ABOVE THIS LINE FOR DIVISION USE ONLY

#### NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -

# **ADMINISTRATIVE APPLICATION COVERSHEET**

		THIS COVE	RSHEET IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS
Applica	ation Acr	3-2HQ] (4)	[NSP-Non-Standard Proration Unit] [NSL-Non-Standard Location] [DD-Directional Drilling] [SD-Simultaneous Dedication]  Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]  C-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement)  [WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]  [SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]  Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]
[1]	TYPE	OF AI [A]	PPLICATION - Check Those Which Apply for [A]  Location - Spacing Unit - Directional Drilling  NSL NSP DD DSD  LOCATION DIVISION
		Check [B]	One Only for [B] or [C] Commingling - Storage - Measurement  DHC DCTB DPC DOLS DOLM
		[C]	Injection - Disposal - Pressure Increase - Enhanced Oil Recovery  ☐ WFX ☐ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR
[2]	NOTE	FICAT [A]	ION REQUIRED TO: - Check Those Which Apply, or ☐ Does Not Apply ☐ Working, Royalty or Overriding Royalty Interest Owners
		[B]	Offset Operators, Leaseholders or Surface Owner
		[C]	☐ Application is One Which Requires Published Legal Notice
		[D]	Notification and/or Concurrent Approval by BLM or SLO U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office
		[E]	For all of the above, Proof of Notification or Publication is Attached, and/or,
		[F]	Waivers are Attached
[3]	INFO	RMAT	ION / DATA SUBMITTED IS COMPLETE - Statement of Understanding
Regula	tions of	the Oil	or personnel under my supervision, have read and complied with all applicable Rules and Conservation Division. Further, I assert that the attached application for administrative and complete to the best of my knowledge and where applicable, verify that all interest (WI,

Note: Statement must be completed by an individual with supervisory capacity.

RI, ORRI) is common. I further verify that all applicable API Numbers are included. I understand that any omission of data, information or notification is cause to have the application package returned with no action

Ted A. Tiston Print or Type Name

taken.

Signature

O.u. Masage

1-11-97 Date

# DISTRICT I

Operator

P.O. Box 1980, Hobbs, NM 88241-1980 DISTRICT IL

811 South First St., Artesia, NM 88210-2835

DISTRICT III 1000 Rio Brazos Rd., Aztec, NM 87410-1693

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TYPE OR PRINT NAMETed A. Tipton

#### State of New Mexico Energy, Minerals and Natural Resources Department

Form C-107-A New 3-12-96

NO

#### OIL CONSERVATION DIVISION

2040 S. Pacheco Santa Fe, New Mexico 87505-6429

	APPROVAL	PROC	ESS:
X	Administrative		Hearing
	EXISTING V	VELLB	ORE

1-16.97

Date

325-4397

APPLICATION FOR DOWNHOLE COMMINGLING NM 87401 FOUR STAR OIL AND GAS COMPANY 3300 N. Butler Ave., Suite 100 Farmington Address

R03W T25N **RIO ARRIBA** 17 C W ROBERTS 9 G Well No Unit Ltr. - Sec - Twp - Rge Lease Spacing Unit Lease Types: (check 1 or more) OGRID No. Property Code API No. 3003924957 Federal x State (and/or) Fee Upper Intermediate The following facts are submitted in support of downhole commingling: Zone Zone Basin Fruitland Blanco PC South Pool Name and Coal 71629 72439 Pool Code 3662'-3768' Top and Bottom of 3802'-3846' Pay Section (Perforations) Type of Production Gas Gas (Oil or Gas) Method of Production Flowing Flowing ( Flowing or Artifical Lift) (Current) Bottomhole Pressure a. 327 psig Oil Zones - Artifical Lift: (ave. offset well) **Estimated Current** Gas -Oil - Flowing: (Original) Measured Current 434.9 psig 449.46 psig All Gas Zones: (from offset well) Estimated Or Measured Original Oil Gravity (\*API) or 1153 btu/cu ft 1156 btu/cu ft Gas BTU Content (from offset well) Producing or Shut-in? not yet completed Producing Production Marginal? (yes or no) yes yes Date Date: If Shut-in, give date and oil/gas/ water rates of last producton Rates Rates Rates Note: For new zones with no production history applicant shall be required to attach production estimates and supporting data 12/15/96 Date Date: If Producing, give date and oil/gas/ Rates: not yet Rates: 16 MCFD Rates water rates of recent test completed 0 BWPD ( within 60 days) Gas Gas: Oil: Oil: Gas Oil: Fixed Percentage Allocaton % % Formula - % for each zone % If allocation formula is based upon something other than current or past production, or is based on some other method, submit attachmments with supporting data and/or explaining method and providing rate projections or other required data. Are all working, overriding, and royalty interests identical in all commingled zones? 10. No If not, have all working, overriding, and royalty interests been notified by certified mail? No Have all offset operators been given written notice of the proposed downhole commingling No No If yes, are fluids compatible, will formations not be damaged, will any c 11. Will cross-flow occur? Yes flowed production be recovered, and will the allocation formulla be reliabl Yes (If No, attach explanation) Are all produced fluids from all commingled zones compatible with each other X\_Yes \_\_\_ No 12. 13. Will the value of production be decreased by commingling? Yes \_ ∧ No (If Yes, attach explanation If this well is on, or communitized with, state or federal lands, either the Commissioner of Public Lands or the United States Bureau of Land Management has been notified in writing of this applicati X Yes \_\_\_\_\_No 15. NMOCD Reference Cases for Rule 303(D) Exceptions: ORDER NO(S). ATTACHMENTS: \*C-102 for each zone to be commingled showing its spacing unit and acreage dedication. Exhibit IA \* IB \*Production curve for each zone for at least one year. (If not available, attach explanation.) Exhibit II. \*For zones with no production history, estimated production rates and supporting data. Exhibit IIIA, IIIB, \$ IIIC \*Data to support allocation method or formula. Exhibit IV \*Notification list of all offset, operators. Exhibit \*Notification list of all working, overriding, and royalty interest for uncommon interest cases. \*Any additional statements, data, or documents required to support commingling. Exhibit III I hereby certify that the information above is true and complete to the best of my knowledge and belief.

Title

Operating Unit Manager

Telephone

# State of New Mexico Energy, Minerais and Natural Resources Department

147

Form C-102 Revised 1-1-29

# OIL CONSERVATION DIVISION

P.O. Box 2088

Sama Fe. New Mexico 87504-2088 Exhibit IA

DISTRICT II P.O. Diswer DD, Astesia, NM 88210

DISTRICT | P.O. Box 1980, Hobbit, NM 88240

ISTRICTUM 200 Rio Brance R4	_ AZDC, NM 87410	WELL LOCATION All Distances must			_,,,,,	
persor			Leab			Well No.
	XACO			oberts	Const	9
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		and to the subject well by colored p			·	Acres
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# Exhibit IB

DISTRICT I

DISTRICT III

P.O. Box 1980, Hobbs, NM 88241-1980 DISTRICT II

P.O. Box Drawer DD, Artesia, NM 88211-071

1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV

P.O. Box 2088, Santa Fe, NM 87504-2088

#### State of New Mexico **Energy, Minerals and Natural Resources Department**

#### **OIL CONSERVATION DIVISION**

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

Form C-102 Revised February 10,199 Instructions on back Submit to Appropriate District Offic State Lease - 4 Copies

Fee Lease - 3 Copie

☐ AMENDED REPORT

#### WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number 3003924957	Pool Code 72439	<sup>3</sup> Pool Name BLANCO P. C. SOUTH (PRORATED GAS)	
Property Code 011208	·	erty Name ROBERTS	<sup>6</sup> Well No. 9
<sup>7</sup> OGRID Number 131994		ator Name AND GAS COMPANY	<sup>9</sup> Elevation 7273

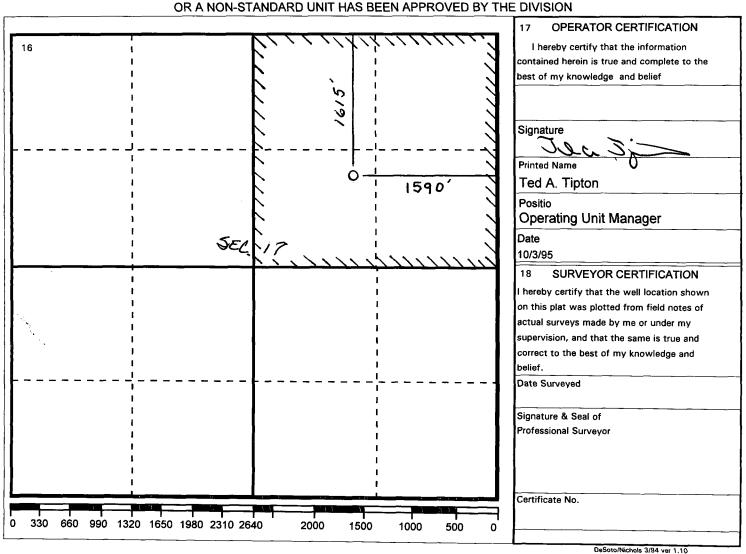
10 Surface Location

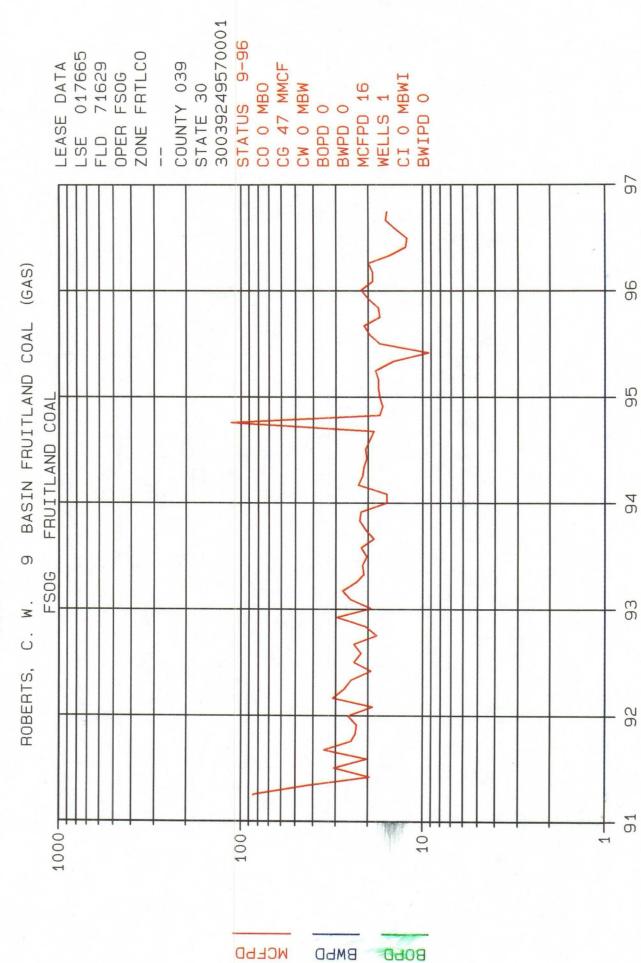
UI or lot no.	Section	Township	Range	Lot.ldn	Feet From The	North/South Line	Feet From The	East/West Line	County
G	17	T25N	R03W		1615	NORTH	1590	EAST	RIO ARRIBA

#### Bottom Hole Location If Different From Surface

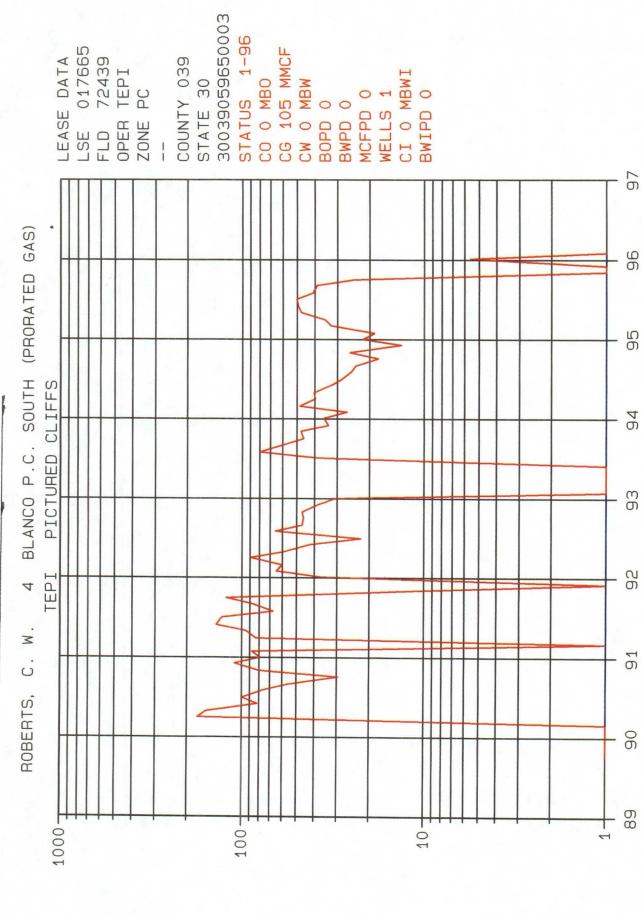
	Ul or lot no.	Section	Township	Range	Lot.ldn	Feet From	The	North/South Line	Feet From The	East/West Line	County
ŀ	<sup>2</sup> Dedicated	Acre	13 Joint or Infill No	14	Consolidatio	n Code	<sup>15</sup> Ord	der No.		<u> </u>	

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED





YEARS



MCFPD

ВМРО

B0PD

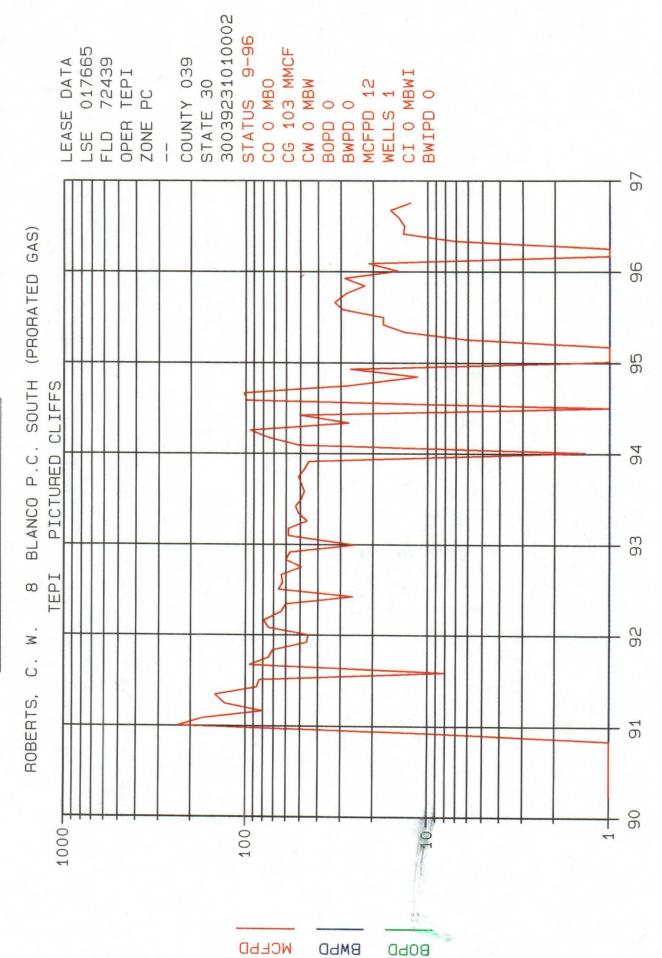
YEARS

MCFPD

ВМРО

**B0PD** 

YEARS



YEARS

# Exhibit IV

Current Fruitland C	Coal Production	Anticipated Picture	ed Cliffs Production
Oil, BOPD	0	Oil, BOPD	0
Water, BWPD	0	Water, BWPD	0
Gas, MCFD	16	Gas, MCFD	100

The combined production from both zones is expected to be 116 MCFD, 0 BOPD and 0 BWPD.

Using out <u>anticipated</u> PC production rate, allocation factors will be calculated as follows:

	Gas	<u>Oil</u>
Fruitland Coal	16/(16+100) = 14%	0
Pictured Cliffs	100/(16+100) = 86%	0

The <u>actual</u> production rate following the commingling process will be presented to the Aztec NMOCD office to arrive at proper allocation factors for splitting the production stream.

#### OFFSET OPERATORS FOR ROBERTS NO. 9 T-25-N, R-3-W RIO ARRIBA COUNTY, NM

#### (1) <u>SW/4-Section 7-25N-3W (Fruitland Coal formation)</u>

Dugan Production Corp. P.O. Box 420 Farmington, New Mexico 87499-0420

Standard Silver Corp. 309 Washington SE Albuquerque, New Mexico 87108

#### (2) <u>SE-Section 7-25N-3W</u> (Fruitland Coal formation)

Minel, Inc. 309 Washington SE Albuquerque, New Mexico 87108

(3) <u>SW/4-Section 8-25N-3W (Fruitland Coal/Pictured Cliffs formation); SE/4-Section 16-25N-3W (Fruitland Coal/Pictured Cliffs formation)</u>

Schalk Development Co. P.O. Box 25825 Albuquerque, New Mexico 87125

Martha Rouse Schalk, Trustee P.O. Box 25825 Albuquerque, New Mexico 87125

John E. Rouse Trust P.O. Box 408 Cheyenne, Wyoming 82003

(4) <u>SE/4-Section 8-25N-3W (Fruitland Coal/Pictured Cliffs formation); SE/4-Section 9-25N-3W (Fruitland Coal/Pictured Cliffs formation)</u>

Meridian Oil Production, Inc. P.O. Box 4289 Farmington, New Mexico 87499-4289

(5) NE/4-Section 16-25N-3W (Fruitland Coal formation); NW/4-Section 16-25N-3W (Fruitland Coal/Pictured Cliffs formation)

James E. Rogers 2525 Gateway West El Paso, Texas 79903

SENDER:  Complete items 1 and/or 2 for additional services.  Complete items 3, 4a, and 4b.		I also wish to receive the following services (for an	
Print your name and address on the reverse of this form so that v card to you.		extra fee):	ģ
Attach this form to the front of the mailpiece, or on the back if spe permit.		1. Addressee's Address	Ž
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6. Signature: (Addressee or Agent)  X PS Form 3811, December 1994  SENDER:  Complete items 1 and/or 2 for additional services.  Complete items 3, 4a, and 4b.  Print your name and address on the reverse of this form so that card to you.  Attach this form to the front of the mailpiece, or on the back if sp permit.  Write "Return Receipt Requested" on the mailpiece below the art The Return Receipt will show to whom the article was delivered delivered.  3. Article Addressed to:  MINEL, INC. 309 WASHINGTON SE	We can return this ace does not icle number. and the date  4a. Article N  4b. Service  Register  Express Return Re  7. Date of D  8. Addresse	elivery  e's Address (Only if requested is paid)  Domestic Return Receip  I also wish to receive the following services (for an extra fee):  1.  Addressee's Address 2.  Restricted Delivery Consult postmaster for fee.  Restricted Delivery Consult postmaster for fee.  Illumber 3 379 493  Type  ed	Than
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6. Signature: (Addressee or Agent)  X	We can return this ace does not icle number. and the date  4a. Article N  4b. Service  Register  Express Return Re  7. Date of D  8. Addresse	elivery  e's Address (Only if requested is paid)  Domestic Return Receip  I also wish to receive the following services (for an extra fee):  1.  Addressee's Address 2.  Restricted Delivery Consult postmaster for fee.  Restricted Delivery Consult postmaster for fee.  Illumber 3 379 493  Type  ed	eturn Receipt Service.

Domestic Return Receipt

PS Form **3811**, December 1994

Domestic Return Receipt

PS Form 3811, December 1994

SENDER:  Complete items 1 and/or 2 for additional services.  Complete items 3, 4a, and 4b.  Print your name and address on the reverse of this form so that we card to you.  Attach this form to the front of the mailpiece, or on the back if space permit.  Write 'Return Receipt Requested' on the mailpiece below the article "The Return Receipt will show to whom the article was delivered ar delivered.  3. Article Addressed to:  MERIDIAN OIL PRODUCTION, INC. PO BOX 4289  ALBUQUERQUE, NM 87499-4289		I also wish to receive the following services (for an extra fee):
permit.  Write *Return Receipt Requested* on the mailpiece below the article.		1. Addressee's Address
The Return Receipt will show to whom the article was delivered and		2. Restricted Delivery
delivered.	T	Consult postmaster for fee.
3. Article Addressed to:	4a. Article N	
MERIDIAN OIL PRODUCTION, INC. PO BOX 4289	4b. Service	Гуре
ALBUQUERQUE, NM 87499-4289	☐ Registere	ed <b>X</b> Certified
	☐ Express I	Mail Insured
	Return Red	ceipt for Merchandise
	7. Date of De	alivery - 24-97
5. Received By: (Print Name)		s's Address (Only if requested
6. Signature: (Addressee or Agent)  X UCL H. Dee		
PS Form <b>3811</b> , December 1994		Domestic Return Receipt
SENDER:  Complete items 1 and/or 2 for additional services.  Complete items 3, 4a, and 4b.  Print your name and address on the reverse of this form so that we card to you.  Attach this form to the front of the mailpiece, or on the back if space permit.  Write 'Return Receipt Requested' on the mailpiece below the article The Return Receipt will show to whom the article was delivered and delivered.  3. Article Addressed to:  JAMES E ROGERS 2525 GATEWAY WEST EL PASO, TX 79903	e can return this	I also wish to receive the following services (for an extra fee):
Attach this form to the front of the mailpiece, or on the back if space	ce does not	1. Addressee's Address
permit.  Write "Return Receipt Requested" on the mailpiece below the artic		2.  Restricted Delivery
The Return Receipt will show to whom the article was delivered ar delivered.	nd the date	Consult postmaster for fee.
3. Article Addressed to:	4a. Article N	umber 553 379 493
JAMES E ROGERS	4b. Service	Туре
2525 GATEWAY WEST EL PASO, TX <i>7</i> 9903	☐ Registere	ed Certified
BELLASO, 1A 17703	☐ Express	
<u> </u>	Return Re	ceipt for Merchandise  COD
	7. Date of D	
5. Received By: (Print Name)	8. Addresse and fee is	e's Address (Only if requested paid)
6. Signature: (Addressee or Agent)		

PS Form **3811**, December 1994

Domestic Return Receipt



#### Texaco Exploration and Production Inc

3300 N Butler Farmington NM 87401

January 16, 1997

#### **Dugan Production Corp.**

P. O. Box 420

Farmington NM 87499-0420

Re: Downhole Commingle

C. W. Roberts No. 9

1615' FNL & 1590' FEL, Sec. 17-T25N-R3W, Unit G

Rio Arriba County, New Mexico

#### Gentlemen:

As offset operator to the spacing unit for the referenced well, you are being notified of our request for an exception to NMOCD Rule 303-A. Four Star Oil and Gas Company proposes to downhole commingle the Basin Fruitland Coal and the Blanco P. C. South pools within the above referenced well.

If you have no objection to the above application please sign the waiver at the bottom of this letter and return it to this address. If you desire to submit remarks concerning this application, please send them to Mr. William J. LeMay, Director, New Mexico Oil Conservation Division, 2040 S. Pacheco, Santa Fe, New Mexico, 87505-6429. A copy of any remarks to undersigned would be appreciated. If no objection is received within 20 days of receipt of this letter, the Director may approve the proposed application. Your attention to this matter is greatly appreciated.

If you have any questions concerning this matter please contact Mr. Mark R. Reinhold at 505-325-4397 ext. 19.

Sincerely,

Ted A. Tipton

Operations Unit Manager

MRR/s

Attachments

cc: file

FARMINGTON AREA
TAT JMY |
RH MGB |
LNS REW BRH |
JAN 2 2 1997

Waiver Approval:

Company:

DUGAN PRODUCTION CORP.

DV.

homas A. Dugan

resident

DATE:

ー人の・

97



#### Texaco Exploration and Production Inc 3300 N Butler Farmington NM 874U1 FARMINGTON AREA TAT JMY anuary 16, 1997 RH MGB LNS Standard Silver Corp. RDW BRH 309 Washington SE Albuquerque, NM 87108 FEB - 3 1997 Re: Downhole Commingle C. W. Roberts No. 9 JLS

TLD

RETURN TO

1615' FNL & 1590' FEL, Sec. 17-T25N-R3W, Uni RSS

Rio Arriba County, New Mexico

#### Gentlemen:

As offset operator to the spacing unit for the referenced well, you are being notified of our request for an exception to NMOCD Rule 303-A. Four Star Oil and Gas Company proposes to downhole commingle the Basin Fruitland Coal and the Blanco P. C. South pools within the above referenced well.

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Sincerely,

Ted A. Tipton

Operations Unit Manager

MRR/s

Attachments

cc: file

Waiver Approval:

DATE: 1/2-9/97



#### Texaco Exploration and Production Inc

3300 N Butler Farmington NM 87401

# FARMINGTON AREA January 16, 1997 TAT JAY RH MGB LNS RDW FEB JUST FEB - 3 1997 MRR JLS RFS TLD BAB FILE TRB RETURN TO

## Minel, Inc.

309 Washington SE Albuquerque, NM 87108 Re: Downhole Commingle

C. W. Roberts No. 9

1615' FNL & 1590' FEL, Sec. 17-T25N-R3W, Unit G

Rio Arriba County, New Mexico

#### Gentlemen:

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Sincerely,

Ted A. Tipton

Operations Unit Manager

Jeazi

MRR/s

Attachments cc: file

Waiver Approval:

a 20

BY: Jack Caylar

DATE: 1/59 1997



#### Texaco Exploration and Production Inc

3300 N Butler Farmington NM 87401

January 16, 1997

James E. Rogers

2525 Gateway West El Paso, Texas 79903

Re: Downhole Commingle

C. W. Roberts No. 9

1615' FNL & 1590' FEL, Sec. 17-T25N-R3W, Unit G

Rio Arriba County, New Mexico

#### Gentlemen:

As offset operator to the spacing unit for the referenced well, you are being notified of our request for an exception to NMOCD Rule 303-A. Four Star Oil and Gas Company proposes to downhole commingle the Basin Fruitland Coal and the Blanco P. C. South pools within the above referenced well.

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Sincerely,

Ted A. Tipton

Operations Unit Manager

MRR/s

Attachments cc: file

. ....

Waiver Approval:

 $BY \cdot$ 

DATE:

MAR - 3 1997

MRR | JLS | RFS | TLD | BAB | RSD | PILE

RETURN TO

**FARMINGTON AREA** 

ZMY

MGB

TAT

RH

Aulira Title

97\_\_\_\_

Form 3160-5

# **UNITED STATES** DEPARTMENT OF THE INTERIOR

**FORM APPROVED** 

BUREAU O	F LAND MANAGEMENT	Budget Bureau No. 1004-0135 Expires: March 31, 1993
•••••	ES AND REPORTS ON WELLS drill or to deepen or reentry to a different reservoir.	5. Lease Designation and Serial No. SF 079600
•	FOR PERMIT" for such proposals	6. If Indian, Alottee or Tribe Name
SUB	MIT IN TRIPLICATE	7. If Unit or CA, Agreement Designation
1. Type of Well: OIL GAS WELL	OTHER	8. Well Name and Number C W ROBERTS
2. Name of Operator FOUR STAR OIL	AND GAS COMPANY	9
3. Address and Telephone No. 3300 N. Butler Av	e., Suite Farmington NM 87401 325-4397	9. API Well No. 3003924957
4. Location of Well (Footage, Sec., T., R., M., or St Unit Letter G: 1615 Feet From T	rvey Description) The NORTH Line and 1590 Feet From The	10. Field and Pool, Exploratory Area BASIN FRUITLAND COAL (GAS)
EAST Line Section 17	Township T25N Range R03W	11. County or Parish, State RIO ARRIBA , NM
Check Appropriate	e Box(s) To Indicate Nature of Notice, Re	eport, or Other Data
TYPE OF SUBMISSION	T	PÉ OF ACTION
	Abandonment	Change of Plans
	Recompletion	New Construction
Notice of Intent	Plugging Back	Non-Routine Fracturing
Subsequent Report	Casing Repair	Water Shut-Off
Final Abandonment Notice	Atlering Casing	Conversion to Injection
	OTHER: ADD P.C.	Dispose Water
		(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log Form.)
13 Describe Proposed or Completed Operations (Cl	early state all portinent details, and give portinent detag inclu	ding actionstad data of starting any proposed work

#### FOUR STAR OIL & GAS CO. REQUESTS APPROVAL ON THE FOLLOWING:

TO ADDITIONALLY COMPLETE THE PICTURED CLIFFS FORMATION AND DOWNHOLE COMMINGLE WITH EXISTING FRUITLAND PRODUCTION. PLEASE REFER TO ATTACHED PROCEDURE AND WELLBORE DIAGRAM FOR DETAILS. DOWNHOLE COMMINGLE HAS BEEN APPLIED FOR WITH THE N.M.O.C.D., APPLICATION ATTACHED.

14. I hereby certify that the foregoing is true and correct , SIGNATURE	1	TITLE	Operating Unit Manager	DATE	1/15/97
TYPE OR PRINT NAME	Ted A. Tipton				
(This space for Federal or State office use)					
APPROVED CONDITIONS OF APPROVAL, IF ANY:	TITLE		D/	ATE	

If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work,)\*.

#### Workover Procedure

- Insure that a BLM Sundry has been approved and any stipulations of approval are adhered to. Inspect and repair rig dead man anchors as needed.
- 2. MIRU well service unit. NDWH. NUBOP.
- 3. Retrieve plunger. Kill well with 2% Kcl water if necessary. POOH with 3738' of 2-3/8" production tubing.
- 4. RU wireline service. Perforate the following Pictured Cliffs intervals with 4 JSPF, Schlumberger HEGS, w/90 degree phasing:

<b>#</b> .	<u>Interval</u>	Net ft	<u># holes</u>		
1.	3804′-20′	16′	64		
2.	3840'-46'	6'	24		

Total = 22' net, 42' gross, 88 holes.

- 5. RIH with 2-3/8" tbg, Guiberson Uni III and Guiberson Uni VI packers. Straddle Fruitland Coal perforations (3662'-3768') by setting the Uni VI packer at 3780' and the Uni III at 3600'.
- 6. RU Dowell. Pressure up backside to 500 psi and monitor. Fracture stimulate PC perfs down 2-3/8" tbg with 15,800 gals 50 quality stable foamed gel and 52,700 lbs brady sand according to the attached Dowell frac schedule. Under flush by 2-3 barrels. If Nolte plot net pressure is stable, taper down rate during flush to assist tip screenout and minimize fluid momentum at final shut down. Obtain ISIP, then begin immediate flow back at 1 BPM in order to "force close" the fracture. Flow back at 1-2 BPM until gel has broken as per pre-job test then go wide open in order to utilize the nitrogen to help bring back load. Shut-in for the night.
- 7. Swab/flow using nitogen to help recover load. Release packers and POOH. RIH with hydrostatic bailer and clean out sand to PBTD at 3895'. Set 2-3/8" production string at 3825'with seating nipple on bottom for receiving a plunger bumper spring. Swab until flow is established. Place well back on line.
- NDBOP, NUWH, RD well service unit. Notify EA to file subsequent sundry. Evaluate production for automatic plunger lift system.

MRR 1/7/97

Capacities:

Burst:

2-3/8", 4.7#, J-55 tbg	0.1624 gals/ft (0.00387 Bbls/ft)	7,700 psi $(80\% = 6,120 \text{ psi})$
2-7/8", 6.5#, J-55 tbg	0.2431 gals/ft (0.00579 Bbls/ft)	7,264 psi $(80\% = 5,811 \text{ psi})$
5-1/2", 15.5#, K-55 csg	0.9996 gals/ft (0.0238 Bbls/ft)	4,810 psi $(80\% = 3,848 \text{ psi})$
2-3/8" x 5-1/2", 15.5# annulus	0.7686 gals/ft (0.0183 Bbls/ft)	4,810 psi (80% = 3,848 psi)



# C. W. ROBERTS No. 9

PROPOSED COMPLETION

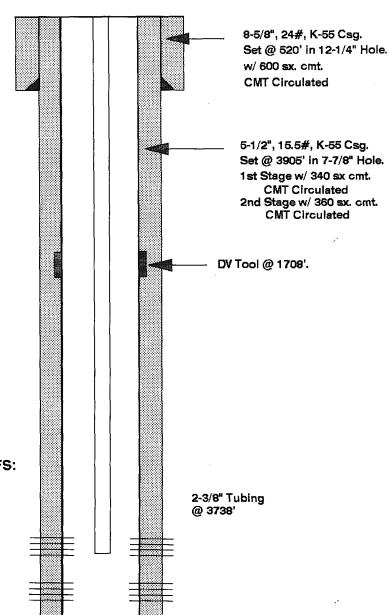
#### LOCATION:

1615' FNL & 1590' FEL, Unit G SW/4,NE/4, Sec. 17, T25N, R3W Rio Arriba County

SPUD DATE: 1/03/91 COMPL. DATE: 1/31/91 ELEVATION: 7286' KB 7273' GR

#### **FORMATION TOPS:**

B/Ojo Alamo 3492' T/Fruitland 3594' Fruitland Coals 3662' Pictured Cliffs 3768'



## FRUITLAND COAL PERFS:

3662' - 3666'

3668' - 3673'

3678' - 3689'

3697' - 3702'

3704' - 3707'

3762' - 3768'

# PROPOSED PERFS PICTURED CLIFFS:

3804' - 3820' 3840' - 3846'

PBTD - 3895'

# TEAACO EXPLORATION & PRODUCTION 3701 E. MAIN FARMINGTON, NM. 87409 (505) 326-2657

Source: METER RUN Report Date: 04/08/1996

Station #: 191-135 Sample Date: 4/5/96

Station Name: C. W. ROBERTS #9 Flowing Pressure: 47 psig

Field: FRUITLAND Flowing Temp.: 63 F

Method: c:\ezchrom\methods\cqmwet.met

File: c:\ezchrom\chrom\135.2

#### Gas Analysis by Chromatograph

Name	Mole %	BTU	SG	GPM
Nitrogen	0.357	0.000	0.003	
Methane	88.519	896.110	0.490	
CO2	0.128	0.000	0.002	
Ethane	5.929	105.162	0.062	1.586
propane	3.123	78.760	0.048	0.861
i-Butane	0.602	19.622	0.012	0.197
n-Butane	0.680	22.235	0.014	0.214
i-Pentane	0.262	10.507	0.007	0.096
n-Pentane	0.170	6.831	0.004	0.062
Hexanes	0.086	4.100	0.003	0.035
Heptanes	0.068	3.750	0.002	0.031
Octanes	0.048	3.366	0.002	0.027
	0.000	0.000	0.000	

Ideal Total 100.000 1150.621 0.649 3.109

Gross BTU/Real Cu. Ft. Gasoline Content
(@ 60 deg F, 14.730) Propane GPM = 0.861
Dry = 1153.888 Butane GPM = 0.411
Sat. = 1135.088 Gasoline GPM = 0.251
Actual = 1153.888 26# Gasoline GPM = 0.466
( 0.000 lbs. water/MMCF) Total GPM = 1.523

Real Specific Gravity Calculated = 0.6502 On-Site Specific Gravity = 0.0000

Gas Compressability = 0.9972

Remarks: FLOW RATE 51 MCF/D

# TEXACO EXPLORATION & PRODUCTION 3701 E. MAIN FARMINGTON, NM. 87409 (505) 326-2657

Source: METER RUN Report Date: 04/06/1996

Station #: 191-127 Sample Date: 4/5/96

Station Name: C. W. ROBERTS #7 Flowing Pressure: 61 psig

Field: PICTURE CLIFF Flowing Temp.: 75 F

Method: c:\ezchrom\methods\cqmwet.met

File: c:\ezchrom\chrom\127.2

#### Gas Analysis by Chromatograph

Name	Mole %	BTU	SG	GPM
Nitrogen	0.331	0.000	0.003	
Methane	88.298	893.873	0.489	•
CO2	0.131	0.000	0.002	
Ethane	6.037	107.078	0.063	1.615
H2S	0.050	0.319	0.001	
propane	3.191	80.475	0.049	0.879
i-Butane	0.603	19.654	0.012	0.197
n-Butane	0.719	23.510	0.014	0.227
i-Pentane	0.277	11.108	0.007	0.101
n-Pentane	0.187	7.514	0.005	0.068
Hexanes	0.094	4.481	0.003	0.039
Heptanes	0.058	3.199	0.002	0.027
Octanes	0.024	1.683	0.001	0.014
	0.000	0.000	0.000	

Ideal Total 100.000 1152.894 0.650 3.166

Gross BTU/Real Cu. Ft. Gasoline Content
(@ 60 deg F, 14.730) Propane GPM = 0.879
Dry = 1156.183 Butane GPM = 0.424
Sat. = 1137.345 Gasoline GPM = 0.248
Actual = 1156.183 26# Gasoline GPM = 0.475
( 0.000 lbs. water/MMCF) Total GPM = 1.551

Real Specific Gravity Calculated = 0.6517
On-Site Specific Gravity = 0.0000

Gas Compressability = 0.9972

Remarks: FLOW RATE 56 MCF/D

Calculated Bottomhole Pressure from Surface Pressure									
<u>Well</u>	<u>Date</u>		<u>S. G.</u>	<u>D</u>	PB				
C. W. Roberts #4	5/22/94	432	0.633	3690	468				
C. W. Roberts #7	10/9/95	251	0.6517	3809	274				
C. W. Roberts #8	9/15/94	220	0.6855	3672	240				
Average		301	0.6567	3724	327				



## 2600 E. Bloomfield flwy, Farmington, New Mexico 87401 Phone (505)327-0491 FAX# (505)327-4333

#### BOTTOM HOLE PRESSURE REPORT

CUSTOMER: Texaco

WELL NAME & NUMBER: C. W. Roberts #4

ELEMENT NUMBER: 51376 ELEMENT RANGE: 0-2000

DATE RAN: 06-20-92 DATE PULLED: 06-27-92

REMARKS: Instrument set at 3685'

DATE/TIME	PRESSURE	COMMENTS
06-20-92		
1218	299.5	Instrument on btm Well flowing
1300	299.5	Shut in well
1315	318.1	15 min. readings
1330	331.6	
1345	336.8	
1400	340.9	
1415	345.1	
1430	348.2	
1445	351.3	
1500	353.4	
1515	354.4	
1530	355.4	
1600	358.5	30 min. readings
1630	361.7	
1700	364.8	
1730	367.9	
1800	369.9	•
1830	372	
1900	374.1	
1930	375.1	
2000	377.2	
2100	380.3	1 hr. readings
2200	382.4	
2300	384.5	
2400	385.5	
06-21-92		
0100	387.6	
0200	388.6	
0300	390.7	
0400	391.7	
<b>9</b> 500	392.7	
	393.8	
0800	395.9	2 hr. readings

#### BOTTOM HOLE PRESSURE REPORT

DATE/TIME	Pressure	COMMENTS
06-21-92		
1000	397.9	2 hr. readings
1200	400	·
1400	401	
1600	403.1	
1800	404.1	
2000	405.1	
2200	406.2	
2400	407.2	
06-22-92		
0400	409.2	4 hr. readings
0800	411.3	
1200	413.3	
1600	414.4	
2000	415.4	
2400	416.4	
06-23-92		
0400	417.4	
0800	418.5	
1200	419.5	
1600	420.5	
2000	421.5	
2400	422.6	
06-24-92		
0800	423.6	8 hr. readings
1600	424.6	
2400	425.6	
26-25-92		
0800	426.7	•
1600	427.7	
2400	429.7	
06-26-92		
0800	431.8	
1600	432.8	
2400	433.8	
06-27-92	•	
0800	434.9	
1020	434.9	END OF TEST Start out of hole TBG 400#

COMPANY : TEXACO EXPLORATION & PRODUCTION INC.

PAGE : B

WELL NAME : C.W. ROBERTS #9

DATE : 05/21/91

WELL LOCATION : RIO ARRIBA COUNTY, NEW MEXICO

FILE REF: F126521.DAT

Date MM/DD	Time hh:mm:ss	Test Time hhhh.hhhh	Key Event	Pressure Psig	Temp Deg F	
5/14	11:52: 0	1.1667	INSTRUMENT @ 3730'	417.95	88.88	
5/14	13: 0: 0	2.3000	SHUT IN 240 HOURS	420.95	107.19	
5/14	23: 0: 0	12.3000	SHUT IN 250 HOURS	425.90	108.85	
5/15	9: 0: 0	22.3000	SHUT IN 260 HOURS	430.31	108.97	
5/15	19: 0: 0	32.3000	SHUT IN 270 HOURS	434.71	109.01	
5/16	5: 0: 0	42.3000	SHUT IN 280 HOURS	438.87	108.94	
5/16	15: 0: 0	52.3000	SHUT IN 290 HOURS	442.81	108.85	
5/17	1: 0: 0	62.3000	SHUT IN 300 HOURS	446.88	108.84	
- •	7: 0: 0	68.3000	SHUT IN 306 HOURS	449.28	108.86	
	7:16: 0	68.5667	INSTRUMENT OFF BOTTOM	449.46	108.86	

#### NORTHWEST NEW MEXICO PACKER-LEAKAGE TEST

Operator <u>TEXA</u>	COE&	P INC.				Lease	e C.W.ROB	ERTS	Well No	В
Location of Well: Unit	: <u> </u>		Sec. <u>17</u>	_ Twp	'25N	Rge	3W		County_RICARR	IIBA
	$\overline{}$		NAME OF RES	ERVOIR C	R POO	L	TYPE OF F		METHOD OF PROD. (Flow or Art. Lift)	PROD. MEDIUM (Tbg. or Csg.)
Uppe Complet	ion	, e	BLANCO PICT	URED CLI	FFS	7-	GAS		LOW	CSG.
Lowe Complet			BLANCO MES	AVERDE			GAS		FLOW	TBG.
			PRE-FL	OW SHU	JT-IN	PRESSURE D	DATA			
Uppe Completi		lour, Dat	shut-in	<del></del>		Length of time	shut-in		Si press. psig	Stablized (Yes or No)
Lowe	r H	lour, Dat	e shut—in			Length of time	shut-in		Si press. psig	Stabilized (Yes or No)
				F	LOW T	EST NO. 1				
Commenced	at (hour	, date)*					Zone produc	ing (Upp	er or Lower) LOWER	
TIME (hour,date)		D TIME	Upper Comp		RESSURE Lower completion		PROD. Z TEMP		REMA	RKS
9-8-94 9-9-94	24	. 170	450		740		NGTON A	PFA	BOTH ZONES SH	UTIN
9-10-94		HRS. HRS.	150 152		740 744	TAT RH	RDM L	- //-	<u>.</u>	•
9-11-94	721	HRS	162		746	LNS	ВЕН			
9-12-94	961	HRS.	180		748	NOV	1 1994	4		•
9-13-94	120	HRS	202		424	TE-1	JLW		UPPER SHUTIN LO	WER FLOW 24 HRS
9-14-94	144	HRS.	215		399	I TI	RFS FILE .		PER SHUTIN LOW	VER FLOW 24 HRS.
9-15-94	168	HRS.	220		408				J JPPER SHUTIN LOV	VER FLOW 24 HRS.
Production rate	during	test								
Oil	BOI	PD base	d on	E	Bbls. in _	Hours	)		aravGOR	
Gas	_ <del></del> _			MCFPD; T	ested th	ru (Orifice or Met	ter):			
				MID-FL	OW SI	HUT-IN PRES	SSURE DAT	ГА		

Upper Completion	Hour, Date shut-in	Length of time shut—in	Si press. psig	Stablized (Yes or No)
Lower Completion	Hour, Date shut-in	Length of time shut-in	Si press. psig	Stabilized (Yes or No)



Lower Completion Hour, Date shut-in

# OIL CONSERVATION DIVISION

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## NORTHWEST NEW MEXICO PACKER-LEAKAGE TEST

Operator <u>TEXA</u>	COE	& P INC.				L	<b>e</b> ase	C.W.ROBERTS	Well No7	
Location of Well: Unit	:J		_Sec1	7_ Twp	'25N	R	ge	3W .	County_RICARI	RIBA
			NAME OF RE	SERVOIR	OR POOL			TYPE OF PROD. (OIL OR GAS)	METHOD OF PROD (Flow or Art. Lift)	). PROD. MEDIUM (Tbg. or Csg.)
Uppe Complet			BLANCO PIC	TURED CI	LIFFS			GAS	FLOW	CSG.
Lowe Complete	r		BLANCO ME					GAS	FLOW	TBG.
			PRE-F	LOW SH	IUT-IN	PRESSURE	E D	ATA <sup>,</sup>		
Uppe Completi		Hour, Da	te shut-in			Length of ti	me s	hut-in	Si press. psig	Stablized (Yes or No)
Lowe	r	Hour, Da	te shut-in			Length of ti	me s	hutin	Si press. psig	Stablized (Yes or No)
					FLOW T	EST NO. 1				
Commenced	at (hou	ır, date)*			<del></del>	,		Zone producing (Up	oper or Lower)	
TIME (hour,date)		ED TIME NCE*	Upper Com		PRESSURE Lower completion		_	PROD. ZONE TEMP.	REMA	ARKS
10-5-95	2	4 HR\$.	190	)	0				BOTH ZONES SHUTIN LOWER LOGGED OFF	
6		HRS.	195		0					•
7		2 HRS 5 HRS.	199 218		0		4			
8	1	20 HR\$.	228		0					•
9	14	14 HRS. 18 HRS.	244 251		0	Ţ,				
10		2 HR\$.	158		0			,	UPPER FLOW 24HR LOWER ZONE LOGO	
11	24	OHRS.	147		0				UPPER FLOW 24 HI LOWER ZONE LOGO	
roduction rate	durina	ı test	_							
		=	d on		Bbls. in	Но	urs		Grav GOF	ì
Gas				-		u (Orifice or				
				MID-FI	.OW SH	UT-IN PR	RESS	SURE DATA	-	
Upper		lour, Date	shut-in			ength of tim			Si press. psig	Stabilized (Yes or No)
Completio	n i				į	-				

Length of time shut-in

Si press. psig

Stablized (Yes or No)

# OIL CONSERVATION DIVISION P.O. Box 2088 SANTA FE, NEW MEXICO 87501

. State of New Mexico ENERGY and MINERALS DEPT.

· · · · · · · · · · · · · · · · · · ·			IVERABILITY TEST R	EPORT FOR 1994			
POOL NAME BLANCO SO.		POOL SLOPE n= 0.85			COUNTY RIO ARRIBA		
COMPANY TEXACO E & P INC.			WELL NAME AND NUM C.W.ROBERTS # 4	BER			
UNIT LETTER M	SECTION 17	TOWNSHIP 25N	RANGE 3W	PURCHASING PIPELII EPNG	VE .		
CSG O.D INCHES	CSG I.D INCHES 4.892	SETTING DEPTH - F 8201	EET	TBG O.D INCHES 2.375	TBG I.D INCHES 1.995	TOP TBG PERF - F1 3696	
GAS PAY FROM 3680		WELL PRO	DUCING THROUGH TUBING X	GAS GRAVITY 0.663	GRAVITY X LENGTH 2450	I — — — — — — — — — — — — — — — — — — —	
FROM 5-16-94	DATE OF FLOW TEST TO	5-22-94	DATE SHUT-IN PRES 9-15-94	SURE MEASURED			
		PRESSURE	DATA - ALL PRESSU	RES IN PSIA			
(a) Flowing Csg Pressure (DWt) O	(b) Flowing Tbg Pressure (DWt) 142	(c) Flowing Meter Pressure (DWt) 120	(d) Flow Chart Static Reading 121	(e) Meter Error (Item c·Item d) -1	(f) Friction Loss (a-c) or (b-c) 22	(g) Avg. Meter Pressure (Intgr.) †20	
(h) Corr. Meter Pressure (g+e) 119	(i) Avg. Wellhead Press. Pt=(h+f) 141	(j) Sheer in Csg. Pressure (DWt) 0	(k) Shut in Tbg. Pressure (DWt) 432	(l) Pc=high value of (j) or (k) 432	(m) Del. Pressure Pd=% of Pc 60 259	(n) Sep/Dehy Pr. (DWt)if Crit. Flo	
	-1	FLOW RAT	E CORRECTION (METE	R ERROR)		I ————————————————————————————————————	
Integrated Volume	- MCF/D	(Item c/Item d)	(Item c/Item d)^0	0.5	Corrected Volume		
74		0.992	0.996		Q= 73.7	MCF/D	
		WORKI	NG PRESSURE CALCUL	ATION			
(1-e^(-s))	1000*(Fc*Qm)^2	$R^2 = (1-e^{-s})^*$	1000*(Fc*Qm)^2	Pt^2	Pw^2 = Pt^2 + R^2	Pw = (Pw^2)^0.5	
0.163	480.08	78.36		19881	19959	141.3	
		DELI	VERABILITY CALCULA	TION			
D = Q*[(Pc^2-Pd^2	)/(Pc^2-Pw^2)]^n = 73.69358	* [( 119439	/ 166665 )^n =	( 0.717 )^n = (	0.753 )] =	56 MCF/D	
REMARKS:							
	SUMMARY						
Item h	119	Psia	Company	TEXACO E	& P INC.		
Pc	432	Psia	Ву		cel D Bon	hori	
Q	74	MCF/D	Title	ENGINEER	ASSISTANT		
Pw	141	Psia	Witnesse	d By			
Pd	259	Psia .	Company	*******			
•	E 4	1105 15					

NMOGCC (3) Aztec - MLK - ARK