WC.

W. B. MARTIN & ASSOCIATES, INC.

709 North Butler, Farmington, New Mexcio 87401
Phone: (505) 326-4507

Oil Conservation Commission
State Petroleum Engineer
Director Oil Conservation Division
P. O. Box 2088
Santa Fe, N.M. 87501

ATTN: Richard Staments

Accompanying this note is the required State Oil and Gas Conservation information for Letter of Intent to Comingle Gallup and Dakota formations for Well #57 Martin-Whittaker and #58 Martin-Whittaker. The following information is in compliance with Rule 303 Section C-2 page E-3 in Oil and Gas Conservation Division for State of New Mexico.

a.) W.B. Martin & Associates, Inc.
709 N. Butler
Farmington, N.M. 87401

b.) #57 Martin-Whittaker
970' FNL and 1850' FWL
NW¼ Sec 5 T23N R5W
Rio Arriba County, N.M.

Gallup-Semilla-Greenhorn-Dakota

c.) See attached Lease-Ownership Plat

d & e.) See attached Completion Report. Reference P. 3 & 4

Dakota C & D 6482-87 6505-10
BHP=2000 psi
IPS=12 BOPD and 10-30 MCFD
Oil gravity=40° API @ 60° F

Dakota "A" 6371-78
BHP=2000 psi
IPS=3 BOPD, 9 BWPD, 10 MCFD
Oil gravity=40° API @ 60° F
RW=.18@-M

Greenhorn-Semilla 5992-98 6001-02 6057-74 6288-6302
BHP =1105 psi + slow build up but still increasing pressure.
IPS=7 BOPD: 10 MCFD
Oil gravity=42° API @ 60° F

Gallup 5376-5586
BHP=1175 psi
IPS=8 BOPD and 30-50 MCFD
Oil gravity=42.5 @ 60° F

Upper Gallup 5023-5171
BHP =1250 psi
IPS=2 BOPD and 30 MCFD
Oil gravity=42.5 @ 60° F

Total production from swabbing after acid breakdown approximately 32 BOPD and 120 MCFD.
IP from C-104 30 BOPD, 250 MCFD and 40 bbl load water/day.
See attached C-104

f.) See above section (d & e)
g.) See above section (d & e) These wells lie within two other known Gallup-Dakota comingled pools South Lindrith Gallup-Dakota to the east and Counselors Gallup-Dakota to the west. All formation fluids are compatabile from after swab pre-frac emulsion tests.
h.) Usually initial potential swabbing is 20% greater with fluids than pumping. See section (d & e)
i.) Due to the tortuosity (Interconnected permeability) of the Semilla, Greenhorn, and Dakota "A" and its lower porosity the productive life of these two intervals is long term but low volume, volume contribution factor of 10% 3 BOPD and 25 MCFD Total for all three intervals. Gallup interval will contribute 50% of the oil and 40% gas for total 15 BOPD and 100 MCFD gas, Dakota C & D factor of 10-12 BOPD 40% oil and 50% of gas of 125 MCFD.
J.) Adjacent operators have been notified in writing of the proposed comingling. See attached.

#57 Martin-Whittaker
Completion Report

Dakota C & D

1.) Spot 250 gallons of 10% Acetic w/10% Methanol and Surfactant and Ihibitor.
2.) Perforate Dakota C & D zone @ 6482-87 & 6505-10 total 48 .375 Dia Holes.
3.) Pakr @ 6207 breakdown zones w/850 gal 10% Acetic Acid w/10% Methanol Surfactant and Inhibitor. ISIP-1400 psi Frac Gredient = .65 psi/ft.
4.) After recovering Acid Water SIW for 2 hours 200 psi.
5.) Build then after 24 hours SITP-500 psi. Initial fluid level 800' Swabbed 16 gas cut bbls oil 40° API from Dakota with 500 psi on TBG and 100% oil in TBG gave a BHP approx. 2000 psi. After initial swab test fluid entry was 2 bbl/4 hour=12 BOPD and 10-30 MCFD
6.) Frac'd Dakota C & D with 63,000 gal of 25#/1000 Gel 2% KCL water with Surfactant and corrosion and Scale Inhibitor with 66,000# 20/40 sand. Avg injection rate 26 BPM and 2900 psi Avg. ISIP-2750 psi 15 min-2360 psi

Dakota "A"

1.) Set R.B.P. above Dakota C & D P.T. to 3000 psi. Held.
2.) Perforated Dakota A from 6371-78 total 24 .375 Dia Holes.
3.) Pakr @ 6304' KB breakdown Dakota A with 500 gallons 10% Acetic Acid with 10% Methanol. ISIP-2400 psi 15 min-2400 psi Very tight zone.
4.) After recovering Acetic Water load SIW for 2 hours 70 psi SIW for 12 hours 575 psi SIW for 24 hours 700 psi. Blew down TBG in 2 min initial fluid level 3000' KB Pulled 12 bbls w/25% oil cut. Total oil swabbed 3 BOPD and 9 bbls formation water RW= .18ΩM. BHP=2000 psi
5.) SIW for 4 hour 1 bbl fluid entry and 80 psi on TBG 25% oil cut. Gas would burn not ecomomic to frac would maintain a hydro-static head on zone.

Semilla-Greenhorn

1.) Set R.B.P above Dakota A.P.T to 3000 psi. Held
2.) Perforate Semilla-Greenhorn interval from 5992-98, 6001-6002, 6057-74, 6288-6302 total 87 .41 Hole.
3.) Pakr @ 5950' KB breakdown interval with 1550 gallon 10% Acetic Acid w/10% Methanol and Surfactant and Inhibitor dropping 74 ball sealer for diversion. Rate during job 2 BPM at 3600 psi Very tight. ISIP-2650 psi 15 min-2375 psi
4.) After recovering Acid Water SIW for 1 hour SITP-50 psi and fluid level @ 5600' KB. ½ bbl w/15% oil cut. SIW for 2 hours SITP-80 psi and ½ bbl w/15% oil cut. SIW for 24 hours SITP= 475 psi Fluid level @ 4100' KB 100% oil. Bled down TBG gas would flare oil gravity 42° API BHP-1105 psi SIW for 12 hours SITP-150 psi and fluid level @ 4500'KB zone not economic to frac too low porosity and permeability zone will sustain a column of 2% KCL with no fluid entry.

Gallup-Was to be treated due to Semilla-Dakota zones uneconomic together.

1.) Set R.B.P. above Semilla-Greenhor P.T. to 3000 psi. Held.
2.) Perforate Gallup 5376-5586 total 40 .375 Dia Holes.
3.) Pakr @ 5267' KB breakdown Gallup with 1500 gallons 10% Acetic Acid with 10% Methanol and Surfactant and Inhibitor.
4.) After recovery of Acid Water SIW for 1 hour SITP-100 psi. Bled down Natural Gas and pull 1 bbl 15% oil. SIW 1 hour SITP-150 psi and pulled $1\frac{1}{2}$ bbls. 40% oil and Acid Water. SIW for 3 hours SITP-250 psi and 2 bbls 90% oil and Acid Water. SIW for 24 hrs SITP-450 psi and IFL @ 3000'. Bled down gas in 1 hour through $\frac{1}{4}$" choke still casing/10 psi flowing pressure approximately 30-50 MCFD and pulled 7 bbls oil. BHP=1175 psi API-42.5°
5.) Frac Gallup due to experience with Gallup.
Pump 80,000 gallons of 2% slickwater with Surfactant and Scale and Corrosion Inhibitor and 100,000# 20/40 sand. Avg injection pressure 1500 psi @ 60 BPM

Upper Gallup

1.) Set R.B.P. above Gallup P.T. to 2000 psi. Held.
2.) Perforate Upper Gallup @ 5023-5171 with 40 .375 Dia Holes.
3.) Pakr @ 4908' KB acidize Upper Gallup with 850 gallon 10% Acetic Acid with 10% Methanol and Surfactant and Inhibitor. ISIP-1400 psi 15 min-1400 psi Low permeability and low porosity due to no decline in pressures.
4.) Slow Acid Water recovery SIW for 1 hour 250 psi and $\frac{1}{2}$ bbl w/trace oil and Acid Water. SIW for 1 hour SITP-100 psi gas and $\frac{1}{2}$ bbl w/trace oil. SIW for 24 hour SITP -800 psi IFL @ 3800'KB Pulled 4 bbls 20%-40% oil and Acid Water. BHP 1250 psi. Zone not economic to frac low permeability and porosity.

Revised 10-1-78

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

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LAND OFFICE		
TRANSPORTER	OIL	
	GAS	
OPERATOR		
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REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS

Operator
W. B. Martin & Associates

Address
709 N. Butler, Farmington, NM 87401

Reason(s) for filing (Check proper box)
New Well ☐
Recompletion ☐
Change in Ownership ☐
Change in Transporter of: Oil [X] Dry Gas ☐ Casinghead Gas ☐ Condensate ☐
Other (Please explain)

If change of ownership give name and address of previous owner

DESCRIPTION OF WELL AND LEASE

Lease Name	Well No.	Pool Name, Including Formation	Kind of Lease	Lease No.
Martin-Whittaker	57	S. Lindrith-Gallup-Dakota Exten	State, Federal, or Fee Federal	38

Location
Unit Letter C : 970 Feet From The North Line and 1850 Feet From The West
Line of Section 5 Township 23N Range R4W NMPM, Rio Arriba County

DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS

Name of Authorized Transporter of Oil ☐ or Condensate ☐	Address (Give address to which approved copy of this form is to be sent)
Giant Refining Co	P. O. Box 256, Farmington, NM 87499
Name of Authorized Transporter of Casinghead Gas ☐ or Dry Gas ☐	Address (Give address to which approved copy of this form is to be sent)
El Paso Natural Gas Co	P. O. Box 1492, El Paso, Texas 79978

If well produces oil or liquids, give location of tanks.	Unit	Sec.	Twp.	Rge.	Is gas actually connected?	When
	C	5	23N	4W	no	

If this production is commingled with that from any other lease or pool, give commingling order number:

COMPLETION DATA

Designate Type of Completion – (X)	Oil Well	Gas Well	New Well	Workover	Deepen	Plug Back	Same Res'v.	Diff. Res
	X		X					

Date Spudded	Date Compl. Ready to Prod.	Total Depth	P.B.T.D.
9/3/84	10/18/84	6573	6570
Elevations (DF, RKB, RT, GR, etc.)	**Name of Producing Formation**	**Top Oil/Gas Pay**	**Tubing Depth**
6587'	Gallup-Dakota	5023 Gallup	5300' K.B.
Perforations			**Depth Casing Shoe**
5023-6510			6570

TUBING, CASING, AND CEMENTING RECORD

HOLE SIZE	CASING & TUBING SIZE	DEPTH SET	SACKS CEMENT
12¼	9 5/8" 32#/ft	285	206.50 ft³
8 3/4	7" 32#/ft	4419	529.5 ft³
6½	4½" 11.6#/ft	6570'	283 ft³
	2 3/8" 4.7#/ft	5300'	

TEST DATA AND REQUEST FOR ALLOWABLE (Test must be after recovery of total volume of load oil and must be equal to or exceed top allowable for this depth or be for full 24 hours)

OIL WELL

First New Oil Run To Tanks	Date of Test	Producing Method (Flow, pump, gas lift, etc.)	
10/18/84	10/19/84	Flowing	
Length of Test	**Tubing Pressure**	**Casing Pressure**	**Choke Size**
24 hrs	30#	600#	2"
Oil Prod. During Test	**Oil - Bbls.**	**Water - Bbls.**	**Gas - MCF**
70	30	40	250

GAS WELL

Actual Prod. Test - MCF/D	Length of Test	Bbls. Condensate/MMCF	Gravity of Condensate
Testing Method (pitot, back pr.)	**Tubing Pressure (Shut-in)**	**Casing Pressure (Shut-in)**	**Choke Size**

CERTIFICATE OF COMPLIANCE

I hereby certify that the rules and regulations of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

W. B. Martin Jr.
(Signature)

Operator
(Title)

10/23/84
(Date)

OIL CONSERVATION DIVISION

APPROVED _____, 19 ____

BY _____

TITLE _____

This form is to be filed in compliance with RULE 1104.

If this is a request for allowable for a newly drilled or deepened well, this form must be accompanied by a tabulation of the deviation tests taken on the well in accordance with RULE 111.

All sections of this form must be filled out completely for allowable on new and recompleted wells.

Fill out only Sections I, II, III, and VI for changes of owner, well name or number, or transporter, or other such change of condition.

Separate Forms C-104 must be filed for each pool in multiply completed wells.

#58 Martin-Whittaker
Summary Report

a.) W.B. Martin& Associates, Inc.
709 N. Butler
Farmington, N.M. 87401

b.) #58 Martin-Whittaker
1830' FNL and 840' FWL
NW¼ Sec 9 T23N R5W
Rio Arriba County, N.M.

Gallup-Semilla-Greenhorn-Dakota

c.) See attached Lease-Ownership Plat

d & e) See attached Completion Report. Reference P. 7 & 8

Dakota C & D
6434-67' KB
BHP=2000 psig
IPS=6 BOPD and 130 MCFD
Oil gravity=40° API

Dakota "A"
6231-36
BHP=1400 psig
IPS=1.5 BOPD and 10 MCFD
Oil gravity=42° field test

Semilla-Greenhorn
6008-6254
BHP=1100 psig + low permeability
IPS=6 BOPD and 15 MCFD
Oil gravity=44° API

Gallup
5345-5554
BHP=1200 psig
IPS=2 BOPD+ and 50 MCFD
Oil gravity=42.5° API

Upper Gallup
4936-4976
BHP=1060 psi
IPS=2 BOPD and 30 MCFD

Total Daily production from swabbing after acid breakdown
approximately 17.5 BOPD 230 MCFD

IP from C-104 20 BOPD AND 220 MCFD and 40 bbl load water per day.

f.) See above section (d & e)

g.) See abcve section (d & e) These wells lie within two other known Gallup-Dakota comingled pools South Lindrith Gallup-Dakota to the east and Counselors Gallup-Dakota to the west. All formation fluids are compatabile from after swab pre-frac emulsion tests.

h.) Usually initial potential swabbing is 20% greater with fluids than pumping. See section (d & e)

i.) Due to the tortuosity (Interconnected permeability) of the Semilla, Greenhorn and Dakota "A" and its lower porosity the productive life of thise two intervals is long term but low volume, volume contribution factor of 15% 4 BOPD and 25 MCFD Total of all three intervals. Gallup interval will contribute 40% of the oil and 40% gas for total 6-7 BOPD and 100 MCFD gas, Dakota C & D factor of 7 BOPD 45% oil and 55% gas of 150 MCFD.

j.) Adjacent operators have been notified in writing of the proposed comingling. See attached.

#58 Martin-Whittaker
Completion Report

Dakota C & D

1.) Spot 150 gallons of 10% Acetic Acid and w/10% Methanol and Surfactant and Inhibitor.
2.) Perforate Dakota C & D @ 6434-40 and from 6459-67' KB total 60 .375 Dia Holes.
3.) Set pakr @ 6209 breakdown Dakota C & D zone w/1000 gallon 10% Acetic Acid with 10% Methanol & Surfactant and Inhibitor ISIP=1700 psi F.G.=.68 psi/ft
4.) After recovering Acid Water SIW for 1 hour. Pressure build=up to 600 psi. SIW for 24 hours SITP 1800 psi Blew down in 1.5 hrs. w/$\frac{1}{4}$" choke. IFL @ 500' KB. Swabbed back 8 bbls 75% oil & 25%water. BHP=2000 psi Approx. 6 BO 130 MCFD Oil gravity 40°
5.) Frac'd Dakota C & D with 78,000 gal 20# x-link and 103,000# 20/40 sand at Avg injection rate of 32.5 BPM @ 2800 psi. ISIP=2800 psi 15 min=2200 psi

Dakota "A"

1.) Set R.B.P. above Dakota C & D P.T. to 3000 psi. Held.
2.) Perforate Dakota "A" zone @ 6321-36 with 48 .375 Dia Holes.
3.) Set pakr @ 6272' KB breakdown Dakota "A" with 500 gallons 10% Acetic Acid w/10% Methanol Surfactant and Inhibitor ISIP=1850 psi
4.) SIW for 1 hour SITP-80 psi IFL @ 6100' KB SIW for 24 hours SITP 450 psi IFL @ 4100' KB Pulled 10 bbls w/20% oil and 8 bbls formation water BHP=1400 psi, very low porosity and permeability zone possible production 1.5 BOPD and 10 MCFD Not economic to frac. Oil gravity field test 42°.

Semilla-Greenhorn

1.) Set R.B.P. above Dakota A and P.T. to 3000 psi. Held.
2.) Perforate Semilla-Greenhorn interval from 6008-16, 6021-24, 6235-54 total 48 .375 Dia Holes.
3.) Set pakr @ 5982' KB Breakdown with 600 gal 10% Acetic Acid with 10% Methanol Surf, Inhibitor.
4.) After recovering Acid Water SIW for 12 hours 200 psi IFL-1600' KB Pulled 32 bbls fluid 10% oil approximately 3 BOPD.
5.) Re-acidize Semilla-Greenhorn with 5000 gal 10% Acetic Acid with above additives. ISIP-3400 psi.
6.) After recovering Acid Water SIW for 24 hours. SITP-475 psi IFL @ 4200' KB Swabbed 6 BOPD and 10-20 MCFD Oil gravity 44° API. Not economic to frac. BHP=1100 psi Slow build-up Well will sustain a column of water without any fluid loss.

Gallup

1.) Set R.B.P. above Semilla-Greenhorn P.T. to 3000 psi.
2.) Perforate Gallup interval 5345-5554 total 100 .375 Dia Holes.
3.) Set pakr @ 5280'KB breakdown with 1500 gallons 10% Acetic Acid with above additives
4.) After recovering Acid Water.
5.) SIW for 24 hours SITP-1000 psi blew down in 1½ hours IFL @ 4800' KB Pulled 2 bbls oil BHP=1200 psi Oil gravity 42.5° 50 MCFD
6.) Frac Gallup with 72,634 gal 2% slk water and 86,000# 20/40 sand. ISIP-975 15 min-780 psi

Upper Gallup

1.) Set R.B.P. above Gallup P.T. to 2500 psi. Held.
2.) Perforate Upper Gallup 4936-4976' KB total 48 .41 Dia Holes.
3.) Pakr set @ 4879' KB breakdown Gallup with 500 gallons 10% Acetic Acid with above additives.
4.) After recovering Acid Water SIW for 24 hours SITP-500 psi Bled down ¼" choke in 1 hour and IFL @ 3500' KB. Pulled 6 bbls 40% oil. BHP Upper Gallup=1060 psi. Production 2 BOPD and 30 MCFD.

Sincerly,

Andrew A. Bates

cc File #57 & #58
W.B. Martin, Jr.
Frank Chavez
Aztec Oil & Gas Conservation
Amoco Production Company

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 875

REQUEST FOR ALLOWABLE
AND
AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS

PRORATION OFFICE	
OPERATOR	OIL
	GAS

Operator

W.B. Martin & Associates, Inc

Address

709 North Butler, Farmington, NM 87401

Reason(s) for filing (Check proper box)

New Well	XX	Change in Transporter of:			
Recompletion		Oil	X	Dry Gas	
Change in Ownership		Casinghead Gas		Condensate	

Other (Please explain)

If change of ownership give name and address of previous owner

DESCRIPTION OF WELL AND LEASE

Lease Name	Well No.	Pool Name, Including Formation	Kind of Lease	Lease No.
Martin-Whittaker	58	S. Lindrith Gallup-Dakota	State, Federal, or Fee Federal	77

Location

Unit Letter E : 1830' Feet From The North Line and 840' Feet From The West

Line of Section 9 Township 23N Range 5W , NMPM, Rio Arriba County

DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS

Name of Authorized Transporter of Oil [XX] or Condensate [ ]	Address (Give address to which approved copy of this form is to be sent)
Giant Refinging Co.	P.O. Box 256, Farmington, NM 87401
Name of Authorized Transporter of Casinghead Gas [X] or Dry Gas [ ]	Address (Give address to which approved copy of this form is to be sent)
El Paso Natural Gas Co.	P.O. Box 1492, El Paso, TX 79978

If well produces oil or liquids, give location of tanks.	Unit	Sec.	Twp.	Rge.	Is gas actually connected? When
	E	9	23N	5W	No-Waiting on Hookup

If this production is commingled with that from any other lease or pool, give commingling order number:

COMPLETION DATA

Designate Type of Completion – (X)	Oil Well	Gas Well	New Well	Workover	Deepen	Plug Back	Same Res'v.	Diff. Res'v.
	X		X					

Spudded	Date Compl. Ready to Prod.	Total Depth	P.B.T.D.
8-22-84	10-18-84	6531'	6530'
Elevations (DF, RKB, RT, GR, etc.)	**Name of Producing Formation**	**Top Oil/Gas Pay**	**Tubing Depth**
6614' GR	Gallup-Dakota	4936 Gallup	5320'
Perforations			**Depth Casing Shoe**
4936'-6467'			6530'

TUBING, CASING, AND CEMENTING RECORD

HOLE SIZE	CASING & TUBING SIZE	DEPTH SET	SACKS CEMENT
12¼"	9 5/8" 32#/ft	251'	206.50ft^3
8 3/4"	7" 23#/ft	4431'	484ft^3
6¼"	4½" 11.60#/ft	6530'	304.5ft^3

TEST DATA AND REQUEST FOR ALLOWABLE (Test must be after recovery of total volume of load oil and must be equal to or exceed top allowable for this depth or be for full 24 hours)

OIL WELL

First New Oil Run To Tanks	Date of Test	Producing Method (Flow, pump, gas lift, etc.)
10-18-84	10/19/84	Flowing
Length of Test	**Tubing Pressure**	**Casing Pressure**	**Choke Size**
24	20	800	2"
Oil Prod. During Test	**Oil - Bbls.**	**Water - Bbls.**	**Gas - MCF**
60bbls	20	40	220

GAS WELL

Prod. Test - MCF/D	Length of Test	Bbls. Condensate/MMCF	Gravity of Condensate
Testing Method (pitot, back pr.)	**Tubing Pressure (Shut-in)**	**Casing Pressure (Shut-in)**	**Choke Size**

CERTIFICATE OF COMPLIANCE

I hereby certify that the rules and regulations of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

W.B. Martin
(Signature)

Operator
(Title)

10-23-84
(Date)

OIL CONSERVATION DIVISION

APPROVED _____, 19 _____

BY _____

TITLE _____

This form is to be filed in compliance with RULE 1104.

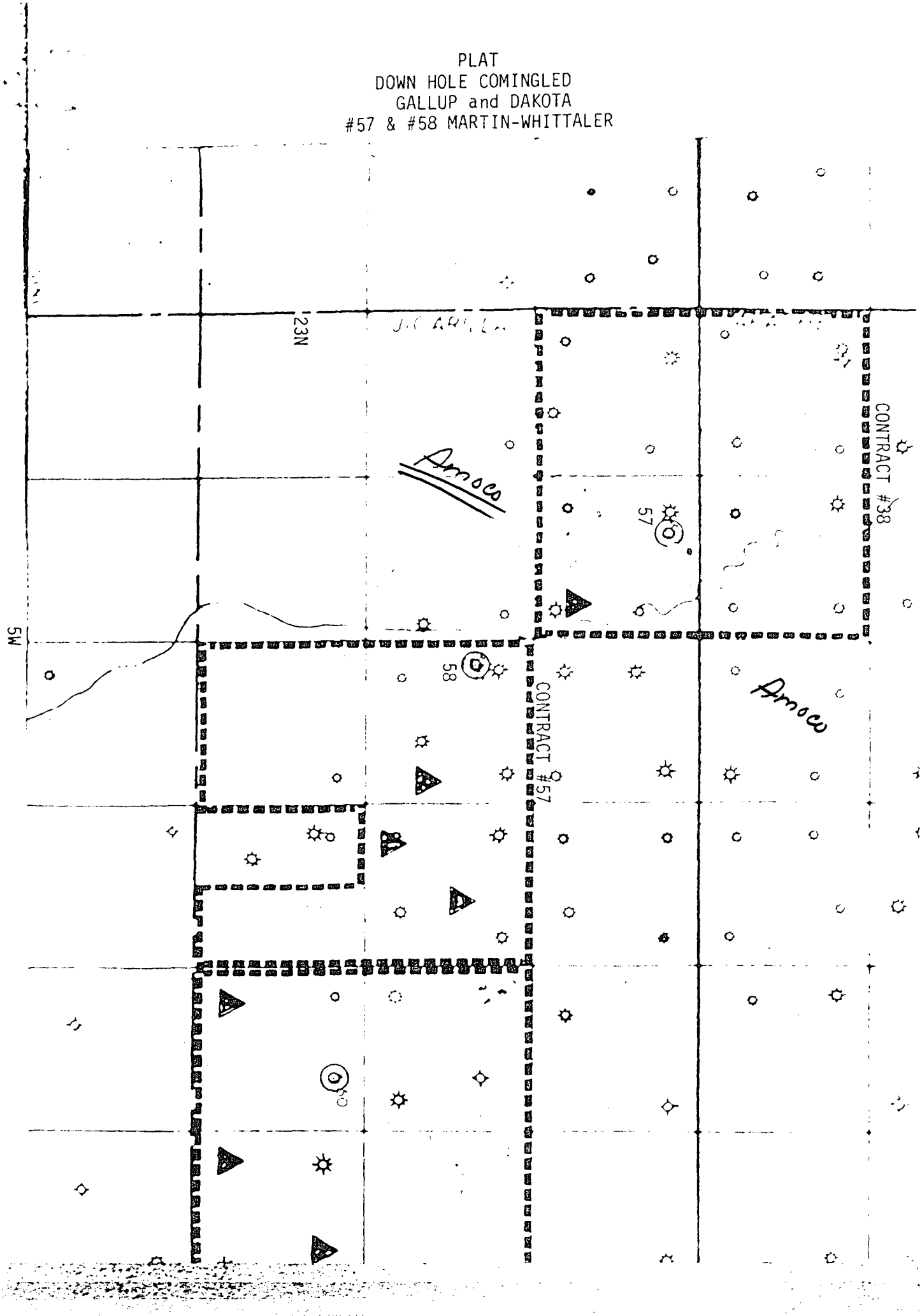
If this is a request for allowable for a newly drilled or deepened well, this form must be accompanied by a tabulation of the deviation tests taken on the well in accordance with RULE 111.

All sections of this form must be filled out completely for allowable on new and recompleted wells.

Fill out only Sections I, II, III, and VI for changes of owner, well name or number, or transporter, or other such change of condition.

Separate Forms C-104 must be filed for each pool in multiply completed wells.

PLAT
DOWN HOLE COMINGLED
GALLUP and DAKOTA
#57 & #58 MARTIN-WHITTALER



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

TONEY ANAYA
GOVERNOR

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

February 18, 1985

Mr. Drew Bates
W.B. Martin & Associates, Inc.
709 North Butler
Farmington, NM 87401

Re: Martin-Whittaker #57 C-05-23N-5W
Commingled Production Allocation

Dear Drew:

Your recommended allocation of production to the referenced well is approved as follows:

	Oil	Gas
Gallup	44%	34%
Dakota	56%	66%

If you have any questions, please contact this office.

Sincerely,

Frank T. Chavez
District Supervisor

FTC/dj

xc: Santa Fe
EPG
G R
Well File
Operator File

RECEIVED
FEB 21 1985
OIL CONSERVATION DIVISION
SANTA FE