Hasely

Ed Hasely
Environmental/Regulatory Engineer

attachments
cc: Frank Chavez - OCD Aztec, NM
J. W. Taylor

leh\296#3cpd.mea

APPROVED

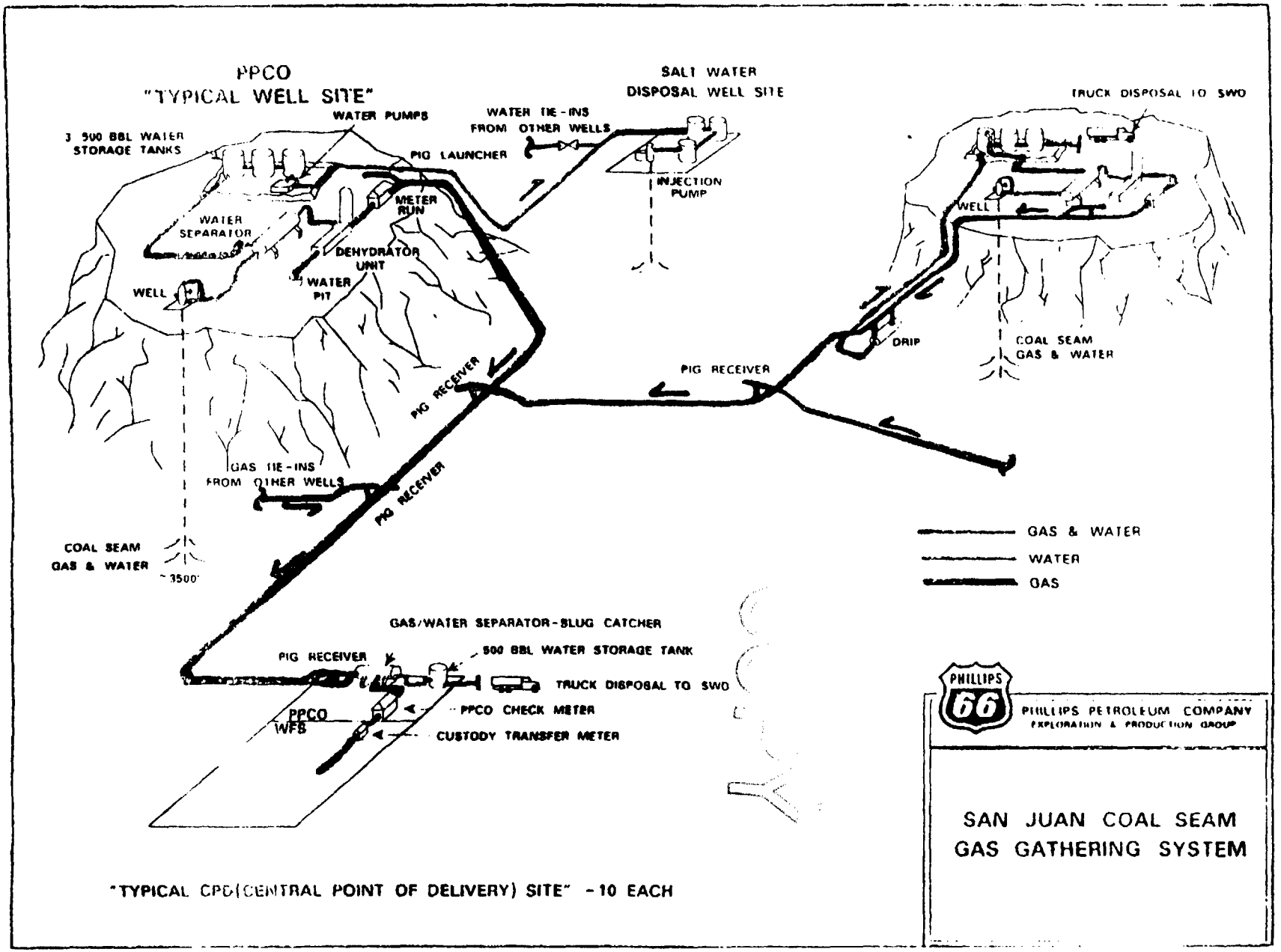
MAR 23 1995

for DISTRICT MANAGER

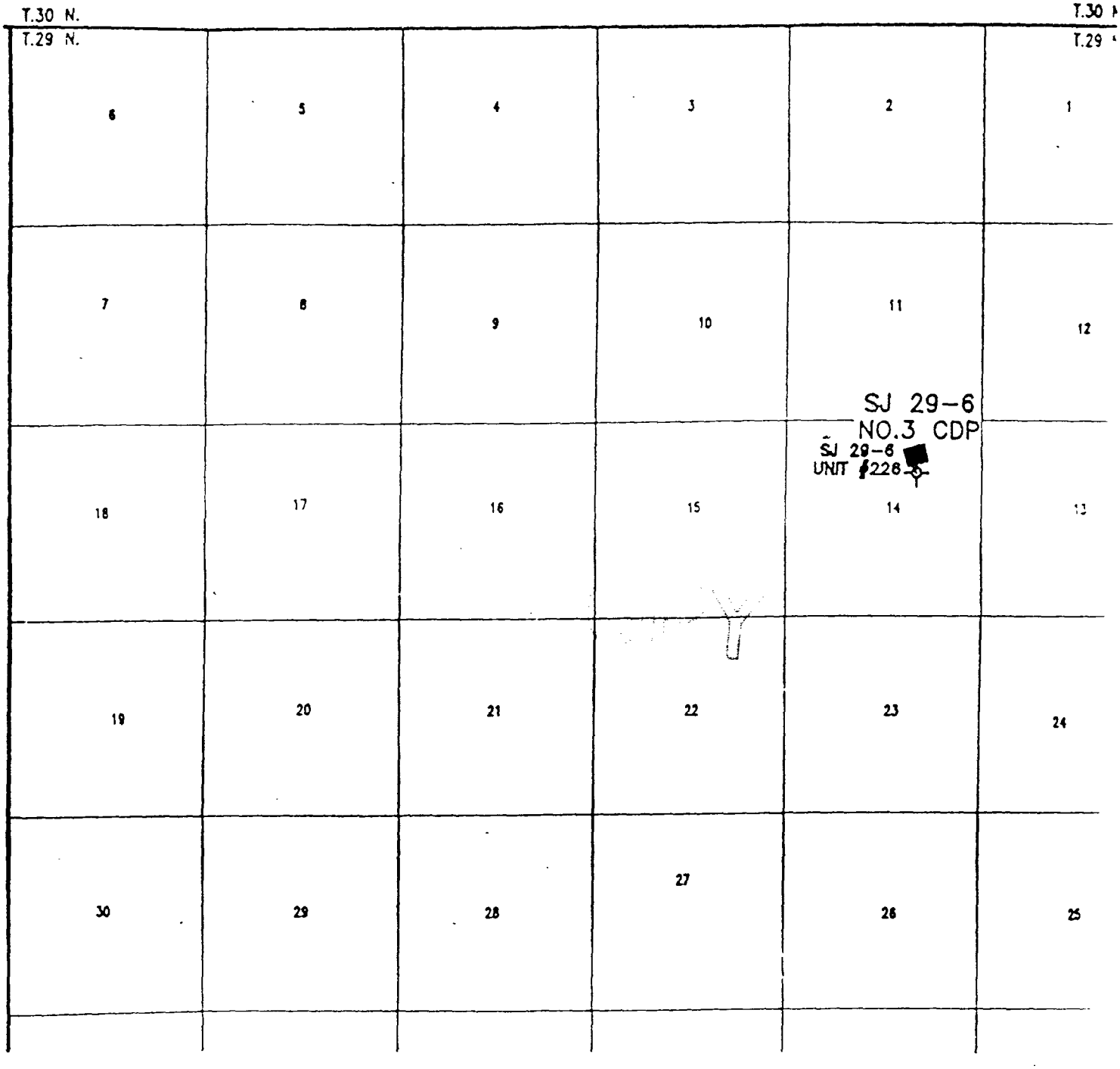
OPERATOR

Off Lease Measurement/Commingling Application

Contents:


PPCO
"TYPICAL WELL SITE"
WATER PUMPS
3 500 BBL WATER STORAGE TANKS
WATER TIE-INS FROM OTHER WELLS
PIG LAUNCHER
SALT WATER DISPOSAL WELL SITE
INJECTION PUMP
METER RUN
WATER SEPARATOR
DEHYDRATOR UNIT
WELL
WATER PIT
PIG RECEIVER
GAS TIE-INS FROM OTHER WELLS
PIG RECEIVER
COAL SEAM GAS & WATER
~3500'
TRUCK DISPOSAL TO SWD
WELL
DRIP
COAL SEAM GAS & WATER
PIG RECEIVER
GAS & WATER
WATER
GAS
GAS/WATER SEPARATOR-SLUG CATCHER
PIG RECEIVER
500 BBL WATER STORAGE TANK
TRUCK DISPOSAL TO SWD
PPCO WFS
PPCO CHECK METER
CUSTODY TRANSFER METER
"TYPICAL CPD(CENTRAL POINT OF DELIVERY) SITE" - 10 EACH
PHILLIPS 66
PHILLIPS PETROLEUM COMPANY
EXPLORATION & PRODUCTION GROUP
SAN JUAN COAL SEAM
GAS GATHERING SYSTEM

PHILLIPS PETROLEUM CO.
S.J. 29-6 No.3 C.D.P. GATHERING
T.29 N., R.6 W., N.M.P.M.,
RIO ARRIBA COUNTY, NEW MEXICO



0 2000 4000
SCALE: 1"=4000'

N

Daggett, Inc.
420 West Elm Street
FARMINGTON, NEW MEXICO 8740
(505) 326-1772
REGISTERED LAND SURVEYOR
NEW MEXICO No.6894

PHILLIPS PETROLEUM COMPANY
FARMINGTON AREA

UNIT	CPD LOCATION SEC	TWN	RNG	Q/Q	WELL #	CONNECT DATE	LEASE OR AGREEMENT NUMBER	CPD OWNER
CPD #3 29-6	14	29N	6W	W / NE		05/07/93		WILLIAMS FIELD SERVICE
S. J. 29-6	14	29	6	SW/NE	226	05/07/93	NMSF078278	

Description of System

Fruitland Coal wells, operated by Phillips Petroleum, are tied into a Phillips gathering system. The gathering system delivers gas to the Central Point of Delivery (CPD) which is operated by Williams Field Service (WFS). The CPD is the point of interconnection on WFS's Manzanares System where WFS receives Phillips Petroleum's gas for gathering. (See Attached Map)

Each of the wells are equipped with a separator, a dehydrator and an electronic flow gas meter. Some wells may also have a small compressor on location. The gas is produced through the separator to remove excess water. The water is stored in water storage tanks on location prior to disposal. The gas is further dried by the dehydrator prior to measurement. Fuel gas required to operate the well equipment (separator, dehydrator, compressors and tank heaters) is taken from the dehydrator prior to measurement. The gas leaving the well location is measured through Phillips Petroleum's electronic flow meter.

After the gas is measured at the individual well locations, the combined gas enters the gathering system which is operated by Phillips Petroleum. The gathering system delivers the gas to the CPD.

At the CPD, the gas enters a gas/water separator which separates any free water that drops out in the pipeline. Since all the gas flows through dehydrators on individual well locations prior to entering the gathering system, this water volume is normally negligible. The gas then goes through Phillips Petroleum's check meter (electronic flow meter) and directly through WFS's CPD meter. Williams compresses the gas downstream of the CPD meter. No gas is removed for fuel between Phillips Petroleum's allocation gas meters on the individual wells and the CPD meter.

Mechanical Integrity

All lines downstream of the meter runs on the individual well locations to the CPDs have been pressure tested with either water or nitrogen.

Equipment Specifications

A sheet is attached that lists the size and make of all fuel burning equipment on each well location. A separate sheet details the burner size for each type of equipment. The equipment list is subject to change as operational needs vary over time. Equipment changes will be reflected in our fuel gas calculations.

PHILLIPS PETROLEUM COMPANY

WELL NUMBER	PROD SEP MFG	SIZE	DEHY MFG	SIZE	TANK #1 MFG	TANK #2 MFG	TANK #3 MFG	RENT COM HP
CPD # 3 29-6								
29-6 #226	PESCO	6 MM	PESCO	6 MM	PESCO	PALMER	PALMER	

BURNER SIZES

	Size (MMCF/D)	Manufacturer	Burner Size (BTU/HR)
Separators			
	2	P&A	250,000
	2	Pesco	250,000
	2	Enertek	250,000
	4	P&A	400,000
	4	Pesco	400,000
	4	Enertek	400,000
	4	American Tank	400,000
	6	P&A	450,000
	6	Pesco	450,000
Dehydrators			
	2	P&A	150,000
	2	Pesco	125,000
	4	P&A	250,000
	4	Pesco	125,000
	4	Enertek	250,000
	6	P&A	350,000
	6	Pesco	200,000
Tank Heaters			
	N/A	All	350,000

ALLOCATION DETAILS

Basically, the gas sales volume (mcf) will be allocated on a volume basis and the gas sales MMBTUs will be allocated on an MMBTU basis.

The gas sales volume (mcf) from an individual well is determined by first calculating a ratio by dividing its metered volume (mcf) by the sum of the metered volumes (mcf) of all wells connected to the CPD. This ratio is then multiplied by the total CPD volume (mcf). The gas production volume for an individual well is determined by adding the well's estimated fuel gas volume and the "Flared or Vented" gas volume to the well's allocated sales volume.

The fuel gas volumes are based upon the type and size of equipment on each well location and the number of producing days for each well. The fuel gas usage for the equipment was detailed in Phillips Petroleum's August 17, 1994 letter addressed to Mr. Mike Pool (attached).

The MMBTUs assigned to an individual well is determined by first calculating a ratio by dividing its metered MMBTUs by the sum of the metered MMBTUs of all wells connected to the CPD. This ratio is then multiplied by the total CPD MMBTUs. The individual well BTU value (MMBTU/mcf) will be calculated by dividing the allocated MMBTUs by the allocated volume (mcf).

If a section of line is blown down, the calculated volume of blowdown gas will be allocated to the affected wells. This allocated blowdown volume will be reported as "Flared or Vented" gas.

Since all the gas flows through dehydrators on individual well locations prior to entering the gathering system, water volumes at the CPD are normally negligible. If these water volumes become significant, they will be allocated to the wells.

Allocation examples using actual data for the months October, November and December, 1994 are attached.

PHILLIPS PETROLEUM COMPANY
FARMINGTON, NEW MEXICO 87401
5525 HWY 64 NBU 3004

August 17, 1994

Bureau of Land Management
1235 La Plata Hwy.
Farmington, NM 87041
Attn: Mike Pool

Gas Used on Lease As Reported
On Form MMS-3160 (Monthly
Report of Operations)

Dear Mr. Pool:

It has been brought to our attention that there are volume discrepancies between gas used on lease as reported by Phillips Petroleum Company on Form MMS-3160 and gas used on lease as calculated by Mike Wade of your office. This was found during the recent Production Accountability Inspections conducted by Mike Wade. The most notable volume discrepancy is the gas used by water tank heaters on our coal seam wells. We have not been calculating or reporting any gas used on lease volumes for these tank heaters.

I am proposing that effective with August 1994 production, Phillips Petroleum Company report gas used on lease based on the attached table for all leases that we operate in the area that your office administers. I would also like to recommend for your approval that we not be required to make retroactive corrections prior to August 1994 for gas used on lease as reported on the Form MMS-3160. The reasoning behind this request is the manpower involved for both Phillips Petroleum Company and the federal agencies to process these corrections, the relatively small gas volumes as compared to the produced volumes, and the fact that volumes are not royalty bearing.

Please let me know your decision concerning this as early as possible to allow our Production Accounting personnel time to make adjustments prior to August's production reports. My phone number is 599-3460 if you would like to discuss.

COPY

Sincerely,

PHILLIPS PETROLEUM COMPANY

Ed Hasely
Environmental/Regulatory Engineer

cc: J. W. Taylor
E. D. Pruden

kh\mms3160.gas

FUEL USE EQUIPMENT

(All factors at 15.025 Pressure Base)

SEPARATORS	≤ 2 MM	-	4.3	mcf/producing day
	4 MM	-	6.9	mcf/producing day
	6 MM	-	7.7	mcf/producing day
DEHYDRATORS	≤ 2 MM	-	2.4	mcf/producing day
	4 MM	-	3.2	mcf/producing day
	6 MM	-	4.7	mcf/producing day
	10 MM	-	6.0	mcf/producing day
TANK HEATERS		-	1.8	mcf/producing day/tank

Note: Anticipate tank heaters to operate from November through March, but this may vary year to year.

COMPRESSORS	50 HP	-	8	mcf/producing day
	80 HP	-	13	mcf/producing day
	100 HP	-	16	mcf/producing day
	120 HP	-	19	mcf/producing day
	165 HP	-	26	mcf/producing day

BLOWDOWN GAS

Fruitland Sand & Mesaverde	-	0.7	mcf/minute of blowdown
Dakota	-	1.0	mcf/minute of blowdown

Monthly Production

Sheets are attached that show the estimated 1995 production for each of the wells connected to the CPD. The allocation examples show the BTU content of the gas from the individual wells, as well as the BTU content of the combined gas at the CPD. Since all the gas is produced from wells completed in the same formation and in the same general area, the BTU content of the gas does not vary substantially.

Evidence on Federal Royalties

Gas volumes and MMBTU quantities are allocated to the wells from the CPD because the most accurate volumes and MMBTU quantities available are from the CPD. The reasons for this, such as measurement errors, stable flow rates, BTU content, etc., have been discussed on numerous occasions. The inherently greater accuracy of the CPD volume, as compared to the sum of the individual well metered volumes, warrants the acceptance of the CPD volume as representative of the total sales volume from the individual wells. It is then necessary only to reduce the total sales volume to its individual components through the proposed allocation method.

Sheets are attached (Allocation Examples) that compare the allocated sales volume with the metered volume for the months October, November and December, 1994. The results vary well by well, month by month, and CPD by CPD, but overall the volumes are extremely close. At the 29-6 #3 CPD, the sum of the allocated MMBTUs were 3.1% higher than sums of the individual well's metered MMBTUs for these three months. This computes to higher overall royalties by following the described off-lease measurement practice.

Economic Justification

The CPD system utilizing off-lease gas measurement will extend the economic life of all affected wells due to the reduction of back pressure on the wells. Without the system, the gas would have been produced into a conventional gas pipeline operated at a substantially higher pressure. The higher pipeline pressure would decrease the recoverable reserves from each well or force Phillips to install compressors on each well location. Either scenario will reduce the economic life of the wells.

1995 PROJECTED CPD VOLUMES

cpd95pjt.wk3

CPD NUMBER	UNIT	WELL	YEARLY MMCF	CPD TOTAL
29-6 #3 CPD	S.J. 29-6	226	2,420	
		TOTAL		2,420

ALLOCATION EXAMPLE

CDP1094.WK3

29-6 #3 CPD OCTOBER, 1994

07-Feb-95

UNIT	WELL #	METERED GAS VOLUME (mcf)	VOLUME RATIO	ALLOCATED GAS VOLUME (mcf)	MEASURED WELL BTU VALUE	METERED MMBTU's	MMBTU RATIO	ALLOCATED MMBTU	ALLOCATED WELL BTU VALUE		VOLUME DIFFERENCE (%)	MMBTU DIFFERENCE (%)	WELL BTU VALUE DIFFERENCE (%)
29-6 #3 CPD	CPD	186,308			0.883	164,510							
S. J. 29-6	226	183,870	1	186,308	0.848	155,989	1	164,510	0.883		1.33%	5.46%	4.08%
TOTAL		183,870	1	186,308		155,989	1	164,510			1.33%	5.46%	

** All volumes and BTU values assume a 14.73 Pressure Base

CDP1094.WK3

ALLOCATION EXAMPLE

29-6 #3 CPD NOVEMBER, 1994

07-Feb-95

UNIT	WELL #	METERED GAS VOLUME (mcf)	VOLUME RATIO	ALLOCATED GAS VOLUME (mcf)	MEASURED WELL BTU VALUE	METERED MMBTU's	MMBTU RATIO	ALLOCATED MMBTU	ALLOCATED WELL BTU VALUE		VOLUME DIFFERENCE (%)	MMBTU DIFFERENCE (%)	WELL BTU VALUE DIFFERENCE (%)
29-6 #3 CPD	CPD	175,407			0.882	154,709							
S. J. 29-6	226	169,822	1	175,407	0.848	144,071	1	154,709	0.882		3.29%	7.38%	3.96%
TOTAL		169,822	1	175,407		144,071	1	154,709			3.29%	7.38%	

** All volumes and BTU values assume a 14.73 Pressure Base.

ALLOCATION EXAMPLE

CDP1094.WK3

29-6 #3 CPD DECEMBER, 1994

08-Feb-95

UNIT	WELL #	METERED GAS VOLUME (mcf)	VOLUME RATIO	ALLOCATED GAS VOLUME (mcf)	MEASURED WELL BTU VALUE	METERED MMBTU's	MMBTU RATIO	ALLOCATED MMBTU	ALLOCATED WELL BTU VALUE		VOLUME DIFFERENCE (%)	MMBTU DIFFERENCE (%)	WELL BTU VALUE DIFFERENCE (%)
29-6 #3 CPD	CPD	196,732			0.880	173,124							
S. J. 29-6	226	203,079	1	196,732	0.875	177,689	1	173,124	0.880		-3.13%	-2.57%	0.57%
TOTAL		203,079	1	196,732		177,689	1	173,124			-3.13%	-2.57%	

** All volumes and BTU values assume a 14.73 Pressure Base.

PHILLIPS PETROLEUM COMPANY
FARMINGTON AREA

UNIT	WELL #	PIPELINE WATER	TRUCKED WATER	SWD LOCATION
CPD #3 29-6				
S. J. 29-6	226		X	29-6 SWD

October 19, 1994

PHILLIPS PETROLEUM COMPANY
San Juan Basin, New Mexico
Off-Lease Measurement of Gas Applications

STATEMENT: The allocation meters are calibrated and gas samples are collected in accordance with Onshore Oil and Gas Order No. 5.

MECHANICAL INTEGRITY

All lines downstream of the meter runs on the individual well locations to the CPDs have been pressure tested with either water or nitrogen. The lines were pressured to 750 psi and held overnight.

Estimate of Blowdown Volume

Dakota Formation

Assumptions: Ideal Gas Law ($z = 1$)
$2\frac{3}{8}$" Tubing at 7200 ft
Pressure = 350 psig
Temperature = Constant 60°
Two Tubing Volumes for Blowdown
Average Blowdown = 8 minutes

$P_1 V_1 = P_{sc} V_{sc}$

$P_1 = 364$ psia
$P_{sc} = 14.7$ psia
$V_1 = 2(7200')(.0217\ ^{ft^3}/_{ft}) = 312\ ft^3$

$$V_{sc} = \left(\frac{364}{14.7}\right)(312) = 7726\ ft^3 \approx 7.7\ MCF$$

7.7 MCF in 8 minutes $\approx$ **1 MCF/Min**

Dakota Formation = 1.0 MCF/Min

LEH
3/16/95

Estimate of Blowdown Volumes
Mesa Verde & Fruitland Sand Formations

Assumptions: Ideal Gas Law ($Z = 1$)
$2\frac{3}{8}$" Tubing at 6000 ft.
Pressure = 300 psig
Temperature = Constant 60°
Two Tubing Volumes for Blowdown
Average Blowdown = 8 minutes

$P_1 V_1 = P_{sc} V_{sc}$

$P_1 = 314$ psia

$P_{sc} = 14.7$ psia

$V_1 = 2(6000')(.0217\ ^{ft^3}/_{ft}) = 260\ ft^3$

$V_{sc} = \left(\frac{314}{14.7}\right)(260) = 5554\ ft^3 \approx 5.6$ MCF

5.6 MCF in 8 minutes = **0.7 MCF/Min**

Mesa Verde & Fruitland Sand = 0.7 MCF/Min

LEH

3/16/95

PHILLIPS PETROLEUM COMPANY
FARMINGTON, NEW MEXICO 87401
5525 HWY. 64 NBU 3004

February 19, 1998

FEB 2 3 1998

Re: 29-6 #4 CPD
Off-Lease Measurement of Gas

State of New Mexico
Energy, Minerals & Natural Resources Dept.
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

Attn: David Catanach

Phillips Petroleum Company respectfully requests New Mexico Oil Conservation approval for off-lease measurement/commingling of gas through the subject central point of delivery (CPD) located in Rio Arriba County, New Mexico. The original application was approved by the BLM on March 23, 1995 and the allocation method was approved by the OCD on April, 10 1995. A copy of the following documents are attached for your reference:

1) **Original application for the 29-6 #4 CPD dated February 23,1995 and approved by the BLM on March 23, 1995**
2) **Approval of the allocation method for the 29-6 #4 CPD by Frank Chavez of the OCD dated April 10, 1995.**

There are a total of 14 wells connected to this central delivery point.

As we discussed by phone last year, Phillips has several cases where off-lease measurement/commingling approval was obtained from the BLM without approval from the OCD in Santa Fe. This was unintentional. We did obtain approval for the allocation method on these cases from the OCD office in Aztec. It was not known at that time that additional approval was needed from the OCD in Santa Fe. I will be forwarding for approval these additional applications in the coming weeks.

If you have any questions concerning this, please call me at (505) 599-3450.

Sincerely,
Phillips Petroleum Company

Doyle Pruden
Accounting Specialist

cc: Frank Chavez-OCD Aztec, NM
Danny Jaap

PHILLIPS PETROLEUM COMPANY
FARMINGTON, NEW MEXICO 87401
5525 HWY 64 NBU 3004

February 23, 1995

Bureau of Land Management
ATTN: Mr. Mike Pool
1235 La Plata Highway
Farmington, NM 87401

29-6 #4 CPD
Off-Lease Measurement of Gas

Dear Mr. Pool:

Phillips Petroleum Company requests approval for off-lease measurement/commingling of gas through the subject central point of delivery (CPD) located in Rio Arriba County, New Mexico. Our original request for approval was submitted on August 31, 1994. Due to additional information requests and changes in our proposal, a complete new application is being submitted.

The required information for this application is attached. Phillips is the only operator participating in this CPD which contains only 29-6 Unit Fruitland Coal wells. If additional wells are proposed to be added to the system, prior approval will be obtained.

If you have any questions or if additional information is required, please contact me at 599-3460.

Sincerely,

PHILLIPS PETROLEUM COMPANY

Ed Hasely
Environmental/Regulatory Engineer

attachments
cc: Frank Chavez - OCD Aztec, NM
J. W. Taylor

leh\296#4cpd.mea

COPY

APPROVED

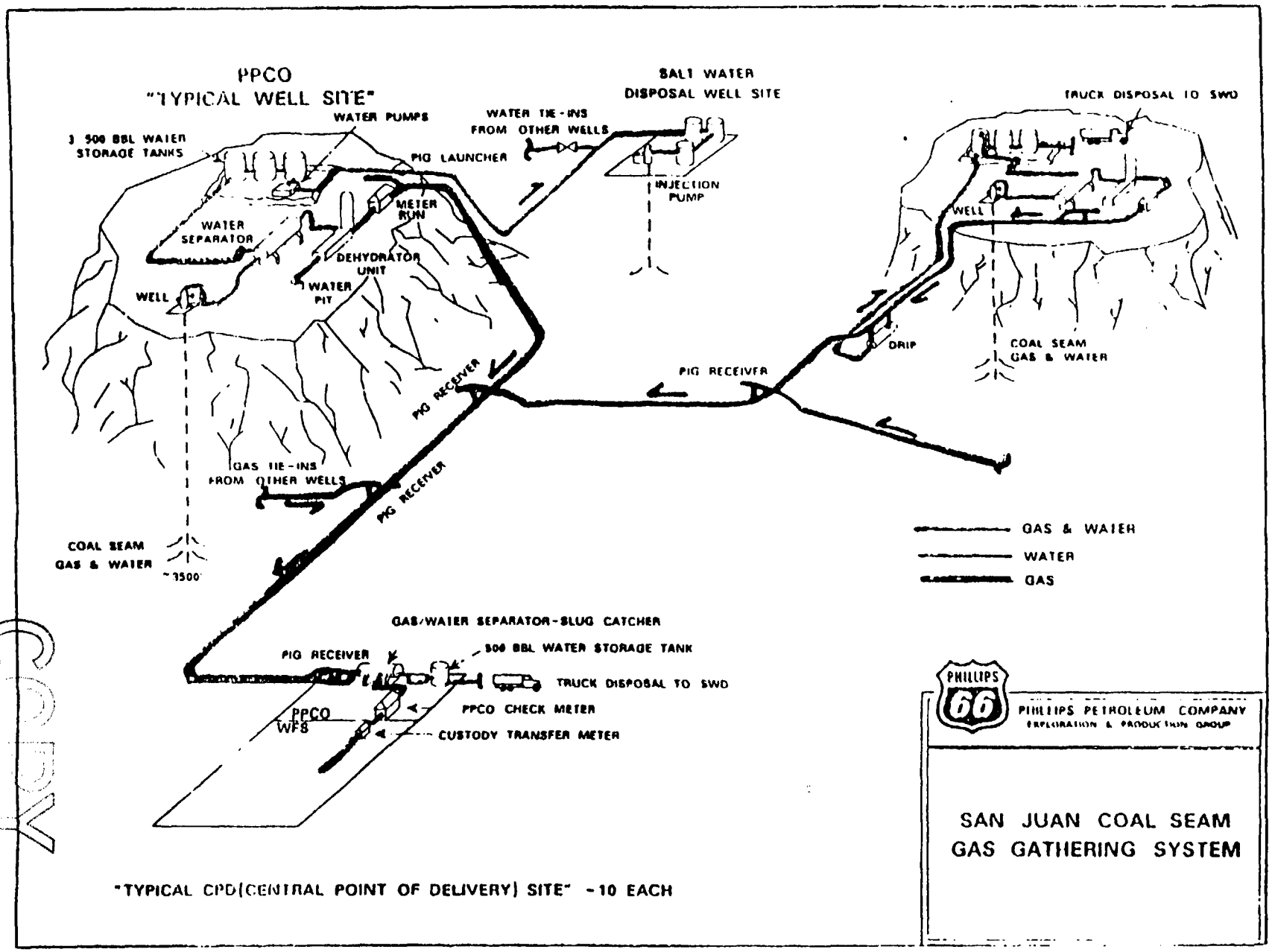
MAR 23 1995

DISTRICT MANAGER

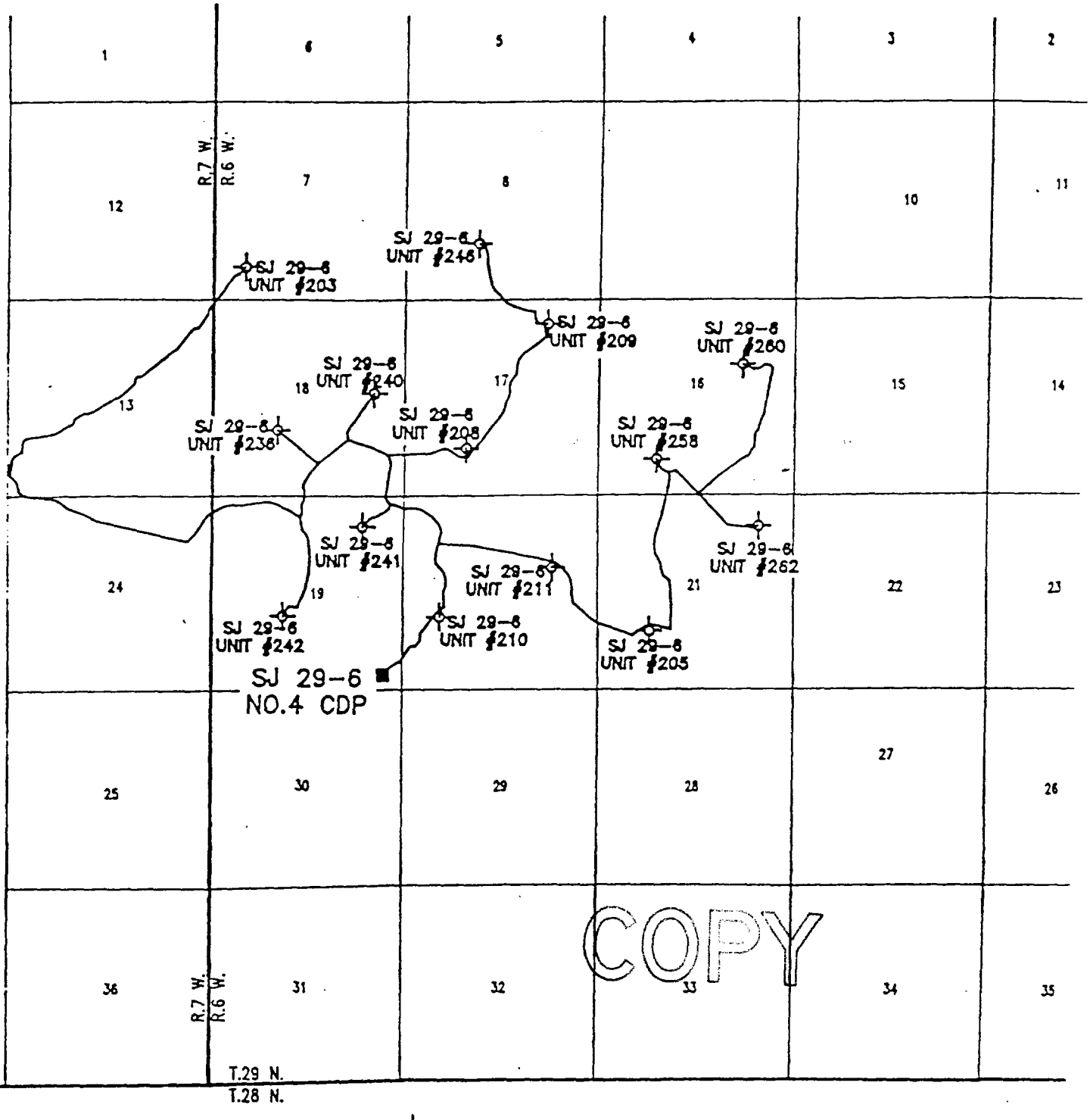
OPERATOR

Off Lease Measurement/Commingling Application

Contents:


PPCO
"TYPICAL WELL SITE"
WATER PUMPS
3 500 BBL WATER STORAGE TANKS
WATER TIE-INS FROM OTHER WELLS
PIG LAUNCHER
METER RUN
WATER SEPARATOR
DEHYDRATOR UNIT
WATER PIT
WELL
SALT WATER DISPOSAL WELL SITE
INJECTION PUMP
TRUCK DISPOSAL TO SWD
WELL
DRIP
COAL SEAM GAS & WATER
PIG RECEIVER
PIG RECEIVER
GAS TIE-INS FROM OTHER WELLS
PIG RECEIVER
COAL SEAM GAS & WATER
~3500'
GAS & WATER
WATER
GAS
GAS/WATER SEPARATOR-SLUG CATCHER
PIG RECEIVER
500 BBL WATER STORAGE TANK
TRUCK DISPOSAL TO SWD
PPCO
WFS
PPCO CHECK METER
CUSTODY TRANSFER METER
"TYPICAL CPD(CENTRAL POINT OF DELIVERY) SITE" -10 EACH
PHILLIPS 66
PHILLIPS PETROLEUM COMPANY
EXPLORATION & PRODUCTION GROUP
SAN JUAN COAL SEAM
GAS GATHERING SYSTEM

PHILLIPS PETROLEUM CO.
S.J. 29-6 No.4 C.D.P. GATHERING
T.29 N., R.7 W., R.6 W., N.M.P.M.,
RIO ARRIBA COUNTY, NEW MEXICO



0 2000 4000
SCALE: 1"=4000'

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Daggett, Inc.
420 West Elm Street
FARMINGTON, NEW MEXICO 8740
(505) 326-1772
REGISTERED LAND SURVEYOR
NEW MEXICO No.8894

PHILLIPS PETROLEUM COMPANY
FARMINGTON AREA

UNIT	CPD LOCATION SEC	TWN	RNG	Q/Q	WELL #	CONNECT DATE	LEASE OR AGREEMENT NUMBER	CPD OWNER
CPD #4 29-6	19	29N	6W	SE / SE		05/11/93		WILLIAMS FIELD SERVICE
S. J. 29-6	7	29N	6W	SW/SW	203	05/14/93	891000439X	24735
S. J. 29-6	21	29N	6W	NE/SW	205	05/11/93	891000439D	24931
S. J. 29-6	17	29N	6W	SE/SW	208	05/11/93	891000439D	24599
S. J. 29-6	17	29N	6W	NW/NE	209	05/11/93	891000439D	24580
S. J. 29-6	20	29N	6W	NW/SW	210	05/19/93	891000439D	24747
S. J. 29-6	20	29N	6W	SE/NE	211	05/19/93	891000439D	24723
S. J. 29-6	18	29N	6W	NE/SW	236	05/18/93	891000439D	24729
S. J. 29-6	18	29N	6W	SE/NE	240	05/18/93	891000439D	24932
S. J. 29-6	19	29N	6W	NE/NE	241	05/18/93	891000439D	24933
S. J. 29-6	19	29N	6W	NE/SW	242	05/18/93	891000439D	24730
S. J. 29-6	8	29N	6W	NE/SW	246	05/12/93	891000439D	24824
S. J. 29-6	16	29N	6W	SE/SW	258	05/11/93	891000439X	24766
S. J. 29-6	16	29N	6W	SW/NE	260	05/12/93	891000439X	24767
S. J. 29-6	21	29N	6W	NE/NE	262	05/11/93	NMSF080379A	25090

COPY

Description of System

Fruitland Coal wells, operated by Phillips Petroleum, are tied into a Phillips gathering system. The gathering system delivers gas to the Central Point of Delivery (CPD) which is operated by Williams Field Service (WFS). The CPD is the point of interconnection on WFS's Manzanares System where WFS receives Phillips Petroleum's gas for gathering. (See Attached Map)

Each of the wells are equipped with a separator, a dehydrator and an electronic flow gas meter. Some wells may also have a small compressor on location. The gas is produced through the separator to remove excess water. The water is stored in water storage tanks on location prior to disposal. The gas is further dried by the dehydrator prior to measurement. Fuel gas required to operate the well equipment (separator, dehydrator, compressors and tank heaters) is taken from the dehydrator prior to measurement. The gas leaving the well location is measured through Phillips Petroleum's electronic flow meter.

After the gas is measured at the individual well locations, the combined gas enters the gathering system which is operated by Phillips Petroleum. The gathering system delivers the gas to the CPD.

At the CPD, the gas enters a gas/water separator which separates any free water that drops out in the pipeline. Since all the gas flows through dehydrators on individual well locations prior to entering the gathering system, this water volume is normally negligible. The gas then goes through Phillips Petroleum's check meter (electronic flow meter) and directly through WFS's CPD meter. Williams compresses the gas downstream of the CPD meter. No gas is removed for fuel between Phillips Petroleum's allocation gas meters on the individual wells and the CPD meter.

Mechanical Integrity

All lines downstream of the meter runs on the individual well locations to the CPDs have been pressure tested with either water or nitrogen.

Equipment Specifications

A sheet is attached that lists the size and make of all fuel burning equipment on each well location. A separate sheet details the burner size for each type of equipment. The equipment list is subject to change as operational needs vary over time. Equipment changes will be reflected in our fuel gas calculations.

PHILLIPS PETROLEUM COMPANY

WELL NUMBER	PROD SEP MFG	SIZE	DEHY MFG	SIZE	TANK #1 MFG	TANK #2 MFG	TANK #3 MFG	RENT CON HI
CPD # 4 29-6								
29-6 #203	PESCO	6 MM	PESCO	6 MM	PALMER	PALMER	PALMER	
29-6 #205	P & A	2 MM	P & A	2 MM	PALMER	PALMER	PALMER	
29-6 #208	P & A	4 MM	P & A	4 MM	WESTERN	WESTERN	WESTERN	
29-6 #209	PESCO	4 MM	PESCO	4 MM	WESTERN	PERMIAN	WESTERN	
29-6 #210	P & A	2 MM	P & A	2 MM	PESCO	PESCO		
29-6 #211	P & A	2 MM	P & A	2 MM	PESCO	PESCO		
29-6 #236	PESCO	4 MM	PESCO	4 MM	PALMER	PALMER	PALMER	
29-6 #240	PESCO	4 MM	PESCO	4 MM	PALMER	PALMER	PALMER	
29-6 #241	P & A	2 MM	P & A	2 MM	PALMER	PALMER	PALMER	
29-6 #242	P & A	2 MM	P & A	2 MM	PALMER	PALMER	PALMER	
29-6 #246	PESCO	2 MM	PESCO	2 MM	PERMIAN	PESCO	PESCO	
29-6 #258	PESCO	6 MM	PESCO	6 MM	PALMER	PALMER	PALMER	
29-6 #260	PESCO	2 MM	PESCO	2 MM	PERMIAN	PERMIAN		
29-6 #262	PESCO	6 MM	PESCO	6 MM	PESCO	PESCO	PESCO	

BURNER SIZES

	Size (MMCF/D)	Manufacturer	Burner Size (BTU/HR)
Separators			
	2	P&A	250,000
	2	Pesco	250,000
	2	Enertek	250,000
	4	P&A	400,000
	4	Pesco	400,000
	4	Enertek	400,000
	4	American Tank	400,000
	6	P&A	450,000
	6	Pesco	450,000
Dehydrators			
	2	P&A	150,000
	2	Pesco	125,000
	4	P&A	250,000
	4	Pesco	125,000
	4	Enertek	250,000
	6	P&A	350,000
	6	Pesco	200,000
Tank Heaters			
	N/A	All	350,000

ALLOCATION DETAILS

Basically, the gas sales volume (mcf) will be allocated on a volume basis and the gas sales MMBTUs will be allocated on an MMBTU basis.

The gas sales volume (mcf) from an individual well is determined by first calculating a ratio by dividing its metered volume (mcf) by the sum of the metered volumes (mcf) of all wells connected to the CPD. This ratio is then multiplied by the total CPD volume (mcf). The gas production volume for an individual well is determined by adding the well's estimated fuel gas volume and the "Flared or Vented" gas volume to the well's allocated sales volume.

The fuel gas volumes are based upon the type and size of equipment on each well location and the number of producing days for each well. The fuel gas usage for the equipment was detailed in Phillips Petroleum's August 17, 1994 letter addressed to Mr. Mike Pool (attached).

The MMBTUs assigned to an individual well is determined by first calculating a ratio by dividing its metered MMBTUs by the sum of the metered MMBTUs of all wells connected to the CPD. This ratio is then multiplied by the total CPD MMBTUs. The individual well BTU value (MMBTU/mcf) will be calculated by dividing the allocated MMBTUs by the allocated volume (mcf).

If a section of line is blown down, the calculated volume of blowdown gas will be allocated to the affected wells. This allocated blowdown volume will be reported as "Flared or Vented" gas.

Since all the gas flows through dehydrators on individual well locations prior to entering the gathering system, water volumes at the CPD are normally negligible. If these water volumes become significant, they will be allocated to the wells.

Allocation examples using actual data for the months October, November and December, 1994 are attached.

PHILLIPS PETROLEUM COMPANY
FARMINGTON, NEW MEXICO 87401
5525 HWY 64 NBU 3004

August 17, 1994

Bureau of Land Management
1235 La Plata Hwy.
Farmington, NM 87041
Attn: Mike Pool

Gas Used on Lease As Reported
On Form MMS-3160 (Monthly
Report of Operations)

Dear Mr. Pool:

It has been brought to our attention that there are volume discrepancies between gas used on lease as reported by Phillips Petroleum Company on Form MMS-3160 and gas used on lease as calculated by Mike Wade of your office. This was found during the recent Production Accountability Inspections conducted by Mike Wade. The most notable volume discrepancy is the gas used by water tank heaters on our coal seam wells. We have not been calculating or reporting any gas used on lease volumes for these tank heaters.

I am proposing that effective with August 1994 production, Phillips Petroleum Company report gas used on lease based on the attached table for all leases that we operate in the area that your office administers. I would also like to recommend for your approval that we not be required to make retroactive corrections prior to August 1994 for gas used on lease as reported on the Form MMS-3160. The reasoning behind this request is the manpower involved for both Phillips Petroleum Company and the federal agencies to process these corrections, the relatively small gas volumes as compared to the produced volumes, and the fact that volumes are not royalty bearing.

Please let me know your decision concerning this as early as possible to allow our Production Accounting personnel time to make adjustments prior to August's production reports. My phone number is 599-3460 if you would like to discuss.

Sincerely,

PHILLIPS PETROLEUM COMPANY

Ed Hasely
Environmental/Regulatory Engineer

cc: J. W. Taylor
E. D. Pruden

COPY

lch\mms3160.gas

FUEL USE EQUIPMENT

(All factors at 15.025 Pressure Base)

SEPARATORS	≤ 2 MM	-	4.3	mcf/producing day
	4 MM	-	6.9	mcf/producing day
	6 MM	-	7.7	mcf/producing day
DEHYDRATORS	≤ 2 MM	-	2.4	mcf/producing day
	4 MM	-	3.2	mcf/producing day
	6 MM	-	4.7	mcf/producing day
	10 MM	-	6.0	mcf/producing day
TANK HEATERS		-	1.8	mcf/producing day/tank

Note: Anticipate tank heaters to operate from November through March, but this may vary year to year.

COMPRESSORS	50 HP	-	8	mcf/producing day
	80 HP	-	13	mcf/producing day
	100 HP	-	16	mcf/producing day
	120 HP	-	19	mcf/producing day
	165 HP	-	26	mcf/producing day

BLOWDOWN GAS

Fruitland Sand & Mesaverde - 0.7 mcf/minute of blowdown

Dakota - 1.0 mcf/minute of blowdown

Monthly Production

Sheets are attached that show the estimated 1995 production for each of the wells connected to the CPD. The allocation examples show the BTU content of the gas from the individual wells, as well as the BTU content of the combined gas at the CPD. Since all the gas is produced from wells completed in the same formation and in the same general area, the BTU content of the gas does not vary substantially.

Evidence on Federal Royalties

Gas volumes and MMBTU quantities are allocated to the wells from the CPD because the most accurate volumes and MMBTU quantities available are from the CPD. The reasons for this, such as measurement errors, stable flow rates, BTU content, etc., have been discussed on numerous occasions. The inherently greater accuracy of the CPD volume, as compared to the sum of the individual well metered volumes, warrants the acceptance of the CPD volume as representative of the total sales volume from the individual wells. It is then necessary only to reduce the total sales volume to its individual components through the proposed allocation method.

Sheets are attached (Allocation Examples) that compare the allocated sales volume with the metered volume for the months October, November and December, 1994. The results vary well by well, month by month, and CPD by CPD, but overall the volumes are extremely close. At the 29-6 #4 CPD, the sum of the allocate MMBTUs were 10.5% higher than sums of the individual well's metered MMBTUs for these three months. This computes to higher overall royalties by following the described off-lease measurement practice.

Economic Justification

The CPD system utilizing off-lease gas measurement will extend the economic life of all affected wells due to the reduction of back pressure on the wells. Without the system, the gas would have been produced into a conventional gas pipeline operated at a substantially higher pressure. The higher pipeline pressure would decrease the recoverable reserves from each well or force Phillips to install compressors on each well location. Either scenario will reduce the economic life of the wells.

1995 PROJECTED CPD VOLUMES

cpd95pjt.wk3

CPD NUMBER	UNIT	WELL	YEARLY MMCF	CPD TOTAL
29-6 #4 CPD	S.J. 29-6	203	1,862	
	S.J. 29-6	205	281	
	S.J. 29-6	208	1,095	
	S.J. 29-6	209	876	
	S.J. 29-6	210	533	
	S.J. 29-6	211	472	
	S.J. 29-6	236	728	
	S.J. 29-6	240	1,553	
	S.J. 29-6	241	712	
	S.J. 29-6	242	536	
	S.J. 29-6	246	456	
	S.J. 29-6	258	1,606	
	S.J. 29-6	260	249	
	S.J. 29-6	262	1,424	
		TOTAL		12,383

ALLOCATION EXAMPLE

29-6 #4 CPD OCTOBER, 1994

CDP1094.WK3

07-Feb-95

UNIT	WELL #	METERED GAS VOLUME (mcf)	VOLUME RATIO	ALLOCATED GAS VOLUME (mcf)	MEASURED WELL BTU VALUE	METERED MMBTU's	MMBTU RATIO	ALLOCATED MMBTU	ALLOCATED WELL BTU VALUE		VOLUME DIFFERENCE (%)	MMBTU DIFFERENCE (%)	WELL BTU VALUE DIFFERENCE (%)
29-6 #4 CPD	CPD	810,970			0.899	729,062							
S. J. 29-6	203	73,782	0.099727	80,876	0.903	66,596	0.101382	73,914	0.914		9.61%	10.99%	1.25%
S. J. 29-6	205	11,703	0.0158183	12,828	0.895	10,479	0.015953	11,631	0.907		9.61%	10.99%	1.25%
S. J. 29-6	208	91,868	0.1241728	100,700	0.903	82,920	0.126234	92,033	0.914		9.61%	10.99%	1.25%
S. J. 29-6	209	72,329	0.097763	79,283	0.887	64,174	0.097696	71,226	0.898		9.61%	10.99%	1.25%
S. J. 29-6	210	18,612	0.0251568	20,401	0.894	16,647	0.025342	18,476	0.906		9.61%	10.99%	1.25%
S. J. 29-6	211	15,133	0.0204544	16,588	0.893	13,520	0.020582	15,005	0.905		9.61%	10.99%	1.25%
S. J. 29-6	236	24,878	0.0336262	27,270	0.883	21,971	0.033448	24,386	0.894		9.61%	10.99%	1.25%
S. J. 29-6	240	102,951	0.1391531	112,849	0.882	90,817	0.138255	100,797	0.893		9.61%	10.99%	1.25%
S. J. 29-6	241	54,560	0.0737457	59,806	0.873	47,627	0.072505	52,861	0.884		9.61%	10.99%	1.25%
S. J. 29-6	242	43,917	0.0593601	48,139	0.889	39,055	0.059456	43,347	0.900		9.61%	10.99%	1.25%
S. J. 29-6	246	38,210	0.0516463	41,884	0.887	33,902	0.051611	37,627	0.898		9.61%	10.99%	1.25%
S. J. 29-6	258	77,181	0.1043212	84,601	0.876	67,610	0.102927	75,040	0.887		9.61%	10.99%	1.25%
S. J. 29-6	262	94,006	0.1270626	103,044	0.886	83,311	0.126829	92,466	0.897		9.61%	10.99%	1.25%
S. J. 29-6	260	20,710	0.0279925	22,701	0.881	18,248	0.02778	20,253	0.892		9.61%	10.99%	1.25%
TOTAL		739,840	1	810,970		656,878	1	729,062			9.61%	10.99%	

CDP1094.WK3

ALLOCATION EXAMPLE

29-6 #4 CPD DECEMBER, 1994

08-Feb-95

UNIT	WELL #	METERED GAS VOLUME (mcf)	VOLUME RATIO	ALLOCATED GAS VOLUME (mcf)	MEASURED WELL BTU VALUE	METERED MMBTU's	MMBTU RATIO	ALLOCATED MMBTU	ALLOCATED WELL BTU VALUE		VOLUME DIFFERENCE (%)	MMBTU DIFFERENCE (%)	WELL BTU VALUE DIFFERENCE (%)
29-6 #4 CPD	CPD	1,043,624			0.906	945,523							
S. J. 29-6	203	148,922	0.1584293	165,341	0.903	134,418	0.159135	150,465	0.910		11.03%	11.94%	0.82%
S. J. 29-6	205	22,923	0.0243864	25,450	0.921	21,113	0.024995	23,633	0.929		11.03%	11.94%	0.82%
S. J. 29-6	208	84,805	0.090219	94,155	0.907	76,892	0.091032	86,073	0.914		11.03%	11.94%	0.82%
S. J. 29-6	209	88,100	0.0937244	97,813	0.907	79,880	0.094569	89,417	0.914		11.03%	11.94%	0.82%
S. J. 29-6	210	24,447	0.0260077	27,142	0.894	21,866	0.025887	24,476	0.902		11.03%	11.94%	0.82%
S. J. 29-6	211	20,554	0.0218662	22,820	0.893	18,363	0.021739	20,555	0.901		11.03%	11.94%	0.82%
S. J. 29-6	236	83,711	0.0890552	92,940	0.883	73,930	0.087525	82,757	0.890		11.03%	11.94%	0.82%
S. J. 29-6	240	103,339	0.1099363	114,732	0.882	91,159	0.107922	102,042	0.889		11.03%	11.94%	0.82%
S. J. 29-6	241	64,248	0.0683497	71,331	0.873	56,084	0.066397	62,780	0.880		11.03%	11.94%	0.82%
S. J. 29-6	242	42,880	0.0456175	47,608	0.889	38,133	0.045145	42,686	0.897		11.03%	11.94%	0.82%
S. J. 29-6	246	39,059	0.0415526	43,365	0.909	35,495	0.042021	39,732	0.916		11.03%	11.94%	0.82%
S. J. 29-6	258	122,509	0.1303301	136,016	0.907	111,079	0.131504	124,340	0.914		11.03%	11.94%	0.82%
S. J. 29-6	262	83,538	0.0888712	92,748	0.913	76,257	0.090279	85,361	0.920		11.03%	11.94%	0.82%
S. J. 29-6	260	10,955	0.0116544	12,163	0.914	10,011	0.011852	11,207	0.921		11.03%	11.94%	0.82%
TOTAL		939,990	1	1,043,624		844,678	1	945,523			11.03%	11.94%	

** All volumes and BTU values assume a 14.73 Pressure Base.

CDP1094.WK3

ALLOCATION EXAMPLE

29-6 #4 CPD NOVEMBER, 1994

07-Feb-95

UNIT	WELL #	METERED GAS VOLUME (mcf)	VOLUME RATIO	ALLOCATED GAS VOLUME (mcf)	MEASURED WELL BTU VALUE	METERED MMBTU's	MMBTU RATIO	ALLOCATED MMBTU	ALLOCATED WELL BTU VALUE		VOLUME DIFFERENCE (%)	MMBTU DIFFERENCE (%)	WELL BTU VALUE DIFFERENCE (%)
29-6 #4 CPD	CPD	965,269			0.906	874,534							
S. J. 29-6	203	143,185	0.1578701	152,387	0.903	129,239	0.160479	140,345	0.921		6.43%	8.59%	2.04%
S. J. 29-6	205	21,611	0.0238274	23,000	0.895	19,351	0.024029	21,014	0.914		6.43%	8.59%	2.04%
S. J. 29-6	208	73,816	0.0813866	78,560	0.903	66,627	0.082732	72,352	0.921		6.43%	8.59%	2.04%
S. J. 29-6	209	79,446	0.087594	84,552	0.887	70,489	0.087527	76,546	0.905		6.43%	8.59%	2.04%
S. J. 29-6	210	26,719	0.0294593	28,436	0.894	23,898	0.029675	25,951	0.913		6.43%	8.59%	2.04%
S. J. 29-6	211	18,347	0.0202287	19,526	0.893	16,391	0.020353	17,800	0.912		6.43%	8.59%	2.04%
S. J. 29-6	236	58,822	0.0648548	62,602	0.883	51,949	0.064507	56,413	0.901		6.43%	8.59%	2.04%
S. J. 29-6	240	103,486	0.1140995	110,137	0.882	91,289	0.113355	99,133	0.900		6.43%	8.59%	2.04%
S. J. 29-6	241	63,497	0.0700093	67,578	0.873	55,428	0.068826	60,191	0.891		6.43%	8.59%	2.04%
S. J. 29-6	242	44,227	0.0487629	47,069	0.889	39,331	0.048838	42,711	0.907		6.43%	8.59%	2.04%
S. J. 29-6	246	39,797	0.0438786	42,355	0.887	35,310	0.043845	38,344	0.905		6.43%	8.59%	2.04%
S. J. 29-6	258	123,661	0.1363437	131,608	0.876	108,327	0.134512	117,635	0.894		6.43%	8.59%	2.04%
S. J. 29-6	262	89,665	0.0988611	95,428	0.886	79,464	0.098672	86,292	0.904		6.43%	8.59%	2.04%
S. J. 29-6	260	20,701	0.0228241	22,031	0.881	18,240	0.022649	19,807	0.899		6.43%	8.59%	2.04%
TOTAL		906,980	1	965,269		805,332	1	874,534			6.43%	8.59%	

* All volumes and BTU values assume a 14.73 Pressure Base

PHILLIPS PETROLEUM COMPANY
FARMINGTON AREA

UNIT	WELL #	PIPELINE WATER	TRUCKED WATER	SWD LOCATION
CPD #4 29-6				
S. J. 29-6	203		X	29-6 SWD
S. J. 29-6	205		X	29-6 SWD
S. J. 29-6	208		X	29-6 SWD
S. J. 29-6	209		X	29-6 SWD
S. J. 29-6	210		X	29-6 SWD
S. J. 29-6	211		X	29-6 SWD
S. J. 29-6	236		X	29-6 SWD
S. J. 29-6	240		X	29-6 SWD
S. J. 29-6	241		X	29-6 SWD
S. J. 29-6	242		X	29-6 SWD
S. J. 29-6	246		X	29-6 SWD
S. J. 29-6	258		X	29-6 SWD
S. J. 29-6	262		X	29-6 SWD
S. J. 29-6	260		X	29-6 SWD

October 19, 1994

PHILLIPS PETROLEUM COMPANY
San Juan Basin, New Mexico
Off-Lease Measurement of Gas Applications

STATEMENT: The allocation meters are calibrated and gas samples are collected in accordance with Onshore Oil and Gas Order No. 5.

MECHANICAL INTEGRITY

All lines downstream of the meter runs on the individual well locations to the CPDs have been pressure tested with either water or nitrogen. The lines were pressured to 750 psi and held overnight.

Estimate of Blowdown Volume

Dakota Formation

Assumptions: Ideal Gas Law ($z = 1$)
$2\frac{3}{8}$" Tubing at 7200 ft
Pressure = 350 psig
Temperature = Constant 60°
Two Tubing Volumes for Blowdown
Average Blowdown = 8 minutes

$P_1 V_1 = P_{sc} V_{sc}$

$P_1 = 364$ psia

$P_{sc} = 14.7$ psia

$V_1 = 2(7200')(.0217\ ft^3/ft)$
$= 312\ ft^3$

$V_{sc} = \left(\frac{364}{14.7}\right)(312) = 7726\ ft^3 \approx 7.7$ MCF

7.7 MCF in 8 minutes $\approx$ **1 MCF/Min**

Dakota Formation = 1.0 MCF/Min

LEH

3/16/95

Estimate of Blowdown Volumes
Mesa Verde & Fruitland Sand Formations

Assumptions: Ideal Gas Law ($Z = 1$)
2 3/8" Tubing at 6000 ft.
Pressure = 300 psig
Temperature = Constant 60°
Two Tubing Volumes for Blowdown
Averge Blowdown = 8 minutes

$P_i V_i = P_{sc} V_{sc}$

$P_i = 314$ psia

$P_{sc} = 14.7$ psia

$V_i = 2(6000')(.0217\ ^{ft^3}/_{ft})$

$= 260\ ft^3$

$V_{sc} = \left(\frac{314}{14.7}\right)(260) = 5554\ ft^3 \approx 5.6$ MCF

5.6 MCF in 8 minutes = **0.7 $^{MCF}/_{Min}$**

Mesa Verde & Fruitland Sand = 0.7 $^{MCF}/_{Min}$

LEH

3/16/95

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

GARY E. JOHNSON
GOVERNOR

JENNIFER A. SALISBURY
CABINET SECRETARY

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178 FAX: (505) 334-6170

April 10, 1995

COPY

Mr Ed Hasely
Phillips Petroleum Company
5525 Hwy 64 NBU 3004
Farmington NM 87401

Re: 29-6 #4 CPD

Dear Mr. Hasely:

As per Rule 403.C. your application for the approval of the allocation method to be used at the referenced CPD is hereby approved.

Sincerely,

Frank T. Chavez, Supervisor District III

FTC/sh