dugan production corp.

September 15, 1983

Joe D. Ramey
Oil Conservation Division
P O Box 2088
Santa Fe, NM 87501

RE: Request for Administrative Approval to Commingle Downhole
Bisti Gallup and Basin Dakota Fields
Dugan Production Corp.'s Mary Anne Well No. 3
Unit L, Sec. 9, T24N R9W, NMPM
Federal Lease No. NM 10089
San Juan County, NM

Dear Mr. Ramey:

We hereby request administrative approval to commingle production from the Gallup and Dakota formations within the well bore of the captioned well.

The Mary Anne #3 was spudded on December 22, 1982 and 4½" casing was cemented at 6409'. The Dakota formation was perforated 6328-42', acidized with 250 gal. 15% HCL and then fraced with 19,000 gal. gelled water and 24,000 lb. of 20/40 sand. The Gallup formation was perforated 4891-5365' with a total of thirty-three holes. The Gallup interval was then balled off and fraced using 52,000 gal. of slick water and 85,000 lb. of 20/40 sand.

Based upon our experience with other wells in this general area and the open hole log analysis, we anticipated marginal productivity from this well. Subsequent swab testing of the Gallup and Dakota resulted in a combined rate of approximately 35 BOPD, 40 BWPD and 160 MCFGPD and neither zone would flow. A pump unit has been installed and it is our plan to pump the well with the bottom hole pump approximately 6340'.

With reference to the attached map on which current daily production rates for Gallup and Dakota wells in the general area of the Mary Anne #3 are indicated, it can be seen that both horizons are of marginal productivity. The nearest Dakota completion with any substantial production history is located approximately two miles to the southwest. The Dakota is open for production approximately one half mile to the west and approximately three quarters of a mile to the south; however, it should be noted that these are both fairly new wells and that the Dakota is commingled with

the Gallup at both locations. The Dakota has recently been tested approximately one and one half miles to the northwest in Dugan Production Corp.'s Big Bird #1; however, this well is currently shut in awaiting a pipeline connection, having tested a rate of 110 MCFD at 15 psi FTP. The data regarding productivity in this area is very limited and as a result, we have utilized production data from Dakota wells as close as possible within a four mile radius of the well. With reference to the attached production graph, production data for six Dakota wells is presented and based upon our experience in the area, we have indicated the anticipated production forecast for the Dakota in the Mary Anne #3 as a dashed line. An an initial rate of 4300 MCF/mo. (141 MCFPD) will decline at an annual rate of 40% for two and one half years and then stabilize at 7%. The condensate will initially produce at 17.4 bbl./MMCF and average 13.9 bbl./MMCF over the life of the Dakota. Based upon an analysis and the open hole logs within the perforated interval 6328-42', a total of nine feet of pay, averaging 12.2% porosity and 45% water saturation exists; using volumetric calculations, reserves are approximately the same as would be indicated from the production performance projection, 260 MMCF. The bottom hole pressure in the Dakota was not measured; however, a measurement in the offsetting Holly #1, indicated the bottom hole pressure in the Dakota to be approximately 1400 psi.

With reference to the attached production map, it can be seen that the Gallup is the predominate producing horizon in the area and that we are on the edge of established production. The Gallup zone is also of fairly marginal productivity, as can be seen from the production rates and cummulatives of wells in the area. Because of marginal productivity, we again made use of production performance of six Gallup wells in the general area within a four mile radius in order to make a projection of anticipated production from the Gallup in the Mary Anne #3. This production data is presented on the same graph as was the Dakota data with our predicted performance of the Mary Anne #3 being indicated with a dashed line. As can be seen, we are predicting an initial rate of 290 BO/mo. (9.5 BOPD), declining at an annual rate of 40% for two years and stabilizing at 9%. The initial gas-oil ratio of 2500 SCF/BBL was determined from production performance of offsetting wells. Utilizing this production forecast, it is estimated that ultimate recovery from the Gallup will be 14,000 BO and 48.4 MMCFG. Analysis of the open hole logs over the 474' perforated interval, 4891-5365', indicates that a total of 56' of possible pay exists with an average porosity of 9.2%. A volumetric calculation using this data indicated reserves substantially higher than is practical for this area and therefore, reliance upon the predicted production forecast based reserves is necessary. The reserves for each zone and the percentage that each zone bears to the total are summarized as follows:

	Gallup	Dakota	Total
Gas	48.4 (16%)	260 (84%)	308.4 MMCF
Oil	14,000 (80%)	3,600 (20%)	17,600 Bbls.

We propose to use the above percentages, based upon ultimate recoveries, to allocate production between the two zones. With reference to the attached

production map, we have indicated six wells in the general area of the Mary Anne #3 which have previously been authorized to commingle the Gallup and Dakota production within the well bore. These six wells and their allocation formulations are summarized in Table #1. As can be seen, our proposed allocation factors based on ultimate recovery from each zone is consistent with the previously authorized allocation factors of the wells in this area.

The ownership, both working interest and royalty interest, of each zone is common since lease No. NM 10089 held by Dugan Production Corp. comprises all of section 9. The production unit for the Gallup is eighty acres, comprising the N/2 SW/4, while the Dakota production unit comprises the S/2 of section 9. We have attached a sketch on which the offsetting lease ownership is indicated.

Fluids from the Gallup and Dakota formations are compatible and based upon our experience with commingling the six other wells in this area, there will be no adverse effects to either formation as a result of commingling production within the well bore. The value of the commingled streams will be equal to the value of the individual streams; however, it should noted that neither zone will justify dual production equipment and should this commingling not be authorized, productivity from the Dakota will likely never be realized and thus, from a practical standpoint, the commingled stream will actually generate a higher revenue than will producing the individual zones separately.

In summary, production from the Gallup and Dakota in the Mary Anne #3 is anticipated to be fairly marginal and thus, it is requested that Dugan Production Corp. be permitted to commingle production in the well bore. It is our belief that the requested commingling will result in increased recoveries of hydrocarbons from this lease and will not violate correlative rights.

Should you have any questions regarding this application, please feel free to contact us.

By copy of this letter we have notified the Bureau of Land Management of our proposed commingling. We have also notified the offsetting operators by separate letter, a copy of which is attached.

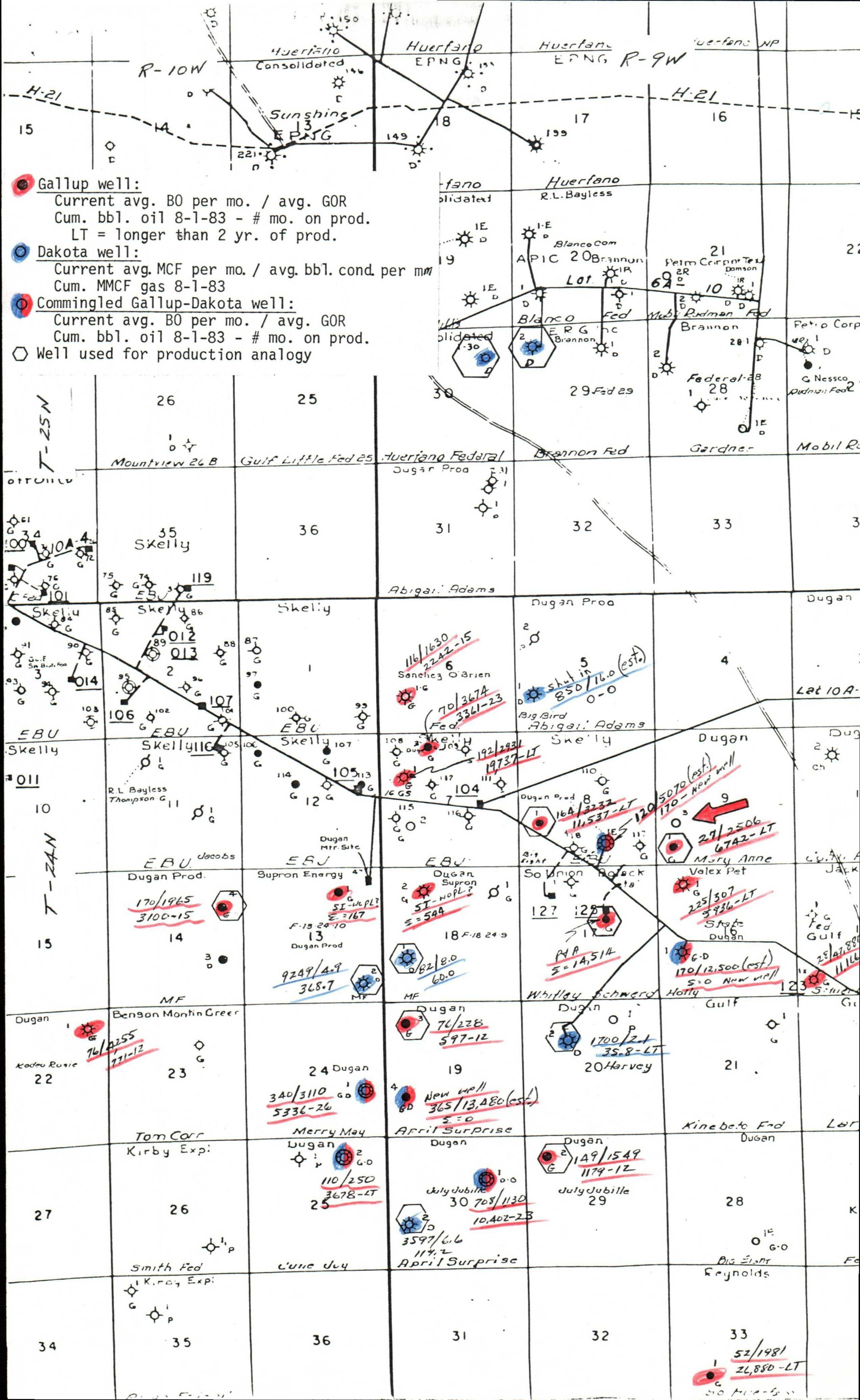
Sincerely,

John O. Roe

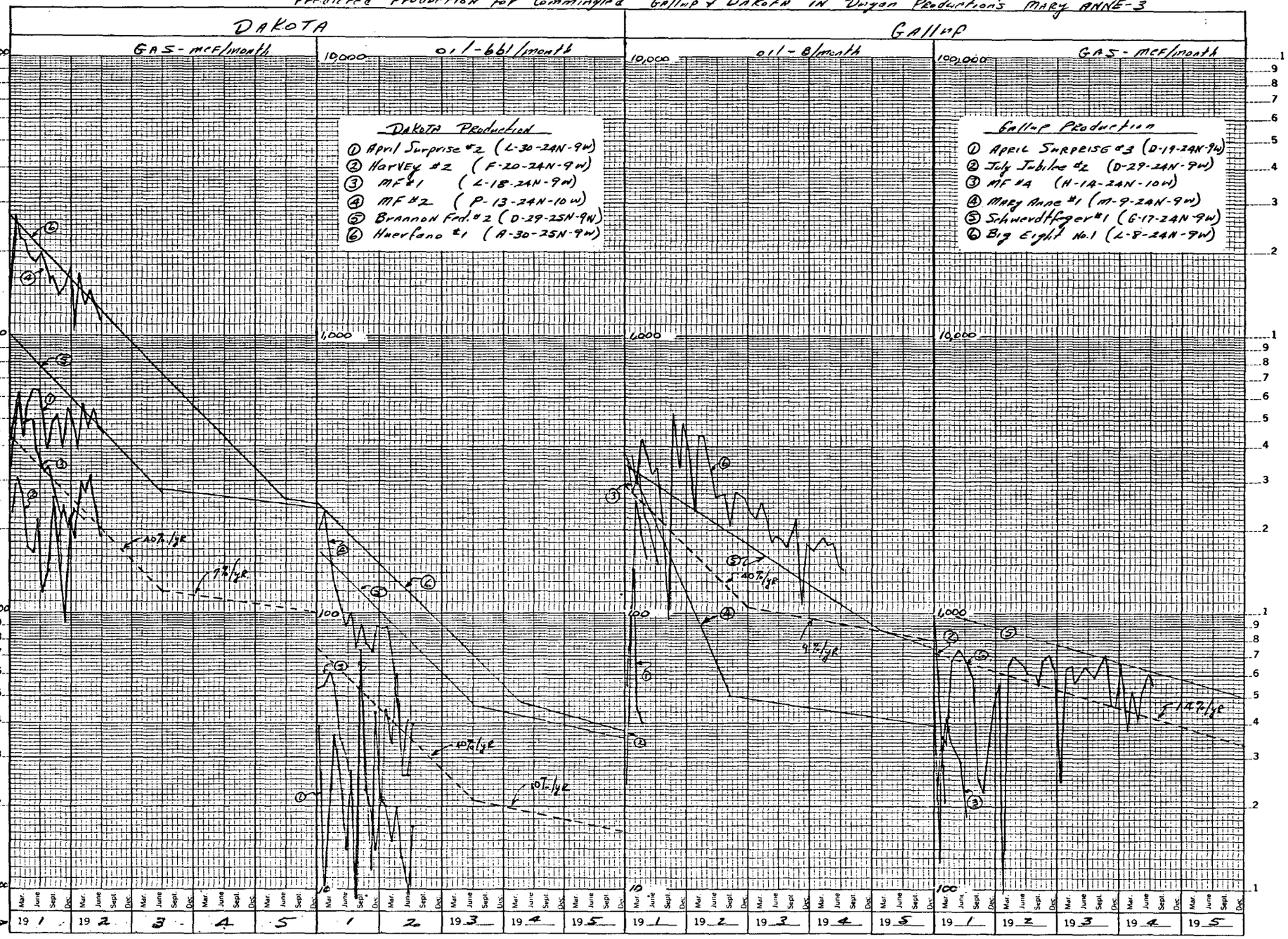
John Roe
Petroleum Engineer

JDR:fp
Attachments

cc: Frank Chavez, NMOCD, Aztec, NM
BLM, Farmington, NM


Gallup well:
Current avg. BO per mo. / avg. GOR
Cum. bbl. oil 8-1-83 - # mo. on prod.
LT = longer than 2 yr. of prod.
Dakota well:
Current avg. MCF per mo. / avg. bbl. cond. per mm
Cum. MMCF gas 8-1-83
Commingled Gallup-Dakota well:
Current avg. BO per mo. / avg. GOR
Cum. bbl. oil 8-1-83 - # mo. on prod.
Well used for production analogy
R-10W
R-9W
T-25N
T-24N
H-21
Huerfano Consolidated
Huerfano EPNG
Huerfano R.L. Bayless
Sunshine EPNG
Blanco Com
Brannon Fed
Mobil Rodman Fed
Federal-28
Gardner
Mountview 26 B
Gulf Little Fed 25
Huerfano Federal
Dugan Prod
Skelly
EBU
Abigail Adams
Sanchez O'Brien
Big Bird
Mary Anne
Valex Pet
State
Dugan Mtr. Site
Supron Energy
Benson Montin Greer
Rodeo Rosie
Merry May
April Surprise
Whitley Schwerd
Holly
Gulf
20 Harvey
Kinebeto Fed
Tom Carr
Kirby Expl
July Jubilee
Smith Fed
June Joy
Reynolds
116/1630
2242-15
70/3674
3361-23
shut in
850/16.0 (est.)
0-0
192/2931
19737-LT
164/3232
11,537-LT
5070 (est.)
170 - New well
27/2506
6742-LT
170/1965
3100-15
SI-NoPL?
Σ=167
Σ=544
9249/4.9
368.7
82/8.0
60.0
P&A
Σ=14,514
225/307
5936-LT
170/12,500 (est.)
Σ=0 New well
76/228
597-12
1700/2.1
35.8-LT
76/2255
771-12
340/3110
5336-26
New well
365/13,480 (est.)
Σ=0
110/250
3678-LT
149/1549
1179-12
708/1130
10,402-23
3597/6.6
114.2
52/1981
21,880-LT

Predicted production for Commingled Gallup & Dakota in Dugan Production's MARY ANNE-3



47 6840

K&E 20 YEARS BY MONTHS X 3 LOG CYCLES
KEUFFEL & ESSER CO. MADE IN U.S.A.

Table No. 1

Allocation Factors for Commingled Gallup-Dakota Wells

Operated by Dugan Production Corp.

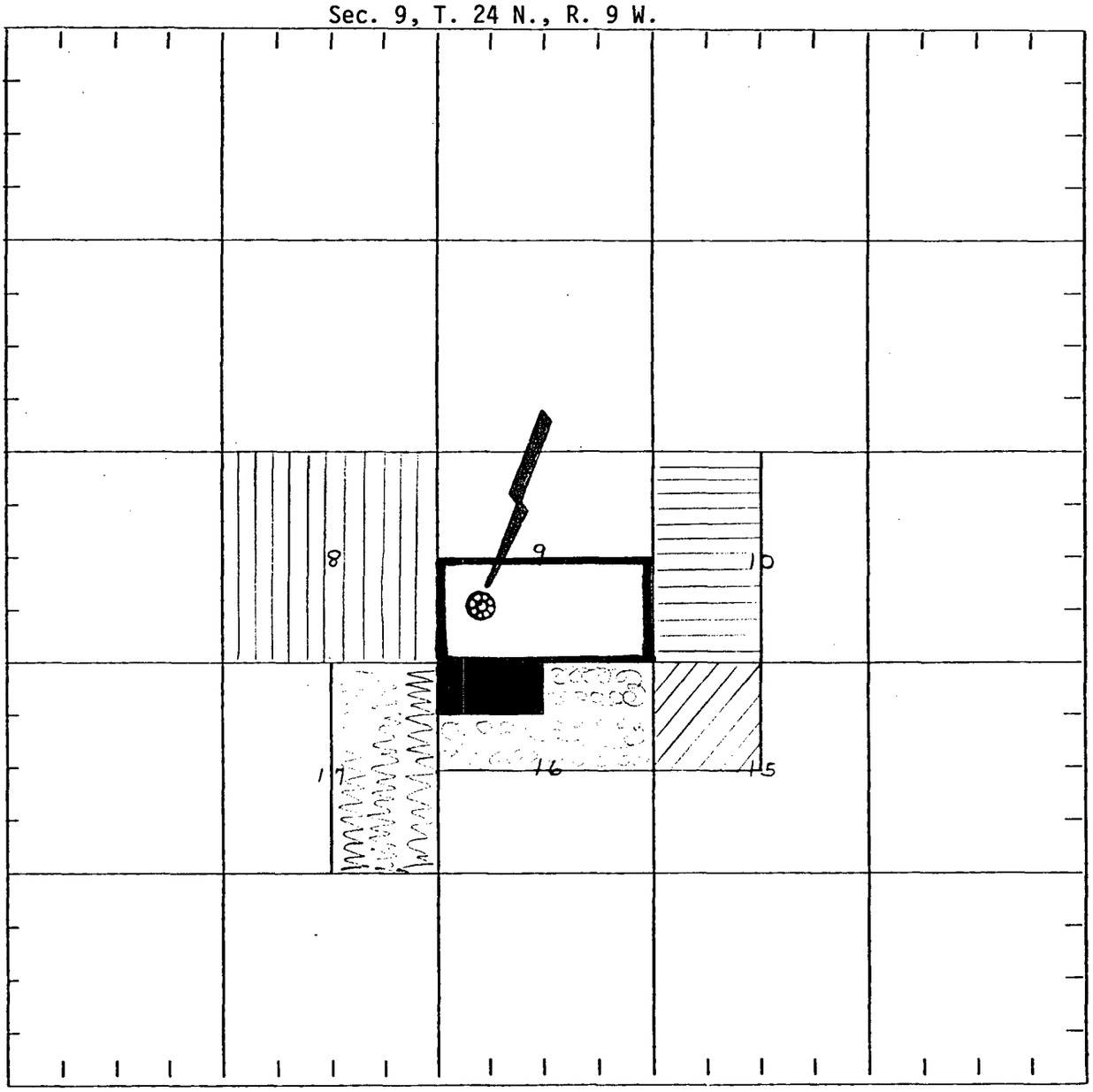
Township 24 North, Ranges 8 and 9 West
San Juan County, New Mexico

		April Surprise #4 R-7210	Holly #1 R-7143	Merry May #1 R-6571	July Jubilee #1 R-6826	June Joy #2 R-6396*	Big Eight #1E R-6825
Oil							
	Gallup	85%	95%	85%	90%	80%	90%
	Dakota	15%	5%	15%	10%	20%	10%
Gas							
	Gallup	15%	80%	15%	10%	80%	13%
	Dakota	85%	20%	85%	90%	20%	87%

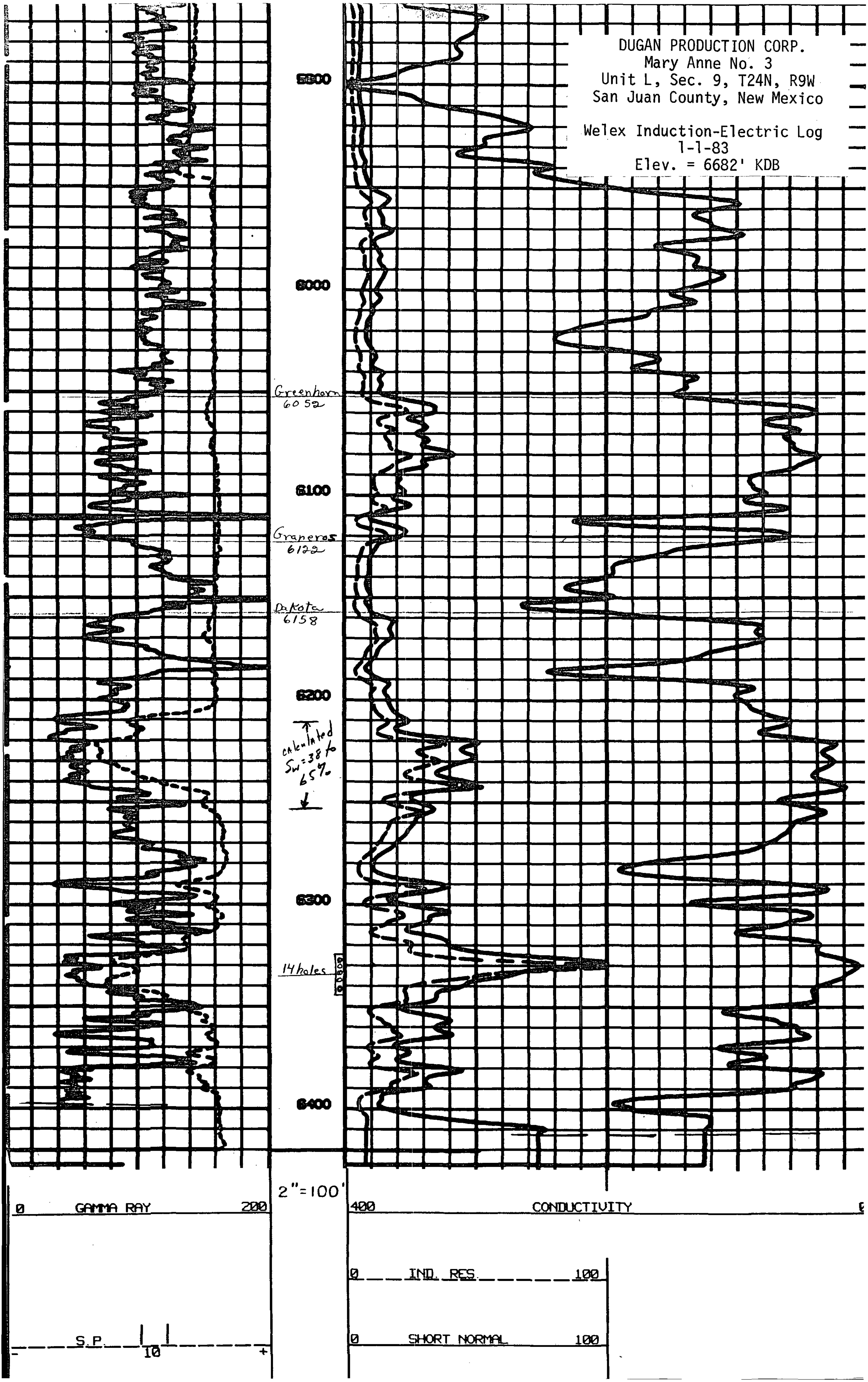
*Allocation factors in the order are transposed from that which was testified at the hearing. We are working to get this resolved.

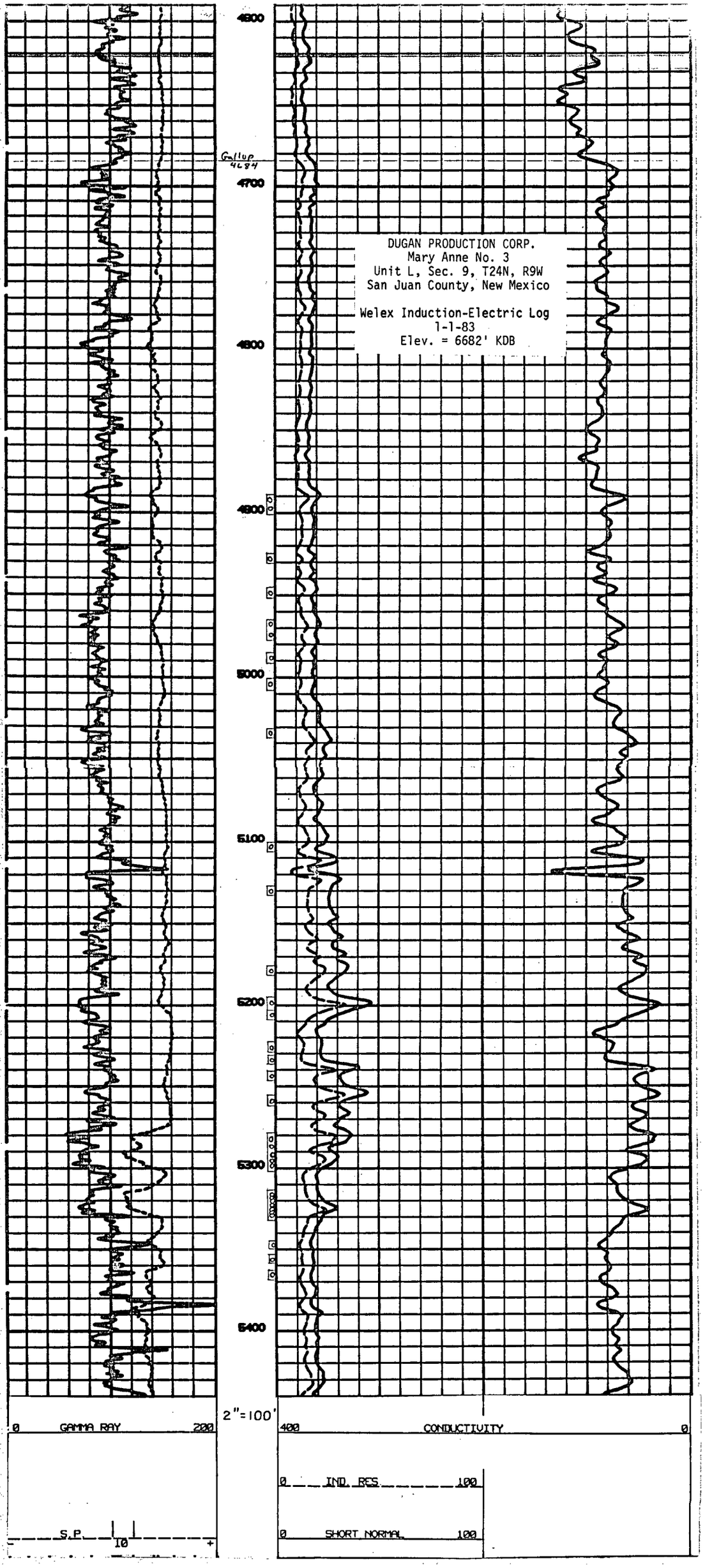
DUGAN PRODUCTION CORP.
Mary Anne #3

Sec. 9, T. 24 N., R. 9 W.



Sec. 9:	All	NM 10089	- Dugan Production Corp.	
Sec. 8:	All	NM 25440	- Dugan Production Corp.	
Sec. 10:	W/2	SF 078859	- Reynolds Mining Corp. 50% Box 9911 Corpus Christi, TX 78048 Conoco, Inc. 50% Attn: C E Stark 555 17th St., 9th Floor, Anaconda Twr Denver, CO 80202	
Sec. 15:	NW/4	SF 078859-D	- Benjamin Elenbogen 3450 S. Poplar St., Suite 104 Denver, CO 80224	
Sec. 16:	N2 NW4	NM State #E6644	- Valex - 1980 Oil & Gas Program 1580 Lincoln St. Denver, CO 80203	
	S2 NW4, NE4	NM State #E6644	- Valex Petroleum Corp. 1580 Lincoln St. Denver, CO 80203	
Sec. 17:	E/2	U S Minerals, no existing lease		


DUGAN PRODUCTION CORP.
Mary Anne No. 3
Unit L, Sec. 9, T24N, R9W
San Juan County, New Mexico
Welex Induction-Electric Log
1-1-83
Elev. = 6682' KDB
5900
6000
Greenhorn 6052
6100
Graneros 6122
Dakota 6158
6200
calculated Sw = 38 to 65%
6300
14 holes
6400
2" = 100'
0 GAMMA RAY 200
S.P.
10
-
+
400 CONDUCTIVITY
0 IND. RES. 100
0 SHORT NORMAL 100


4600
Gallup
4684
4700
4800
4900
5000
5100
5200
5300
5400
DUGAN PRODUCTION CORP.
Mary Anne No. 3
Unit L, Sec. 9, T24N, R9W
San Juan County, New Mexico
Welex Induction-Electric Log
1-1-83
Elev. = 6682' KDB
2"=100'
0 GAMMA RAY 200
400 CONDUCTIVITY 0
0 IND. RES 100
0 SHORT NORMAL 100
S.P.
10
- +

dugan production corp

September 15, 1983

TO: Operators of Leases Offsetting
Dugan Production Corp.'s Mary Anne #3 Well

RE: Request for Administrative Approval to Commingle Downhole
Bisti Gallup and Basin Dakota Fields
Dugan Production Corp.'s Mary Anne Well No. 3
Unit L, Sec. 9, T24N R9W, NMPM
San Juan County, NM

Gentlemen:

We are writing to notify you of Dugan Production Corp.'s application to the New Mexico Oil Conservation Division to commingle production from the Gallup and the Dakota formations within the well bore of the captioned well.

We are making this application because of marginal productivity indicated during our recent completion efforts of the Mary Anne #3, which was spudded on December 22, 1982. To date, no substantial production has occurred and we are currently testing the well which will likely potential for a total of approximately 35 BOPD and 40 BWPD and 160 MCFD from both zones. We have installed a rod pump on the well and expect this well to always be a marginal producer. Attached for your reference is a map on which we have indicated the location of the Mary Anne #3. The proposed commingling is similar to six other wells in the area that have been authorized to commingle Gallup and Dakota production in the well bore.

Should you have any questions regarding this matter, please feel free to contact us.

Sincerely,

John D. Roe

John D. Roe
Petroleum Engineer

JDR:fp
Attachment

cc: Joe D. Ramey, NMOCD
See attached distribution list

709 BLOOMFIELD RD. • P.O. BOX 208 • FARMINGTON, NEW MEXICO 87499 • PHONE: 505-325-1821

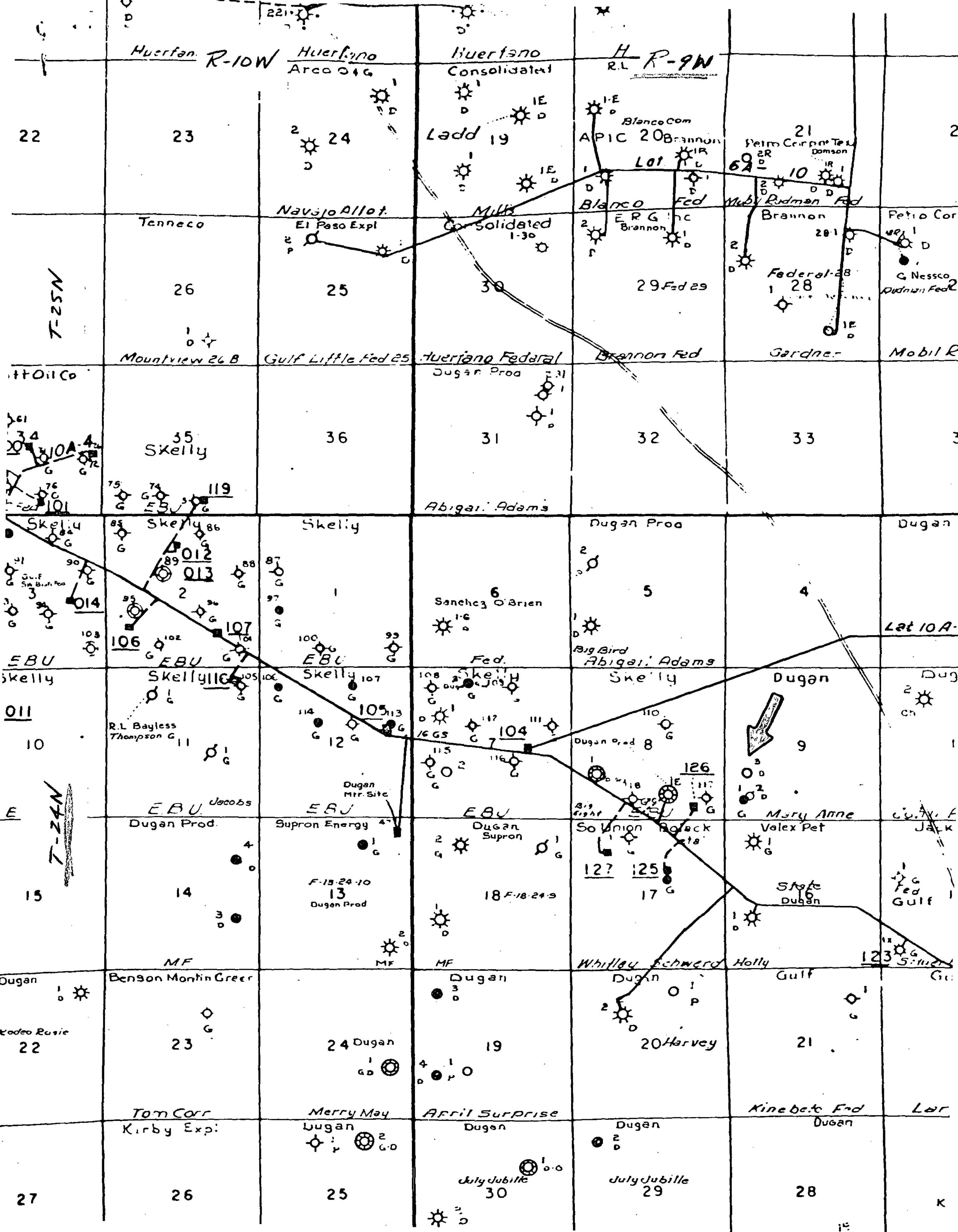
Operators of Leases Offsetting
Dugan Production Corp.'s Mary Anne #3 Well

Benjamin Elenbogen
3450 S. Poplar St., Suite 104
Denver, CO 80224

Valex Petroleum Corp.
1580 Lincoln St.
Denver, CO 80203

Conoco, Inc.
Attn: C E Stark
555 17th St., 9th Floor, Anaconda Twr
Denver, CO 80202

Reynolds Mining Corp.
Box 9911
Corpus Christi, TX 78048


R-10W
R-9W
T-25N
T-24N
Huerfano
Huerfano
Arco O & G
Huerfano
Consolidated
Ladd
APIC
Blanco Com
Brannon
Petro Corp of Tex
Damson
Lat 6A
Blanco
Fed
Mobil Rudman Fed
Navajo Allot.
El Paso Expl
Mills
Consolidated
E R G Inc
Brannon
Tenneco
Petro Cor
Federal-28
G Nessco
Rudman Fed
Fed 29
Mountview 26 B
Gulf Little Fed 25
Huerfano Federal
Dugan Prod
Brannon Fed
Gardner
Mobil R
Skelly
Abigail Adams
Dugan Prod
Dugan
Sanchez O'Brien
Big Bird
Lat 10A
EBU
Fed.
R.L Bayless
Thompson G
Jacobs
Dugan Mtr. Site
Dugan Prod.
Supron Energy
Dugan
Supron
So Union
Volex Pet
Mary Anne
F-13-24-10
Dugan Prod
F-18-24-9
State
Dugan
Fed
Gulf
MF
Whitley
Schwerdt
Holly
Benson Montin Greer
Dugan
Gulf
Rodeo Rosie
Harvey
Tom Corr
Kirby Expl
Merry May
April Surprise
Kinebeto Fed
Dugan
July Jubille
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