

4/21/98	5/11/98	DC	MW	DHC
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ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION
- Engineering Bureau -

ADMINISTRATIVE APPLICATION COVERSHEET

THIS COVERSHEET IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS

Application Acronyms:

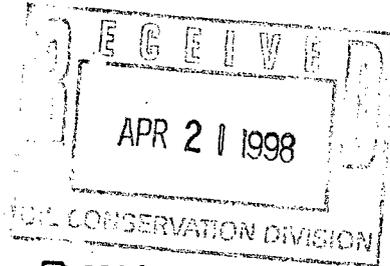
- [NSP-Non-Standard Proration Unit] [NSL-Non-Standard Location]
 [DD-Directional Drilling] [SD-Simultaneous Dedication]
 [DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
 [PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
 [WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
 [SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
 [EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

[1] TYPE OF APPLICATION - Check Those Which Apply for [A]

- [A] Location - Spacing Unit - Directional Drilling
 NSL NSP DD SD

Check One Only for [B] or [C]

- [B] Commingling - Storage - Measurement
 DHC CTB PLC PC OLS OLM
- [C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
 WFX PMX SWD IPI EOR PPR



[2] NOTIFICATION REQUIRED TO: - Check Those Which Apply, or Does Not Apply

- [A] 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] INFORMATION / DATA SUBMITTED IS COMPLETE - Statement of Understanding

I hereby certify that I, or personnel under my supervision, have read and complied with all applicable Rules and Regulations of the Oil Conservation Division. Further, I assert that the attached application for administrative approval is accurate and complete to the best of my knowledge and where applicable, verify that all interest (WI, 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 taken.

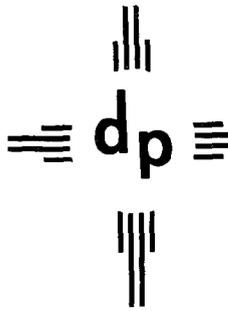
Note: Statement must be completed by an individual with supervisory capacity.

John Alexander
Print or Type Name

John Alexander
Signature

Vice-President
Title

4/18/98
Date



dugan production corp.

April 15, 1998

Ms. Lori Wrotenbery
New Mexico Oil Conservation Commission
2040 South Pacheco Street
Santa Fe, NM 87505

Re: Request for Administrative Approval to Downhole Commingle Gallup with Dakota and Mesa Verde
Mona Lisa No. 2
1620' fsl & 1850' fel, S.14-T.26N-R.7W, Rio Arriba Co., NM
API No. 30-039-25745

Dear Ms. Wrotenbery:

Dugan Production Corp. seeks administrative approval to downhole commingle the Ice Canyon Gallup with the already approved commingling of the Basin Dakota and Blanco Mesa Verde formations in this wellbore. In Case No. 11897, Order No. R-10963, Dugan Production Corp. was granted a 160 Acre spacing unit and permission to downhole commingle the Basin Dakota and Blanco Mesa Verde. The subject well has been drilled and cased. A review of open hole and mud logs revealed that the Gallup formation was hydrocarbon bearing in commercial quantities. The Gallup was not included in the original application because it's economic viability was unknown prior to drilling. The economic and efficient completion of all three zones will be best served by continuous operations. The supporting information attached will demonstrate that conservation is served and correlative rights are protected by your approval of this application.

Caulkins Oil is the only offsetting operator. They have been notified by certified mail of this application. The Bureau of Land Management has been notified of this application and their approval requested.

Sincerely,

John Alexander
Vice President

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

State of New Mexico
Energy, Minerals and Natural Resources Department

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

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

OIL CONSERVATION DIVISION

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

APPROVAL PROCESS:

Administrative Hearing

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

APPLICATION FOR DOWNHOLE COMMINGLING

EXISTING WELLBORE

YES NO

Operator Dugan Production Corp. Address P. O. Box 420, Farmington, NM 87499-0420

Lease Mona Lisa Well No. 2 Unit Ltr. - Sec - Twp - Rge J-14-26N-7W County Rio Arriba

OGRID NO. 006515 Property Code 21582 API NO. 30-039-25745 Spacing Unit Lease Types: (check 1 or more) Federal State (and/or) Fee

The following facts are submitted in support of downhole commingling:	Upper Zone DHC MV-R-10963	Intermediate Zone Subject Zone	Lower Zone DHC Dakota - R-10963
1. Pool Name and Pool Code	Blanco Mesaverde 72319	Ice Canyon Gallup 93235	Basin Dakota 71599
2. Top and Bottom of Pay Section (Perforations)	Approximately 4600'-4740'	Approximately 5730'-6000'	Approximately 6620'-6765'
3. Type of production (Oil or Gas)	Gas & Condensate	Gas & Condensate	Gas & Condensate
4. Method of Production (Flowing or Artificial Lift)	Flowing	Flowing	Flowing
5. Bottomhole Pressure Oil Zones - Artificial Lift: Gas & Oil - Flowing: All Gas Zones: Estimated Current Measured Current Estimated Or Measured Original	a. (Current) Not completed	a. Not completed	a. Not completed
	b. (Original) 1087 psia (est)	b. 1388 psia (est)	b. 2680 psia (est)
6. Oil Gravity (°API) or Gas BTU Content	1279 BTU/SCF (est)	1250 BTU/SCF (est)	1249 BTU/SCF (est)
7. Producing or Shut-In?	Not completed	Not completed	Not completed
Production Marginal? (yes or no)	Anticipated to be	Anticipated to be	Anticipated to be
* If Shut-In, give date and oil/gas/water rates of last production Note: For new zones with no production history, applicant shall be required to attach production estimates and supporting data * If Producing, give date and oil/gas/water rates of recent test (within 60 days)	Date: See R-10963 Rates: 74 MCFD + 0.6 BCPD (est)	Date: See attached Rates: 63 MCFD + 0.6 BCPD (est)	Date: See R-10963 Rates: 118 MCFD + 0.9 BCPD (est)
	Date: <u>3/13/98</u> Rates: <u>30 MCFD</u>	Date: Rates:	Date: <u>3/13/98</u> Rates:
8. Fixed Percentage Allocation Formula - % for each zone	Oil: 30 % Gas: 30 %	Oil: 25 % Gas: 25 %	Oil: 45 % Gas: 45 %

9. If allocation formula is based upon something other than current or past production, or is based upon some other method, submit attachments with supporting data and/or explaining method and providing rate projections or other required data.

10. Are all working, overriding, and royalty interests identical in all commingled zones? Yes No
If not, have all working, overriding, and royalty interests been notified by certified mail? Yes No
Have all offset operators been given written notice of the proposed downhole commingling? Yes No

11. Will cross-flow occur? Yes No If yes, are fluids compatible, will the formations not be damaged, will any cross-flowed production be recovered, and will the allocation formula be reliable. Yes No (If No, attach explanation)

12. Are all produced fluids from all commingled zones compatible with each other? Yes No

13. Will the value of production be decreased by commingling? Yes No (If Yes, attach explanation)

14. 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 application. Yes No

15. NMOCD Reference Cases for Rule 303(D) Exceptions: ORDER NO(S). R-10963, R-10239

16. ATTACHMENTS:
- * C-102 for each zone to be commingled showing its spacing unit and acreage dedication.
 - * Production curve for each zone for at least one year. (If not available, attach explanation.)
 - * For zones with no production history, estimated production rates and supporting data.
 - * Data to support allocation method or formula.
 - * Notification list of all offset operators.
 - * Notification list of working, overriding, and royalty interests for uncommon interest cases.
 - * Any additional statements, data, or documents required to support commingling.

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

SIGNATURE John Alexander TITLE Vice-President DATE 4/13/98

TYPE OR PRINT NAME John Alexander TELEPHONE NO. (505) 325-1821

Information in support of this application:

1. Operator:
Dugan Production Corp.
P.O. Box 420
Farmington, NM 87401
(505) 325-1821
Contact: John Alexander
2. Well:
Mona Lisa No. 2
1620' fsl & 1850' fel, S.14-T.26N-R.7W, Rio Arriba Co., NM
Lease No. NM 99002
API No. 30-039-25745
2. Order No. R-10963 granted commingling of the Basin Dakota and Blanco Mesa Verde formations in the Mona Lisa #2 wellbore.
3. The Ice Canyon Gallup proposed in this application is spaced 160 Acres in SE/4 S.14-T.26N-R.6W. Applicant is 100% working interest owner.
4. Caulkins Oil has recently completed an Ice Canyon Gallup in their Breech #377, located in M-23-26N-7W (API 30-039-25690), 1.2 miles Southwest of the Mona Lisa #2. The Breech #377 was not complete at the time the Mona Lisa #2 well application was being prepared. A seven (7) day shut-in casing pressure reported to the NMOCD was 1125 psi. The calculated Gallup bottom hole pressure at the Breech #377 well is 1388 psi. It is assumed that the Gallup will exhibit the same pressure in the Mona Lisa #2. In the order referenced in (1) above, the Dakota BHP was 2680 psi, and the Mesa Verde was 1087 psi. Correcting the Dakota BHP to the Gallup mid-perforation depth yields 2616 psi. The Gallup BHP is 53% of the higher pressured zone and as such qualifies under Rule 303C(vi). Correcting Gallup BHP to Mesa Verde mid-perforation depth yields 1338 psi. The Mesa Verde BHP is 81% of the higher pressured zone and so also qualifies under 303C(vi).
5. Caulkins reports that their Breech #377 Gallup well is being produced at approximately 300 MCFD with 1.5 BCPD. An average for area Gallup wells is 63 MCFD with .6 BCPD. This is marginal production for a well of this depth. Dugan's commingle application for the Dakota and Mesa Verde estimated production from those zones at 118 MCFD/0.9 BCPD and 74 MCFD/0.6 BCPD respectively. The ability to complete all three zones with one trip to the well will greatly reduce the completion costs and enhance economics of attempting a Gallup completion. Since the potential for a Gallup completion was unknown prior to drilling this well, the operator opted to run 5-1/2" casing. The small

tubing strings that would be required to complete as a dual or even worse a triple completion will not allow efficient operation of surface production facilities or facilitate liquid unloading. If a commingled configuration is approved, one 2-3/8" or 2-7/8" will be used, eliminating the operational problems noted above.

6. Average production from offsetting Gallup wells is 62.5 MCFD and .64 BCPD. Using this as initial production and the decline curve from the Universal Resources Lindrith 110E (C-10-26N-7W API 30-039-23134), estimated production from the Gallup formation is presented in the attached curve. The Lindrith 110E had more production history than other area Gallup wells and so provided the best model.
6. Order R-10239 allowed down hole commingling of the Basin Dakota, Ensenada Gallup, and Blanco Mesa Verde Pools. Burlington provided adequate evidence that fluids from all three zones were compatible and non-damaging. The proximity of these wells (approximately 4 miles SE) is confirmation of the fluid compatibility in the Mona Lisa 2 well.
7. Using a ratio of the daily estimated rates from each zone, the following allocation factors are recommended:

<u>Formation</u>	<u>Oil</u>	<u>Gas</u>
Dakota	45%	45%
Gallup	25%	25%
Mesa Verde	30%	30%

District I
 PO Box 1980, Hobbs, NM 88241-1980
 District II
 PO Drawer DD, Artesia, NM 88211-0719
 District III
 1000 Rio Brazos Rd., Aztec, NM 87410
 District IV
 PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
 Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
 PO Box 2088
 Santa Fe, NM 87504-2088

Form C-102
 Revised February 21, 1994
 Instructions on back
 Submit to Appropriate District Office
 State Lease - 4 Copies
 Fee Lease - 3 Copies

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30 039 25745		² Pool Code 93235		³ Pool Name Ice Canyon Gallup	
⁴ Property Code 21582		⁵ Property Name Mona Lisa			⁶ Well Number 2
⁷ OGRID No. 006515		⁸ Operator Name Dugan Production Corporation			⁹ Elevation 6121' Estimated

¹⁰ Surface Location

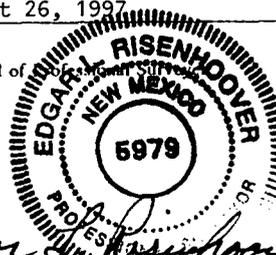
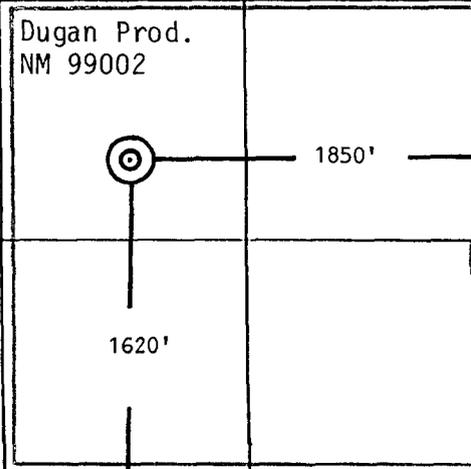
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
	14	26N	7W	J	1620	South	1850	East	Rio Arriba

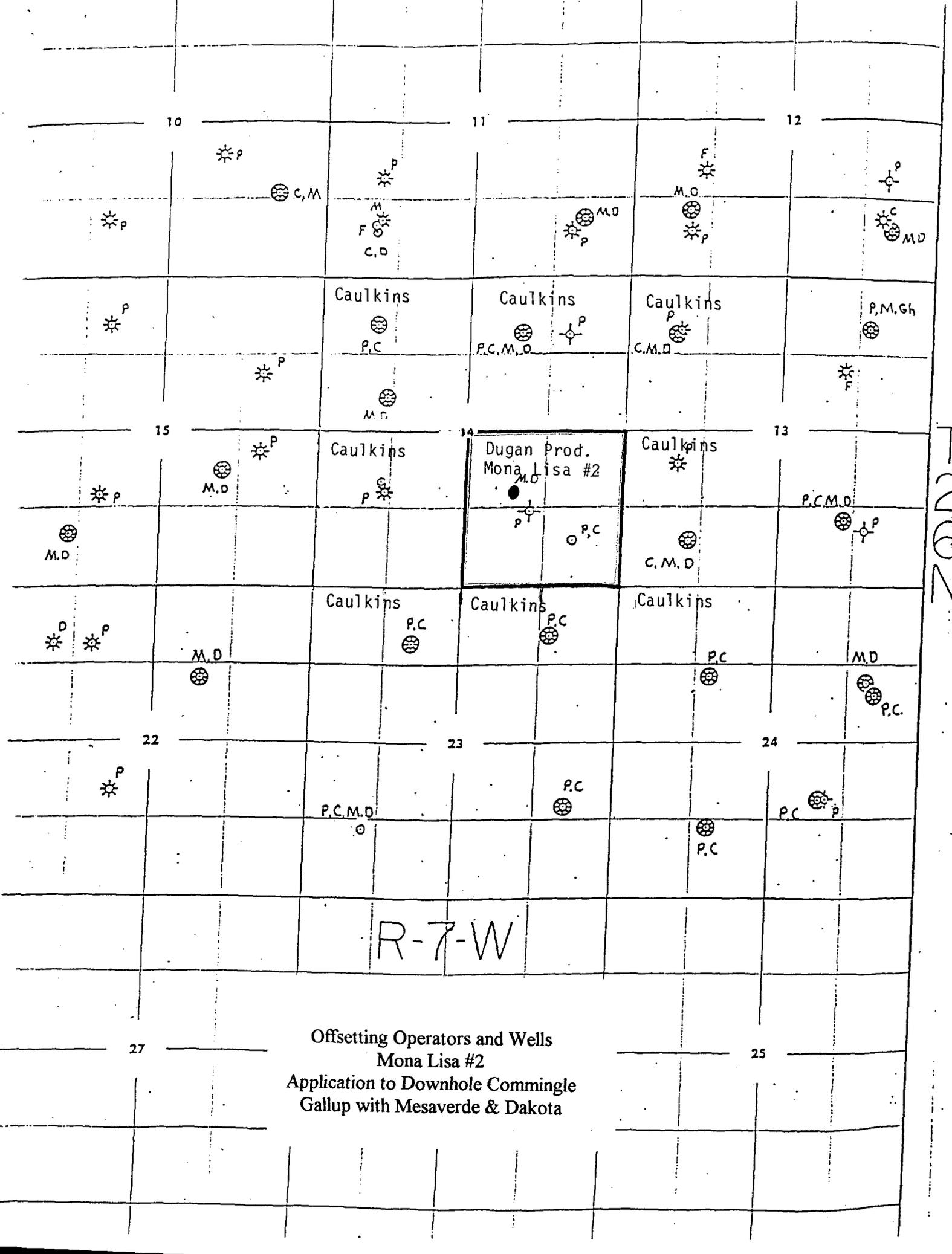
¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

¹² Dedicated Acres 160	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

16				<p>¹⁷ OPERATOR CERTIFICATION</p> <p><i>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief</i></p> <p><i>John Alexander</i> Signature John Alexander Printed Name Vice-President Title 4/13/98 Date</p>
				<p>¹⁸ SURVEYOR CERTIFICATION</p> <p><i>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</i></p> <p>August 26, 1997 Date of Survey Signature and Seal of  <i>Edgar L. Risenhoover</i> Certificate Number 5979</p>
			<p>Section 14</p> <p>Dugan Prod. NM 99002</p> 	



1202

Offsetting Operators and Wells
 Mona Lisa #2
 Application to Downhole Commingle
 Gallup with Mesaverde & Dakota

R-7-W

--QUICK BHP--

Calculate BHP and Z-factor from surface shut-in pressure

04/09/98

WELL NAME : Breech 377 - Gallup
GAS GRAVITY: 0.73 % N2 0.00
CONDENSATE (YES=1): 1 % CO2 0.00 %
RESERVOIR TEMP: 130 'F % H2S 0.00 %
SURFACE TEMP: 60 'F Pc = 662.34 %
DEPTH OF ZONE: 6,674 feet Tc = 389.80

SURFACE PRES	BHP	Z	BHP/Z
psia	psia		psia
1,125	<u>1,388</u>	0.8206	1,691

*BHP assumed for
MONG Lisa #2*

--QUICK BHP--

Calculate BHP and Z-factor from surface shut-in pressure

04/13/98

WELL NAME : Mona Lisa 2 Dakota @ Gallup mid-perf
GAS GRAVITY: 0.73 % N2 0.00
CONDENSATE (YES=1): 1 % CO2 0.00 %
RESERVOIR TEMP: 150 'F % H2S 0.00 %
SURFACE TEMP: 60 'F Pc = 662.34 %
DEPTH OF ZONE: 5,868 feet Tc = 389.80

SURFACE PRES	BHP	Z	BHP/Z
psia	psia		psia
2,154	2,616	0.8094	3,232

2
Dakota SI
Pressure

--QUICK BHP--

Calculate BHP and Z-factor from surface shut-in pressure

#####

WELL NAME : Mona Lisa 2 Gallup @ MV mid-perf
GAS GRAVITY: 0.73 % N2 0.00
CONDENSATE (YES=1): 1 % CO2 0.00 %
RESERVOIR TEMP: 150 'F % H2S 0.00 %
SURFACE TEMP: 60 'F Pc = 662.34 %
DEPTH OF ZONE: 4,670 feet Tc = 389.80

SURFACE PRES	BHP	Z	BHP/Z
psia	psia		psia
1,160	1,338	0.8469	1,579

This pressure from surface pressure calculated to give 1388
psi BHP for Gallup

Dugan Production Corp.
 Mona Lisa No. 2 (J--14-26N-R.7W)
 Production Average for Offsetting Gallup Wells

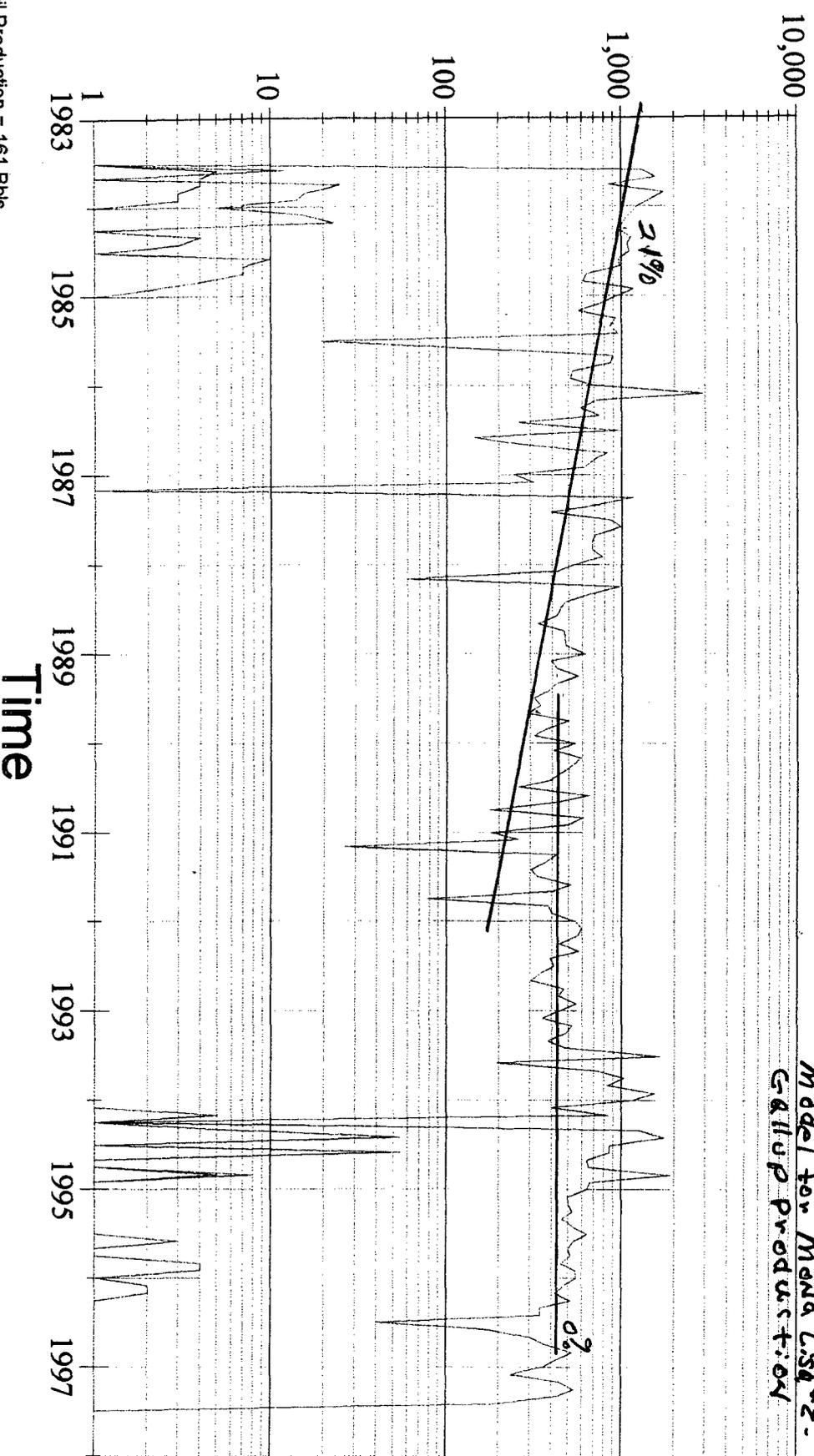
Operator	API	Lease	Well Nbr	Spot	Section	Township	Range	Initial Monthly Prod		Initial Daily Prod	
								MCFM	BCPM	MCFD	BCPD
UNIVERSAL RESOURCES	30-039-23134	LINDRITH	110E	C	10	26N	7W	1000	10	32.89	0.33
BURLINGTON RESOURCES	30-039-23923	VAUGHN	32M	D	29	26N	6W	400	20	13.16	0.66
BURLINGTON RESOURCES	30-039-21968	SANCHEZ A	2	L	20	26N	6W	7000	0	230.26	0.00
BURLINGTON RESOURCES	30-039-22264	VAUGHN	31	B	29	26N	6W	700	6	23.03	0.20
BURLINGTON RESOURCES	30-039-20371	VAUGHN	13	A	27	26N	6W	300	10	9.87	0.33
BURLINGTON RESOURCES	30-039-23937	KLEIN	28E	C	33	26N	6W	2000	70	65.79	2.30
Average Initial Monthly Rate								1900.00	19.33	62.50	0.64

Oil
Gas
Water
Wells

Field: LARGO
Lease: LINDRITH | Well #110E
Operator: UNIVERSAL RESOURCES CORPORATION
Production Rate vs Time
For the Period 01/1983 to 12/1997 | API: 30039231340000

Model for Mena Lisa #2 -
G&U P Production

BBI/Mo or Mcf/Mo

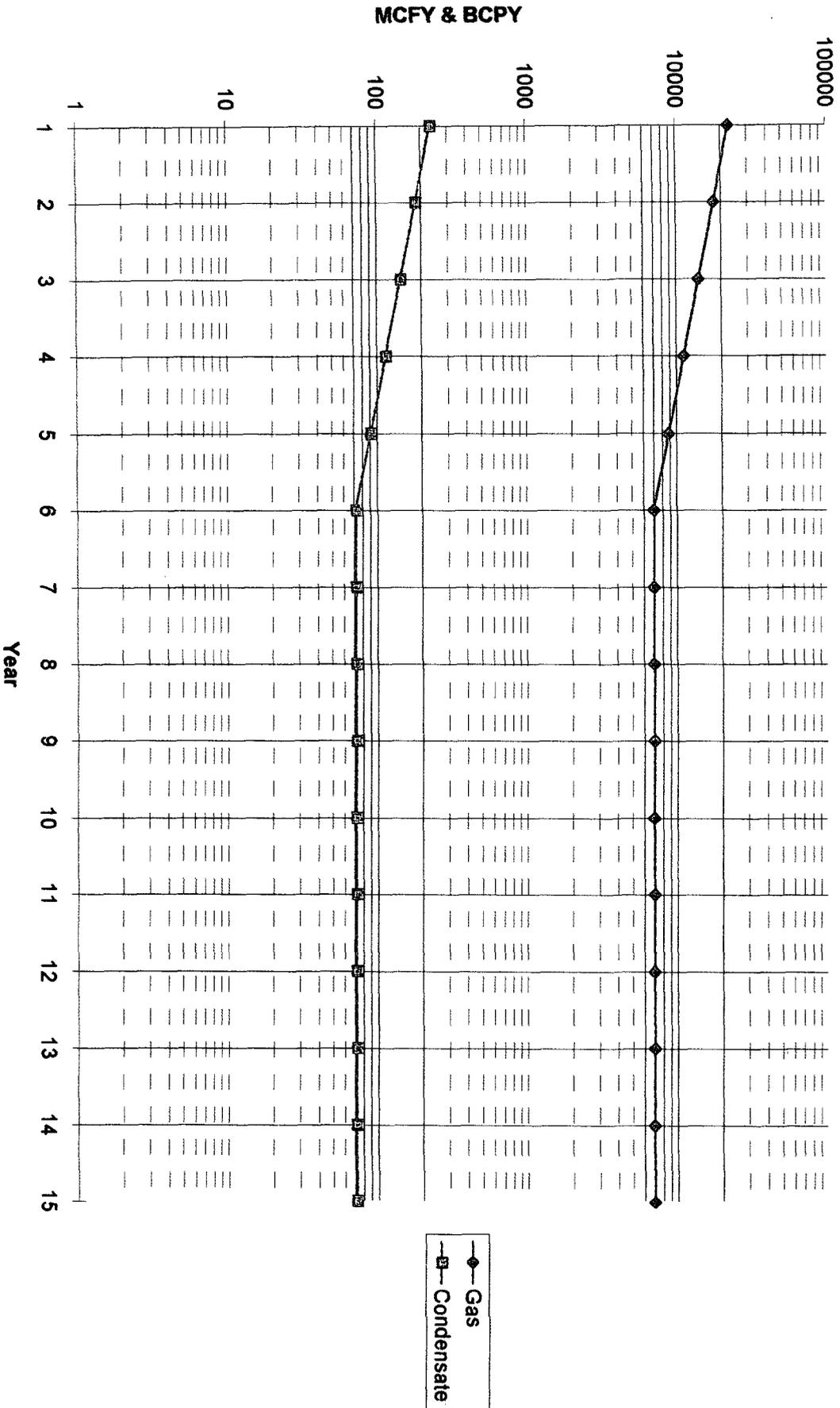


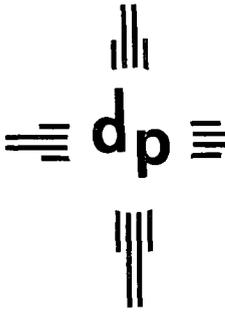
Reported Oil Production = 161 Bbls
Reported Gas Production = 102,159 Mcf
Reported Water Production = 190 Bbls

Time

Plot Displays Monthly Totals
Copyright (C) 1998 by Petroleum Information/Dwight LLC

Mona Lisa #2 - Gallup Projected Yearly Production





dugan production corp.



CERTIFIED MAIL - RETURN RECEIPT REQUESTED

April 15, 1998

Mr. Bobby Verquer
Caulkins Oil Co.
P.O. Box 340
Bloomfield, NM 87413

RE: Application to Down Hole Commingle Gallup with Dakota and Mesa Verde
Mona Lisa No. 2
1620' fsl & 1850' fel, S.14-T.26N-R.7W, Rio Arriba Co., NM
Lease No. NM 99002
API No. 30-039-25745
Request for Waiver

Dear Mr. Verquer:

Dugan Production requests that Caulkins Oil waive objection to it's application to commingle the Ice Canyon Gallup formation with the already approved commingling of the Dakota and Mesa Verde formations in the subject well. A complete application is attached for your review.

Please sign and return this waiver form in the included envelope. If you wish to object to this application, you must notify the New Mexico Oil Conservation Commission, 2040 South Pacheco Street, Santa Fe, NM 87505 within 20 days of receiving this notice.

Sincerely,

John Alexander

John Alexander
Vice President

Caulkins Oil Co. waives objection in the above matter.

Robert L. Verquer
Print Name

4-16-98
Date

Robert L. Verquer
Signature

4-16-98
Date

Is your RETURN ADDRESS completed on the reverse side?

Mona Lisa #2 - DHC Baller

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 can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

- 1. Addressee's Address
- 2. Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

*Mr. Bobby Terquer
Caultkins Oil Co.
P.O. Box 340
Sloomfield, NM 87413-0340*

4a. Article Number

P 358 627 126

4b. Service Type

- Registered Certified
- Express Mail Insured
- Return Receipt for Merchandise COD

7. Date of Delivery

4/16/98 C

5. Received By: (Print Name)

S.M. Feulmer

6. Signature: (Addressee or Agent)

X S.M. Feulmer

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, December 1994

102595-97-B-0179

Domestic Return Receipt

Thank you for using Return Receipt Service.

Is your RETURN ADDRESS completed on the reverse side?

Mona Lisa #2 - DHC Baller

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 can return this card to you.
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I also wish to receive the following services (for an extra fee):

- 1. Addressee's Address
- 2. Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

*Mr. Duane Spence
Bureau of Land Management
1235 La Plata Highway
Farmington, NM 87401*

4a. Article Number

P 358 627 125

4b. Service Type

- Registered Certified
- Express Mail Insured
- Return Receipt for Merchandise COD

7. Date of Delivery

5. Received By: (Print Name)

George

6. Signature: (Addressee or Agent)

X George

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, December 1994

102595-97-B-0179

Domestic Return Receipt

Thank you for using Return Receipt Service.