

OIL CONSERVATION DIVISION
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SUITE 2000 ONE NORWEST CENTER/1700 LINCOLN STREET/DENVER, CO 80203-4520

303/837-5000

April 18, 1994

New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Attn: Director

MW Petroleum Corporation
Bobby Poirrier Jr.
1700 Lincoln, Suite 2000
Denver, CO 80203-9911

Dear Director:

MW Corporation is submitting this application to seek an exception to Rule 303-A concerning segregation of production from pools.

We are requesting approval to commingle the Gallup/Dakota and the Mesa Verde in the Jicarilla Apache A118-15 well.

OPERATOR: MW Petroleum Corporation (Managed by Apache Corp.)
1700 Lincoln, Suite 2000
Denver, CO 80203-9911

WELL: Jicarilla Apache A118-15
SESE Sec. 25 T26N R3W
Rio Arriba County, NM
Gallup/Dakota and Mesa Verde

Plat of lease ownership and offset wells: See Attachment 'A'

Form C-116: See Attachment 'B'

Production decline curve:

The Gallup-Dakota was completed on October 18, 1985.
The Mesa Verde was recompleted and began sales on
October 6, 1993. It has been isolated from the
Gallup-Dakota with a packer.

Mesa Verde production averages:

10/93	93	mcf/d,	33	bwpd,	3	bopd
11/93	97	mcf/d,	14	bwpd,	1	bopd
12/93	66	mcf/d,	14	bwpd,	0	bopd
1/94	62	mcf/d,	0	bwpd,	3	bopd

(See attachment 'C' for Gallup/Dakota decline curve)

Well resume and proposed commingling schematic: See Attachment 'D'

Estimated bottomhole pressures: See Attachment 'E'

Description of the fluid characteristics: See Attachment 'F'

Value of the commingled production, as of January, 1994

Jicarilla A118-15	Gallup-Dakota
Gas	\$2.12/mcf
Oil	\$13.75/bbl
Jicarilla A118-15	Mesa Verde
Gas	\$2.12/mcf
Oil	\$13.75/bbl

Formula for Allocation:

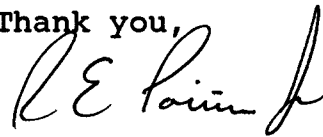
The allocation for production will be based on prior production from the Gallup/Dakota of 1500 mcf/m and current production from the Mesa Verde of 1900 mcf/m, or 55% Mesa Verde and 45% Gallup/Dakota.

Statements of notification of offset operators and the BLM:
See Attachment 'G'

Ownership of the zones is common: See Attachment 'H'

This should complete all information needed to meet the requirements for the commingling approval. If further information is required, please contact me.

Thank you,



Bobby Poirrier Jr.
Production Engineer Tech.

Mark McCool
Production Superintendent

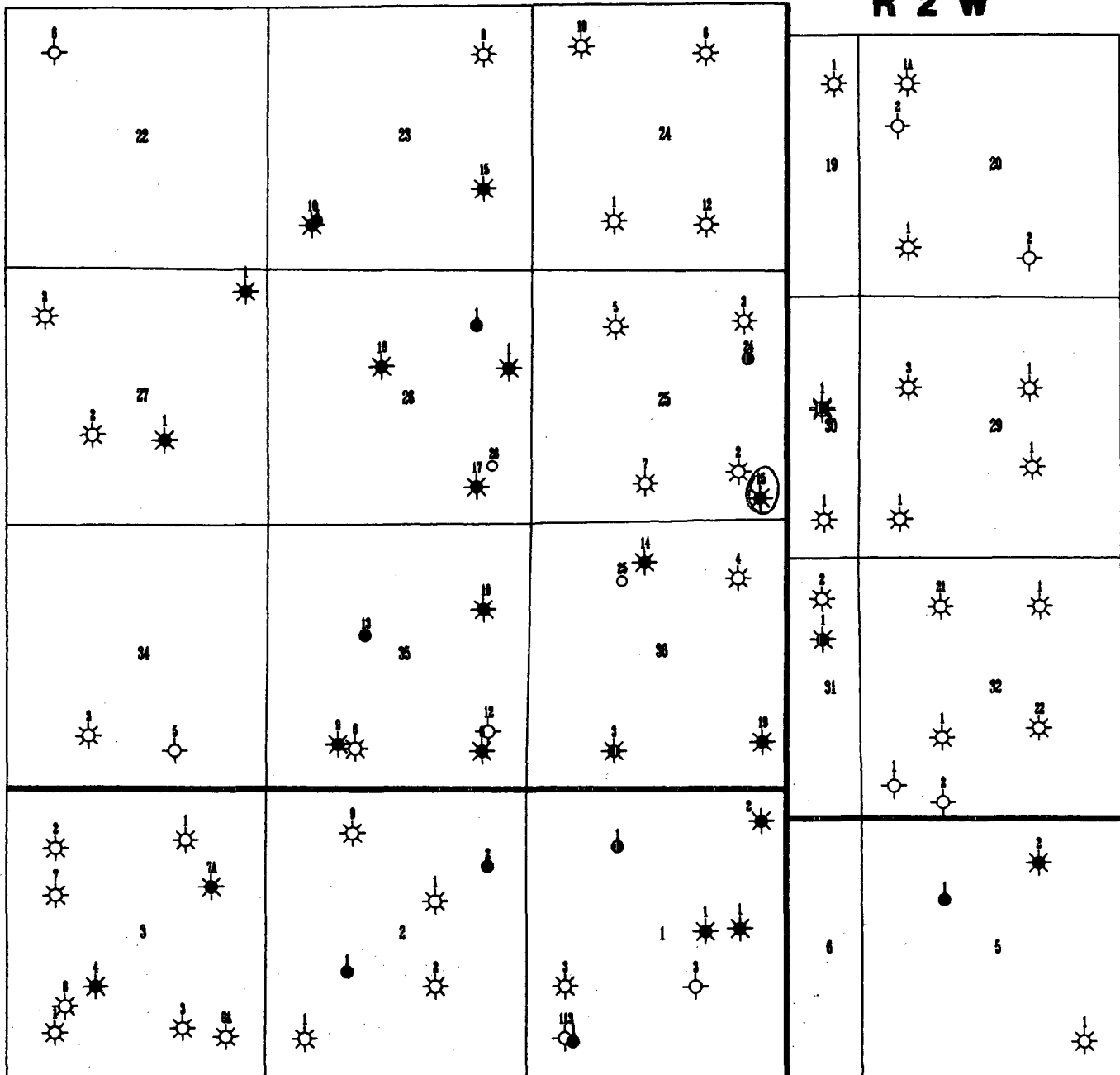
cc: Division Director, Santa Fe Office (3 copies)
Ernie Bush, Aztec Office (2 copies)

Attachment 'A'

Plat of lease ownership/offset wells

R 3 W

R 2 W



T 26 N

T 25 N

Scale: 1"=2,000'

LEGEND

- LOCATION
- ☉ DRY HOLE
- ☼ GAS WELL
- OIL WELL
- ☼ OIL & GAS WELL
- ☼ ABANDONED OIL WELL

Apache
CORPORATION
ROCKY MOUNTAIN REGION

LEASE 118
RIO ARriba COUNTY, NEW MEXICO

well symbols
● GAVIAN
MINES

* BLANCO
MESA VERDE

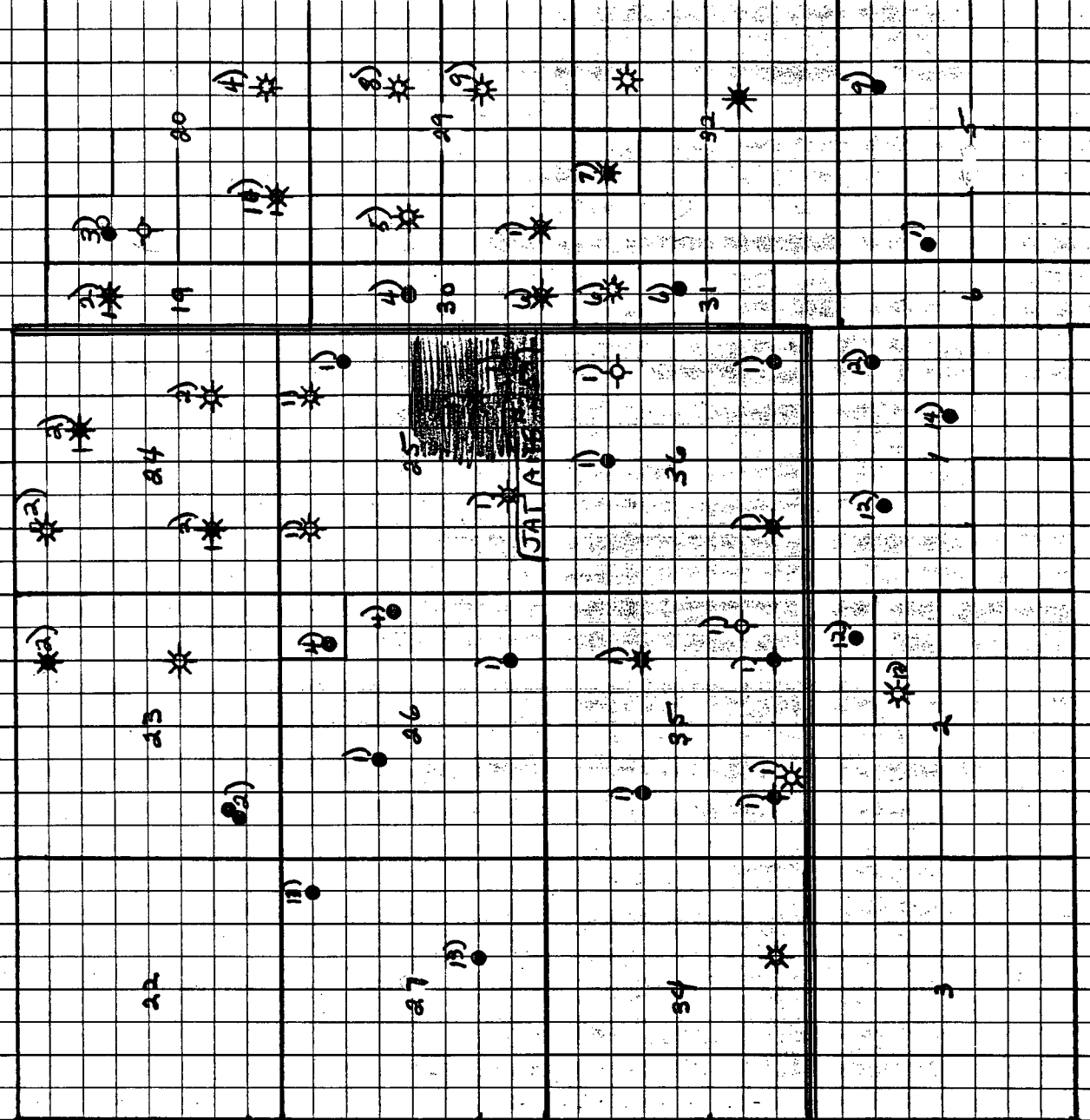
* TAPATIO PC

* GAL/DK

* Plugged oil
WELL

* Plugged gas
WELL

- 1) MW PETROLEUM
- 2) MERIDIAN OIL CO.
- 3) MERRION OIL & GAS
- 4) ROBERT L. BAYLESS
- 5) READING & BATES
- 6) ~~BOGUE OIL~~ TEXACO
- 7) MOUNTAIN STATES
- 8) WESTERN OIL &
MINES
- 9) MESA GRANDE
- 10) G. MERRION
- 11) DUGAN PROD.
- 12) MINE INC.
- 13) GIANT E&P
- 14) TEXACO



SHADED AREA IS DESIGNATED ACREAGE.

Attachment 'B'

Form C-116

Submit 2 copies to Appropriate
District Office.

DISTRICT I

P.O. Box 1980, Hobbs, NM 88240

DISTRICT II

P.O. Drawer DD, Artesia, NM 88210

DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

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-116
Revised 1/1/89

GAS - OIL RATIO TEST

Operator MW Petroleum Corporation		Pool Mesa Verde		County Rio Arriba										
Address 304 N. Behrend, Farmington, NM		TYPE OF TEST - (X)		Completion ☐ Scheduled ☐ Special ☒										
LEASE NAME	WELL NO.	LOCATION			DATE OF TEST	CHOKE SIZE	TBG. PRESS.	DAILY ALLOW- ABLE	LENGTH OF TEST HOURS	PROD. DURING TEST			GAS - OIL RATIO CU.FT/BBL.	
		U	S	T						R	WATER BBL.S.	GRAV. OIL		OIL BBL.S.
Jicarilla Apache A118	15	P	25	26N	3W	3/8/94 to 3/14/94	NONE	235		84	50.95	4.18	459	110

Instructions:

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Division.

Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.

Report casing pressure in lieu of tubing pressure for any well producing through casing.

(See Rule 301, Rule 1116 & appropriate pool rules.)

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

Signature

Robert E. Poirrier, Jr., Engineering Technician
Printed name and title

March 28, 1994

Date

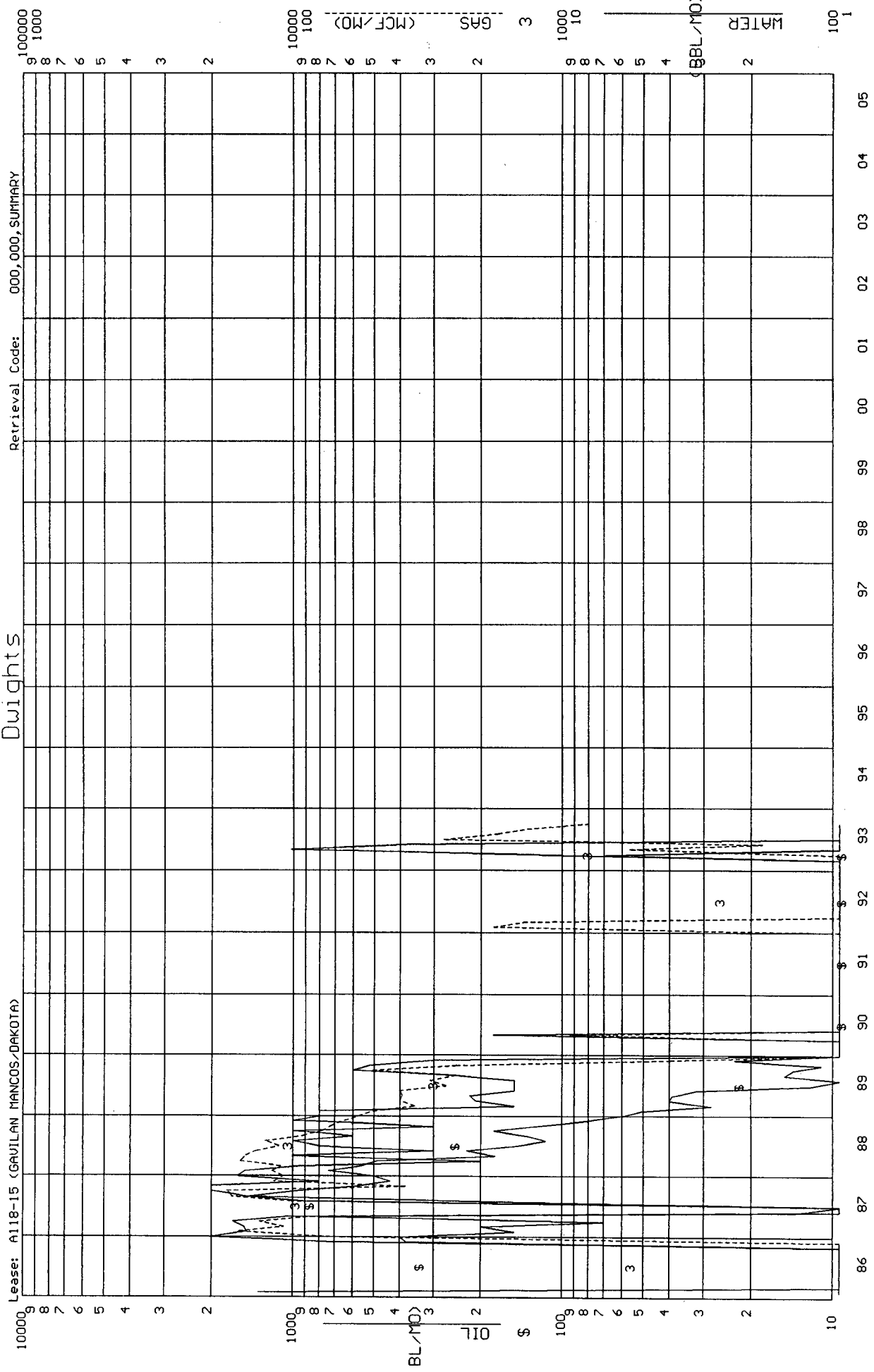
303 837-5442

Telephone No.

Attachment 'C'

Decline Curves

Dwights



County: RIO ARriba State: NM

Field: OJITO NE (GALLUP DAKOTA) 6D

Reservoir: GALLUP DAKOTA

Operator: M H PETROLEUM CORP

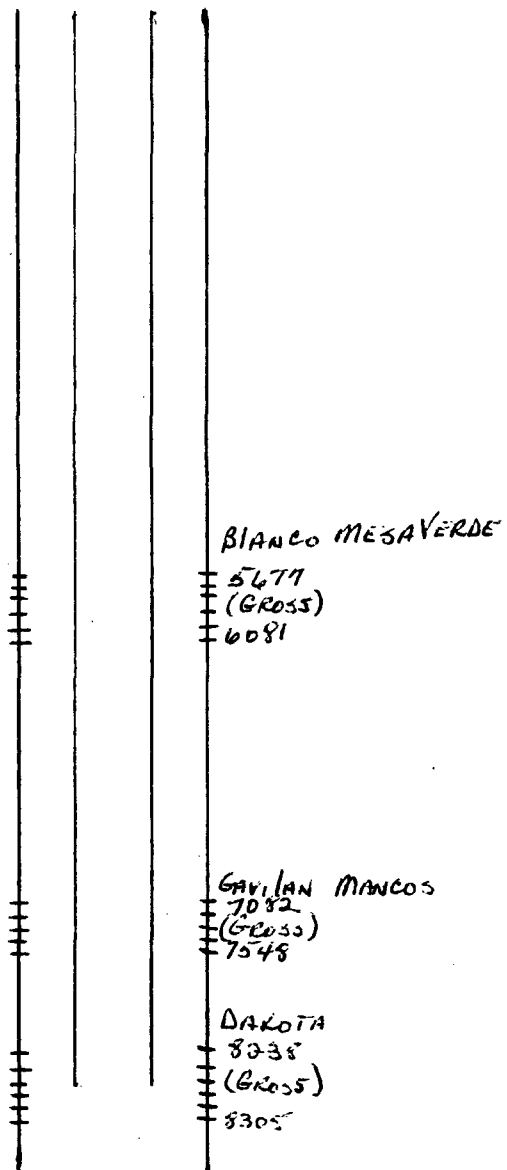
Oil Cum: 18082 Gas Cum: 302620

Location: 25P 26N 3W

Attachment 'D'

Well resume and commingling schematic

JAT A118 #15 COMMINGLE
SKEMATIC



JAT - A-118 #15

- 10-2-85 Release drilling rig. PSTD @ 8494
- 10-18-85 Perf. lower Dakota
- 10-19-85 Pump 361 bbls 270 KCH; break formation @ 1800 PSI
rate - 20 bpm @ 1500[#] avg.
- 10-22-85 Start swabbing from 8433' 20 runs 103 bbl LW
IFL-100' FFL-1200' CS9 ON VACUUM
- 10-23-85 Swab: 30 Runs IFL-600' FFL-2500' 39 BLW 17 BNO
ICP-0 FCP-60[#] ITP-0 FTP-Slight blw
- 10-24-85 SWAB: 24 Runs - IFL-1100' FFL-3000' 32 BLW 81 BNO
12 BNO ICP-250[#] FCP-300[#] ITP-5[#] FTP-0[#]
- 10-25-85 SWAB: 20 Runs IFL-1900' FFL-4700' 107 BNO 3 BNO
ICP-550[#] FCP-400[#] ITP-325[#] FTP-0 GAS CUT
- 10-26-85 SWAB: 23 Runs IFL-2700' FFL-4600' 127 BNO 2 BNO
ICP-620[#] FCP-550[#] ITP-10[#] FTP-0[#]
- 10-29-85 SWAB: 25 Runs IFL-1100' FFL-3400' 135 BNO 3 BNO
SICP-900[#] FCP-700[#] SITB-25[#] FIT-0[#]
- 10-30-85 Set drillable BP @ 8410' to perforate main Dak.
- 10-31-85 Perf ? Break down main Dak.; broke @ 2500[#]
ave rate 25 BPM min PSI 1800[#] max PSI 2500[#]
ave PSI 1900[#] 370 BLWTR 15 BLW Flowed back
- 11-1-85 Set PKR @ 8100'
- 11-2-85 Swab & flow well: 6 runs after 15.25 hrs. TBG-135[#] CS9-0
69-BLW 15-BNO 259 MCF
- 11-3-85 Flow 24 hrs. - 20-BLW 1.6 BNO 273 MCF
TBG-135[#] CS9-0
- 11-4-85 Flow 24 hrs. - 7 BLW 5 BNO 273 MCF
TBG-135[#] CS9-0

11-5-85 24 hr flow - 4 BW 1.6 BO 273 mcf
 135 TBG. 059-0

11-6-85 24 hr flow - 4 BW 5.3 BO 245 mcf
 TBG. - 130 059-0

11-6-85 Frac main Dck. w/ 60,000 gal 30[#] gel § 65,000[#] 20-40 ^{Grady} sand

11-9-85 Try to flow back frac. would not. Swab well: 5 runs 82 BLW
 1600 BLW TR

11-12-85 Swab: 12 runs § start flowing recovered 121 BLW swabbing
 Flowed 17.5 hrs.: 365 BLW 0-BO CP-550[#] T.P-160
 282 mcf

11-13-85 Flow 24 hr.: 130 BLW 0-BO 172-mcf T.P-100[#] C.P-50

11-14-85 Flow 24 hrs.: 71 BLW 0-BO 288 mcf T.P-110[#] C.P-520

11-15-85 24 hrs.: 54 BLW 0-BO 234-mcf T.P-100 C.P-500

11-16-85 24 hrs.: 50 BLW 0-BO 234 mcf T.P-100 CP-470 ^{24/64}

11-17-85 24 hrs.: 40 BLW 0-BO 250 mcf T.P-110 CP-420 ^{24/64}

11-18-85 24 hrs.: 35 BLW 0-BO 250 mcf T.P-100 C.P-420 ^{24/64}

11-19-85 Set Ret. B.P. w/ wireline § run C.B.L.

11-20-85 Perf gallery 7504-7548

11-21-85 Perf gallery 7174-7504

11-22-85 Perf gallery 7082-7174

11-23-85 Frac gallery w/ 321,600 gal 30[#] gel § 323,200[#] sand

11-27-85 Clean out sand.

12-3-85 Swab: 16 runs 120-BLW 31 BO.

12-4-85 Swab: 18 runs 91-BLW 35 BO

12-5-85 Swab: 12 runs 108-BLW 39 BO

12-6-85 Swab: 2 runs 179 mcf

12-7-85 Flow-19 hrs.: 130-BLW - 121-BO

12-8-85 21 hrs.: 58 BLW 36-BO

12-9-85 8 hrs. - 0-BLW - 0-B0
 12-10-85 6.5 hrs. - 60-BLW 33.3-B0
 12-11-85 13 hrs - 80-BLW 130-B0
 12-12-85 17 hrs - 60-BLW 131-B0
 12-13-85 Retrieve B.P.
 12-14-85 Run CBL from 3500' to surface
 12-18-85 12 hrs - 111-BLW 113-B0 851 mcf $\frac{36}{64}$
 12-19-85 24 hrs - 25-BLW 123-B0 580 mcf $\frac{36}{64}$
 12-20-85 24 hrs - 3 BLW 116-B0 280 mcf $\frac{36}{64}$
 12-21-85 24 hrs - 17 BLW 133-B0 580 mcf $\frac{36}{64}$
 12-22-85 24 hrs - 13-BLW 114-B0 364 mcf $\frac{16}{64}$
 12-23-85 24 hrs - 31-BLW 108-B0 461 mcf $\frac{16}{64}$
 12-24-85 21 hrs - 11-BLW 114-B0 578 mcf $\frac{18}{64}$
 12-25-85 24 hrs - 11-BLW 121-B0 595 mcf $\frac{18}{64}$
 12-26-85 24 hrs - 6-BLW NP-B0 497 mcf $\frac{18}{64}$
 12-27-85 24 hrs - 5-BLW 81-B0 760 mcf $\frac{18}{64}$
 12-28-85 24 hrs - 5-BLW 130-B0 595 mcf $\frac{20}{64}$
 12-29-85 12 hrs - 3-BLW 57-B0 595 mcf $\frac{20}{64}$ logged off
 12-30 to 1-8-86 SI to clean out parafin
 1-8-86 flow thg? Csg.
 1-9-86 IFL-6350' thg clean

4-22-87 Cut Parafin & retrieve pistons
 4-23-87 Swab: 18 runs 130-BLW 20-B0
 4-27-87 flow
 4-28-87 Set CIBP @ 7750
 4-29-87 Run BHP Benders & Swab 45 BLW (used to monitor press.)
 7-14-87 Put on rod pump.

10-15-87 Mill out C.I.P. @ 7750
 10-16-87 flowing up Csg
 10-17-87 flowing up Csg
 10-18-87 " " "
 10-19-87 " " " convert to plunger
 10-20-87 Kill well land thg @ 8317'. 3 swab runs: 13-B0

 11-9-91 Run BHP Survey
 11-15-91 Swab: IFL-6900' ^{3 runs} 16-BLW SITP-175 SICP-480
 11-18-91 Swab: IFL-7600' 10 runs 11-BLW Tag pit & Talley out
 SITP-250 SICP-500
 11-19-91 Pull & Talley thg. TIT w / thg.
 11-20-91 Swab: 13 runs IFL-7000' FFL-7900' 23.3 B-W 2.5-B0
 10-20-91 Swab: 4 runs IFL-7300' FFL-7700' 6-BW
 SITP-390 SICP-380
 11-26-91 Swab: 5 runs IFL-6700' FFL-7700' 6-BW FCP-260
 SITP-380 SICP-410
 11-27-91 Swab: 1 run IFL-6900' FFL-3.11 FCP-270

 Drop bumper spring, and piston.
 12-2-91 Try to run piston - SITP-360, SICP-360,
 12-3-91 Swab: 3 runs IFL-7200' SITP-380[#] NO PISTON
 12-4-91 Swab: 2 runs IFL-7100' SICP-350[#] NO PISTON - ON COMPRESSOR
 12-5-91 Swab: 2 runs IFL-7200' SICP-365[#] NO PISTON
 12-6-91 Turned on to production. would not lift sold csg.

SUPPLEMENTAL INFORMATION TO FORM 3160-3

The geological name of the surface formation is the San Juan.

Estimated tops of important potential hydrocarbon bearing formations:

<u>FORMATION</u>	<u>DEPTH</u>	<u>ELEVATION</u>
Ojo Alamo	3351	4212
Fruitland	3944	3619
Pictured Cliffs	4075	3488
Chacra	4732	2831
Cliffhouse	5750	1813
Menefee	5840	1723
Point Lookout	6241	1322
Gallup	7196	397
Dakota	8377	-814
Morrison Bluff		
Summerville		
Todilto		
Entrada		
Navajo		
Wingate		
Chinle		
DeChelly		
Hermosa		
Molas		
Mississippian Leadville		
T.D.	8577	-1014

Estimated KB elevation: 7518.

Drilling fluid to TD will be a low solids non-dispersed mud system. Open hole logging program will include logs from TD to below surface casing.

DIL-SP-GR, FDC-CNL-GR

Completion design will be based on these logs. No cores or drill stem tests will be taken.

Operations will commence when permitted and last approximately 10 wks weeks.

Amoco's standard blowout prevention will be employed (see attached drawing).

PE7

FARMINGTON DISTRICT COMPLETION
PROCEDURE

Date: 10/1/85

WELL NAME: Jicarilla Apache A 113 # 15 FIELD: O, tio Gallup- Dakota

LOCATION: SE/4 SE/4 Sec. 25-T26N-R3W FORMATION(S): Gallup- Dakota

Rio Arriba County, NM

ELEVATIONS: KB: 7517' TD: 8540' PBD: 8494

CASING: 3 5/8" 24 # J-55 @ 339'

5 1/2" 15.5 # K-55 @ 8540'

LOGS: D14-SP-GR, FDC-CNL-GR-Caliper

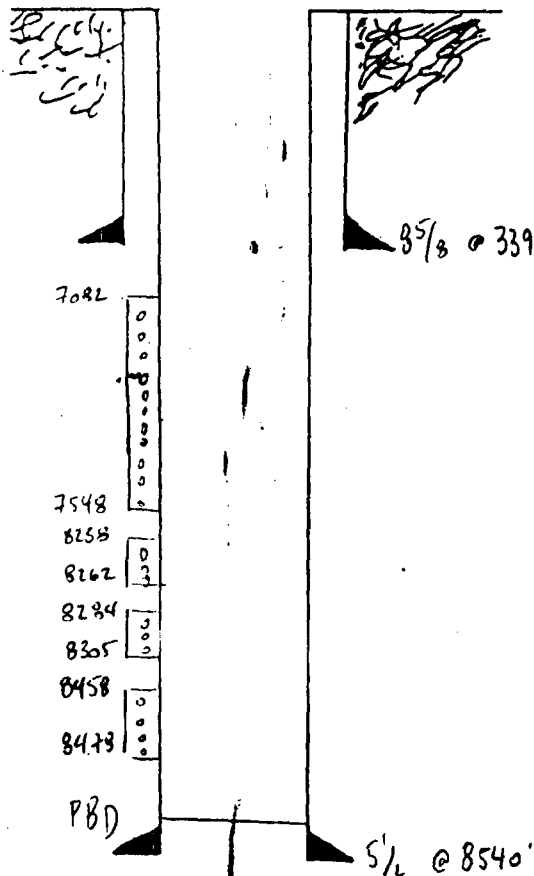
DV TOOL SET AT: 4557

PROPOSE: Initial Completion

DBB DBB BJW	TWE	(GDM) DHS	MCH (RGH) BVD GMK	RWO/AJM	2DF	EDA ENGR	FILE
				Perforating Co: Gearhart			
				Stimulation Co: Dowell			

WELLBORE SKETCH

PROCEDURE



- 1) MUKUSU
- 2) T1H w/ 2 3/8" tbg. and bit and clean out to PBD.
- 3) Pressure test the casing to 3800 psi.
- 4) Displace the hole w/ 2% KCl water and circulate clean. Reciprocate and rotate the tbg. while circulating clean.
- 5) Run junk basket and gauge ring to bottom
- 6) Swab the fluid level down to 7500'.
- 7) Perforate the induction log interval from 8458 - 8478 w/ 4" casing guns, 4 JSPPF, and 120° phasing. Use hollow steel carrier guns w/ Gearhart DML Densijet XIX charges.

DISTRICT MANAGER

R. J. Bruns

DISTRICT ENGINEER

J. Blevins 100385

DISTRICT DRILLING SUPERVISOR

T. W. Evers

ENGINEER

Ed Alizadeh

x 246

(326-2368)

DATE

Jicarilla Apache A 118 #15

- 8) Breakdown the Lower Dakota with 15,000 gallons of 2% KCl water @ 15 BPM. ATP should be 2500 psi. Maximum pressure is 3800 psi.
- 9) Flow back the breakdown immediately after finishing the job. Swab if necessary.
- 10) Continue to test the Lower Dakota until notified by the main office.
- 11) If necessary, a fracture design will be distributed for the Lower Dakota.
Otherwise, continue on with this procedure.
- 12) Set a CIBP @ 8400'.
- 13) Swab the fluid level down to 7000'.
- 14) Perforate the induction log intervals from 8238-8262 and 8284-8305 w/ 4" casing guns, 4 JSPE, and 120° phos na. Use hollow steel carrier guns w/ Gearhart DMC Densijet ~~XL~~ charges.
- 15) Breakdown the Main Dakota w/ 15,000 gallons of 2% KCl water @ 15 BPM. ATP should be 2500 psi. Maximum pressure is 3800 psi.
- 16) Flow back the breakdown immediately after finishing the job. Swab if necessary.
- 17) Test the Main Dakota until notified by the Main office.
This test will determine if we frac the Main Dakota.
If we decide to frac the Main Dakota, go to the next step;
If not Set a CIBP @ 8200 and go to step 26.

Jicarilla Apache A 113 # 15

- 18) Frac the Main Dakota down the casing w/ 60,000 gallons of 30 # gelled kcl water w/ 65,000 lbs. of 20-40 sand.

Add 1 gallon surfactant per 1000 gallons of fluid Average treating pressure should be 2000 psi @ 30 BPM.
Maximum pressure is 3800 psi.

STAGE	FLUID VOL.	SLURRY VOL	SAND CONC.	SAND
1	20,000 gal	20,000 gal	0	0
2	15,000 gal	15,683 gal	1.0	15,000 #
3	25,000 gal	27,275 gal	2.0	50,000 #
	60,000 gal	62,958 gal		65,000 #

NOTES:

- 1) Run $\frac{1}{2}$ milliwire per 1000 lbs sand (32.5 milliwires)
 - 2) Obtain ISIP, 5, 10, and 15 minute sip's.
 - 3) Please steam clean all frac tanks, sieve test the sand, and check the gel quality of all tanks immediately prior to the job.
- 19) Flush w/ 8000 gallons of 2% kcl water or 30 # gelled water.
- 20) SI well 24 hrs. to allow frac to heal.
- 21) Run GR tracer survey.
- 22) TIF w/ 4bg. and flow back frac. Start flowing through a $\frac{1}{4}$ " choke.
DO NOT PRODUCE SAND
- 23) Flow test until notified by main office. Swab if necessary.
- 24) TOH w/ 4bg.
- 25) Set a retrievable BP @ 7700'.
- 26) Pressure test the BP to 3800 psi. Swab the fluid level down to 6000' prior to perforating.
- 27) Perforate the induction log interval from 7082-7548 w/ 4" casing guns, 1 JSPP, and 120° phasing Use hollow steel carrier guns w/ Gearhart DMC Densijet XIX charges.

Jicarilla Apache A 11B#15

28) Frac the Gallup down casing w/ 325,000 gallons of 30# gelled water w/ 330,000 pounds of 20-40 sand.

Add 1 gallon surfactant per 1000 gallons fluid. Average treating pressure should be 2500 psi @ 60 BPM.

Maximum pressure is 3800 psi.

STAGE	FLUID VOL.	SLURRY VOL.	SAND CONC.	SAND
1	120,000 gal	120,000 gal	0	0
2	80,000 gal	83,641 gal	1	80,000 #
3	125,000 gal	136,377 gal	2	250,000 #
	325,000 gal	340,018 gal		330,000 #

Notes: 1) Obtain ISIP, 5, 10, and 15 minute SIP's.

2) Please steam clean all frac tanks, sieve test the sand, and check the gel quality of all tanks using a Fann V-G meter.

29) Flush w/ 6900 gallons of 2% KCl or 30# gelled water

30) SI overnight + 24 hrs to allow the frac to heal.

31) T1H w/ tbg and flow back frac through a 1/4" choke.

Do NOT PRODUCE SAND

32) Flow test until notified by main office.

33) T1H w/ tbg.

34) T1H w/ tbg and retrieving head and retrieve BP @ 7700'

35) T1H w/ tbg, w/ sandbath collar and seating nipple and land @ 3310'.

36) T1H w/ 2" x 1 1/2" x 10' pump w/ 220 3/4" rods and 112 7/8" rods.

37) Set a 320 pumping unit.

38) Pump test for GOR and IP data until notified by main office.

NOTE: 1) Use Biady Sand

2) Report BW and BWTR in the daily wire.

3) Perform all Quality Control Checks

FARMINGTON DISTRICT
DRILLING PROGRAM

Well Name: Jicarilla Contract A118 No. 15
Location: SE/4 SE/4, Section 25, T26N, R3W
Rio Arriba County, New Mexico

Elevations: 7505' GL 7352' KB

~~W~~ ~~E~~ TWE AJM/RWO 2/FF RND ENGR. File

Estimated Formation Tops

<u>Formation</u>	<u>Depth</u>
Ojo Alamo	3310'
Fruitland	3840'
Pictured Cliffs	4030'
Chacra	4680'
Cliffhouse	5710'
Menefee	5800'
Point Lookout	6700'
Gallup	7155'
Dakota	8330'
TD	8540'

Drilling Program

<u>Interval</u>	<u>Hole Size</u>	<u>Casing</u>	<u>Comments</u>
0-300'	12 1/4"	8 5/8"	None.
300'- 8540'	7 7/8"	5 1/2"	Mesaverde lost circulation. Run Stratabit on daywork from 6350'-8180'. Run bit with a shock sub.

Logging Program

<u>Log Type</u>	<u>Intervals</u>
DIL-SP-GR	4000' - TD
FDC-CNL-GR-Caliper	4000' - TD
Caliper-GR	to surface casing.

Cementing Program

<u>Casing Type</u>	<u>Cement</u>
<u>Surface:</u>	300 sx. Class B, 2% CaCl ₂
<u>Production:</u>	Stage tool @ 4500' Precede with 30 bbl water. Rotate casing on first stage and batch mix.
First Stage Lead: 65:35:6 Class B, 2 ppsk Tuffplug, 12.0 ppg, 1.98 ft ³ /sk, 10.9 gal/sk.	

- 2 -

First Stage Tail: 50:50:2 Class B, 10% salt, .6% FLA, .25#/sk
Flocele, 13.93 ppg, 1.21 ft³/sk, 5.24 gal/sk.

Second Stage: 65:35:6 Class B, 2 ppsk Tuffplug, 12.0 ppg,
1.98 ft³/sk, 10.9 gal/sk.

District Drilling Supervisor _____

Drilling Engineer RND _____

Date 9/12/85 _____

ENG19

DAILY COMPLETION REPORT APACHE CORPORATION

Pg 10F2

K.B. _____

DATE 9-25-92 DAY 05 WELL NAME A-118 #15

DAYS WELL ON COMPLETION _____ PBD _____ SITP 50 HRS WSI 14

PRESENT OPERATIONS CLEAN OUT FRAC.

FORMATION BEING TESTED ^{BLANCO} MESA VERDE PRESENT PERFORATIONS 6046-6051, 6059-6081

SWABBING FOR DAY - IFL _____ NO OF RUNS _____ FFL _____ HRS SWABBED _____

REC: _____ BO _____ BW _____

24 HR PRODUCTION _____ BO _____ BW _____ MCF _____ OK _____ FTP _____

_____ SPM _____ STROKE LENGTH _____ PUMP SIZE _____

DAILY REPORT: (FOR PREVIOUS DAY)

TBG. COUNT	50" SITP. RU Wellhead isolation tool.				PUMP SIZE
Size	RU 1/2 gal 3 FRAC TANKS. TEST				
Weight	LINES to 4000 PSI (OK). START FRAC				
Grade	? Pump as follows:				ROD COUNT
Joints	PAD - 4 BPM	19 bbls	0 PSI		K-Bars
Feet	" - 10 BPM	84 bbls	0 PSI		3/4"
R.N.	" - 12 BPM	27 bbls	0 PSI		7/8"
Packer	" - 12 BPM	27 bbls	900 PSI		1" Plain
Anchor	" - 20 BPM	192 bbls	1236 PSI		1" Scraper
Tail Pipe	SAND 1 PPG	20 BPM	114 bbls	1131 PSI	PONY RODS
	" 2 PPG	20 BPM	85 bbls	879 PSI	2'
CSG. SIZE	" 3 PPG	20 BPM	78 bbls	641 PSI	4'
7"	" 4 PPG	20 BPM	81 bbls	499 PSI	6'
8 1/4"	" 5 PPG	20 BPM	123 bbls	330 PSI	8'
	" 6 PPG	20 BPM	106 bbls	229 PSI	POLISH ROD
	Flush	20 BPM	111 bbls	188 PSI	

DAILY WELL COST _____ CUM WELL COST _____

RIG CO.
RIG NO.
RIG COST
B.O.P. & ACCUM.
SUPERVISION
TEST TANK
RENTAL TOOLS
TRUCKING
ROUSTABOUTS

SALT WATER
HOT OIL TRUCK
H2S SAFETY
ACID
CEMENT
LOGGING
PERF.
WIRELINE
OTHER. _____

DAILY COMPLETION REPORT APACHE CORPORATION

K.B. _____

DATE 9-25-93 DAY 05 WELL NAME A-118 #15

DAYS WELL ON COMPLETION _____ PBD _____ SITP _____ HRS WSI _____

PRESENT OPERATIONS _____

FORMATION BEING TESTED _____ PRESENT PERFORATIONS _____

SWABBING FOR DAY • IFL _____ NO OF RUNS _____ FFL _____ HRS SWABBED _____

REQ. _____ BO _____ BW _____

24 HR PRODUCTION _____ BO _____ BW _____ MCF _____ CK _____ FTP _____

_____ BPM _____ STROKE LENGTH _____ PUMP SIZE _____

DAILY REPORT: (FOR PREVIOUS DAY)

TBG. COUNT	FLUSH 16 BPM 27 bbls 911 PSI	PUMP SIZE
Size	SHUT DOWN - ISIP 840 #	
Weight	5 MIN SIP - 508 # 10 MIN. SIP - 453 #	
Grade	15 MIN. SIP - 421 # RD RD D/S	ROD COUNT
Joints	RD Wellhead Isolation Tool. 31 W	K-Bars
Feet	30 FN.	3/4"
B.N.		7/8"
Packer	TOTALS Pumped - WATER 922 BLWTR	1" Plain
Anchor	SAND 80,470 #	1" Scraper
Tail Pipe		PONY RODS
		2'
Csg. SIZE		4'
7"		6'
8 1/2"		8'
		POLISH ROD

DAILY WELL COST 34615- CUM WELL COST 62365

RIG CO. FLINT
RIG NO.
RIG COST 1200
B.O.P. & ACCUM.
SUPERVISION 300
TEST TANK 500
RENTAL TOOLS 2785
TRUCKING
ROUSTABOUTS

KCL
SALT WATER 1900
HOT OIL TRUCK
H2S SAFETY
ACID
CEMENT
LOGGING
PERF.
WIRELINE
OTHER. FRAC - 27,880 -

DAILY COMPLETION REPORT APACHE CORPORATION

K.B. _____

DATE 10-8-92 DAY 17 WELL NAME A-118 #15

DAYS WELL ON COMPLETION _____ PBD _____ SITP _____ HRS WSI _____

PRESENT OPERATIONS CHECK FILL, LAND TBG. RETURN TO PROD.
 FORMATION BEING TESTED BIANCO MV PRESENT PERFORATIONS 5677-5688, 5775-5788
5871-5878, 5884-5888
6046-6051, 6059-6081

SWABBING FOR DAY • IFL _____ NO OF RUNS _____ FFL _____ HRS SWABBED _____

REQ: 8 BO 33 BW

24 HR PRODUCTION _____ BO _____ BW _____ MCF _____ CK _____ FTP

_____ BPM _____ STROKE LENGTH _____ PUMP SIZE

DAILY REPORT: (FOR PREVIOUS DAY)

TBG. COUNT	WELL FLOWED OVERNIGHT TO SYSTEM	PUMP SIZE
Size	FROM 1:00 PM. UNTIL 8:00 AM	
Weight	17 hr PRODUCTION -	
Grade	112 MCF	ROD COUNT
Joints	8 BO	K-Bars
Feet	33 BW	3/4"
S.N.	75 # T.P. 440 # C.P.	7/8"
Packer		1" Plain
Anchor	317 BLWTR @ 8:00 AM	1" Scraper
Tail Pipe		PONY RODS
		2'
OSG. SIZE		4'
7"		6'
8 1/4"		8'
		POLISH ROD

DAILY WELL COST 2150 - CUM WELL COST 141567 -

RIG CO. FLINT
 RIG NO.
 RIG COST 1800
 B.O.P. & ACCUM.
 SUPERVISION 300
 TEST TANK 150
 RENTAL TOOLS
 TRUCKING
 ROUSTABOUTS

SALT WATER
 HOT OIL TRUCK
 H₂S SAFETY
 ACID
 CEMENT
 LOGGING
 PERF.
 WIRELINE
 OTHER. _____

DAILY COMPLETION REPORT APACHE CORPORATION

K.B. _____

DATE 10/21/93 DAY 27 WELL NAME Vic A118-15

DAYS WELL ON COMPLETION _____ PBD _____ SITP _____ HRS WSI _____

PRESENT OPERATIONS on Production

FORMATION BEING TESTED _____ PRESENT PERFORATIONS _____

SWABBING FOR DAY - IFL _____ NO OF RUNS _____ FFL _____ HRS SWABBED _____

REC: _____ BO _____ BW _____

24 HR PRODUCTION _____ BO _____ BW _____ MCF _____ CK _____ FTP _____

_____ SPM _____ STROKE LENGTH _____ PUMP SIZE _____

DAILY REPORT: (FOR PREVIOUS DAY)

TBG. COUNT	<u>well pumping RDMOSU</u>	PUMP SIZE
Size		
Weight	<u>CSG 160</u>	
Grade	<u>has 148</u>	ROD COUNT
Joints	<u>oil 8.4</u>	K-Bars
Feet	<u>water 60.4</u>	3/4"
S.N.		7/8"
Packer		1" Plain
Anchor		1" Scraper
Tail Pipe		PONY RODS
		2'
CSG. SIZE		4'
7"		6'
8 1/2"		8'
		POLISH ROD

DAILY WELL COST 500- CUM WELL COST 168,834

RIG CO. Alint
 RIG NO.
 RIG COST
 B.O.P. & ACCUM.
 SUPERVISION
 TEST TANK
 RENTAL TOOLS
 TRUCKING
 ROUSTABOUTS

SALT WATER
 HOT OIL TRUCK
 H₂S SAFETY
 ACID
 CEMENT
 LOGGING
 PERF.
 WIRELINE
 OTHER. _____

DAILY COMPLETION REPORT APACHE CORPORATION

K.B. _____

DATE 10-22-93 DAY 28 WELL NAME A-118#15

DAYS WELL ON COMPLETION _____ PBTD _____ SITP _____ HRS WSI _____

PRESENT OPERATIONS Well Pumping

FORMATION BEING TESTED MU PRESENT PERFORATIONS _____

SWABBING FOR DAY - IFL _____ NO OF RUNS _____ FFL _____ HRS SWABBED _____

REC: _____ BO _____ BW _____

24 HR PRODUCTION _____ BO _____ BW _____ MCF _____ CK _____ FTP _____

_____ SPM _____ STROKE LENGTH _____ PUMP SIZE _____

DAILY REPORT: (FOR PREVIOUS DAY)

TBG. COUNT	<u>oil - 1.67</u>	PUMP SIZE
Size	<u>water - 73.4</u>	
Weight	<u>gas - 161 MCF</u>	
Grade		ROD COUNT
Joint	<u>Well pumping. Test Reports</u>	K-Bars
Feet	<u>being sent.</u>	3/4"
B.N.		7/8"
Packer	<u>Final Report</u>	1" Plain
Anchor		1" Scraper
Tail Pipe		PONY RODS
		2'
CSG. SIZE		4'
7"		6'
5 1/2"		8'
		POLISH ROD

DAILY WELL COST 0 CUM WELL COST 168,834-

RIG CO.
RIG NO.
RIG COST
B.O.P. & ACCUM.
SUPERVISION
TEST TANK
RENTAL TOOLS
TRUCKING
ROUSTABOUTS

SALT WATER
HOT OIL TRUCK
H₂S SAFETY
ACID
CEMENT
LOGGING
PERF.
WIRELINE
OTHER. _____

APACHE CORP.

TOTAL:.....

Jic A11B-15

WELL				METER				(1) TANKS (2)			PRODUCTION	REMARKS	
Site Date Name	Formation	Choke Size	Tubing Pressure	Casing Pressure	Static	Differential	Orifice	MEF Volume	Ft.	In.	water In.	Daily Bbls.	
10-16-93				95				149			39	8.4	MV Recompaction
10-17				55				90			0	0	oil recovered from swab tank
10-18				45				90			0	0	change pump
10-19				45				90			5	0	change pump - swab
10-20				60				148			60.4	8.4	Recovered all 60
10-21				60				161			43.4	1.67	Revised all 60
10-22				60				171			44.5	3.34	
10-23				60				169			46.35	0	
10-24				50				112			19.18	8.35	AMP UNIT DOWN - STARTED UP -
10-25				60				84			31.75	1.67	AMP UNIT DOWN - STARTED
10-26				40				179			38.75	2.57	
10-27				65				170			28.4	0.84	
10-28				34				170			26.7	2.50	
10-29				40				169			24.3	1.67	
10-30				40				120			25.1	.84	comp. down 3 hrs. - Low Lub Oil
10-31				40				136			19.2	.42	" " " "
11-1				52				155			25.1	1.25	" " " "
11-2				60				66			18.3	1.67	comp. down 10 hrs.
11-3													
11-4											33.810	2.72 bbl	

Previously T/A
APACHE CORP.

Daily Gas Operations

Daily Mileage End:
Beginning:
TOTAL:

Lease Operator A118-15

DATE

WELL				METER				(1) TANKS (2)				PRODUCTION	REMARKS	
Name	Formation	Choke Size	Tubing Pressure	Casing Pressure	Static	Differential	Orifice	Volume	Ft.	In.	Ft.	In.		Daily Bbls.
12-5														ROMOSU left S.I.
12-6								0						Would not unload S.I. equalized
12-7														S.I.
12-8														S.I.
12-9			260	260	-	465	would not unload-						0	Start comp. Back on. csg only
12-10								313					0	
12-11								0					0	Comp down 24 hrs. ?
12-12								101					0	
12-13								101	at				0	
12-14								101					0	
12-15								0					0	S.I. 24 hrs EPNG line freeze
12-16								0					0	P.I. 24 hrs EPNG line freeze
12-17								0					0	Turn BACK on
12-18								192					0	
12-19								197					0	
12-20								258					0	
12-21								258					0	
12-22								258					0	
12-23								258					0	
12-24								299					0	
12-25								299	at.				0	
12-26								40					0	High numbers before?
12-27								40						
12-28								40						
12-29								40						LINEAL Report

APACHE CORPORATION

JIC APACHE A118 #15

Fracture Treatment Execution Report

Prepared for: RUSSELL PULLIN

WEST LINDRITH DAKOTA

LOWER MESAVERDE

RIO ARRIBA

NEW MEXICO

TREATMENT LOG							
TIME HH:MM:SS	PUMP-TIM MIN	TR-PRES PSI	SLUR-RAT BPM	TOT-SLUR BBL	TOT-FLUI BBL	PROP-CON PPA	TOT-PROP lb
11:03:36	8.13	-5	12.12	57.0	57.0	0.0	0
11:03:51	8.38	920	12.12	60.0	60.0	0.0	0
11:04:06	8.63	1103	12.00	63.0	63.0	0.0	0
11:04:21	8.88	1195	13.62	66.3	66.3	0.0	0
11:04:36	9.13	1204	14.75	69.8	69.8	0.0	0
11:04:51	9.38	1195	15.25	73.6	73.6	0.0	0
11:05:06	9.63	1190	16.12	77.5	77.5	0.0	0
11:05:21	9.88	1236	18.87	82.2	82.2	0.0	0
11:05:36	10.13	1222	20.50	87.1	87.1	0.0	0
11:05:51	10.38	1199	19.25	92.0	92.0	0.0	0
11:06:06	10.63	1181	20.25	97.0	97.0	0.0	0
11:06:21	10.88	1172	20.12	102.0	102.0	0.0	0
11:06:36	11.13	1154	20.12	107.1	107.1	0.0	0
11:06:51	11.38	1131	20.12	112.1	112.1	0.0	0
11:07:06	11.63	1135	20.12	117.1	117.1	0.0	0
11:07:21	11.88	1126	20.12	122.2	122.2	0.0	0
11:07:36	12.13	1158	20.12	127.2	127.2	0.0	0
11:07:51	12.38	1167	20.12	132.2	132.2	0.0	0
11:08:06	12.63	1181	20.12	137.3	137.3	0.0	0
11:08:21	12.88	1186	20.12	142.3	142.3	0.0	0
11:08:36	13.13	1172	20.12	147.3	147.3	0.0	0
11:08:51	13.38	1186	20.12	152.4	152.4	0.0	0
11:09:08	13.67	1181	20.12	158.1	158.1	0.0	0
11:09:25	13.95	1172	20.12	163.8	163.8	0.0	0
11:09:40	14.20	1167	20.12	168.8	168.8	0.0	0
11:09:55	14.45	1176	20.12	173.8	173.8	0.0	0
11:10:10	14.70	1167	20.12	178.9	178.9	0.0	0
11:10:25	14.95	1167	20.12	183.9	183.9	0.0	0
11:10:40	15.20	1163	20.25	188.9	188.9	0.0	0
11:10:55	15.45	1154	20.12	194.0	194.0	0.0	0
11:11:10	15.70	1158	20.12	199.0	199.0	0.0	0
11:11:25	15.95	1163	20.12	204.1	204.1	0.0	0
11:11:40	16.20	1154	20.12	209.1	209.1	0.0	0
11:11:55	16.45	1158	20.12	214.1	214.1	0.0	0
11:12:10	16.70	1140	20.12	219.2	219.2	0.0	0
11:12:25	16.95	1163	20.25	224.2	224.2	0.0	0
11:12:40	17.20	1144	20.12	229.2	229.2	0.0	0
11:12:55	17.45	1163	20.12	234.3	234.3	0.0	0
11:13:10	17.70	1154	20.12	239.3	239.3	0.0	0
11:13:24	Changed PROP-CON Calibration						
11:13:32	START RECORDING POD DATA						
11:13:50	18.37	1163	20.12	252.8	252.8	0.0	0

TREATMENT LOG							
TIME HH:MM:SS	PUMP-TIM MIN	TR-PRES PSI	SLUR-RAT BPM	TOT-SLUR BBL	TOT-FLUI BBL	PROP-CON PPA	TOT-PROP lb
11:14:05	18.62	1144	20.12	257.8	257.8	0.0	0
11:14:20	18.87	1144	20.25	262.8	262.9	-0.1	0
11:14:35	19.12	1149	20.12	267.9	267.9	-0.1	0
11:14:37	START PUMPING PROPPANT						
11:14:55	19.45	1135	20.12	274.6	274.7	0.0	-11
11:15:10	19.70	1131	20.25	279.6	279.6	0.6	66
11:15:25	19.95	1126	20.25	284.7	284.5	0.9	239
11:15:30	NEW STAGE						
11:15:45	20.28	1103	20.25	291.4	291.0	0.9	483
11:16:00	20.53	1099	20.37	296.5	295.8	0.9	669
11:16:15	20.78	1076	20.37	301.6	300.7	0.9	858
11:16:30	21.03	1067	20.37	306.6	305.6	0.9	1051
11:16:50	21.35	1057	20.12	313.1	311.7	1.1	1334
11:17:05	21.60	1035	20.25	318.1	316.5	1.1	1548
11:17:20	21.85	1039	20.37	323.2	321.4	0.9	1768
11:17:35	22.10	1007	20.25	328.3	326.2	1.2	1985
11:17:50	22.35	998	20.37	333.4	331.0	1.8	2255
11:18:06	22.60	989	20.37	338.5	335.8	1.2	2523
11:18:25	22.93	966	20.37	345.2	342.2	1.4	2873
11:18:40	23.18	961	20.37	350.3	347.0	1.6	3147
11:18:56	23.43	952	20.37	355.4	351.8	1.4	3424
11:19:12	NEW STAGE						
11:19:31	24.03	925	20.37	367.6	363.2	1.5	4133
11:19:46	24.28	911	20.37	372.7	368.0	1.6	4453
11:20:01	24.53	906	20.37	377.8	372.7	1.7	4786
11:20:16	24.78	906	20.37	382.9	377.5	1.7	5116
11:20:31	25.03	893	20.37	388.0	382.2	1.8	5454
11:20:46	25.28	879	20.37	393.1	386.9	1.9	5822
11:21:01	25.53	865	20.37	398.2	391.6	1.9	6209
11:21:16	25.78	838	20.37	403.3	396.2	2.1	6595
11:21:31	26.03	824	20.37	408.4	400.9	2.1	6976
11:21:46	26.28	801	20.37	413.5	405.6	2.0	7386
11:22:01	26.53	792	20.37	418.6	410.2	2.0	7793
11:22:16	26.78	778	20.37	423.7	414.9	2.2	8213
11:22:31	27.03	760	20.37	428.8	419.5	2.4	8657
11:22:46	27.28	746	20.37	433.8	424.1	2.3	9099
11:23:01	27.53	742	20.37	438.9	428.7	2.2	9547
11:23:02	NEW STAGE						
11:23:21	27.87	723	20.37	445.7	434.8	2.5	10179

TREATMENT LOG							
TIME HH:MM:SS	PUMP-TIM MIN	TR-PRES PSI	SLUR-RAT BPM	TOT-SLUR BBL	TOT-FLUI BBL	PROP-CON PPA	TOT-PROP lb
11:23:36	28.12	705	20.37	450.8	439.4	2.6	10654
11:23:51	28.37	700	20.37	455.9	444.0	2.6	11148
11:24:06	28.62	687	20.37	461.0	448.5	2.7	11663
11:24:21	28.87	668	20.37	466.1	453.1	2.7	12165
11:24:39	29.17	645	20.37	472.2	458.5	2.8	12780
11:24:56	29.45	641	20.37	478.0	463.6	3.0	13383
11:25:11	29.70	623	20.37	483.1	468.1	2.8	13927
11:25:26	29.95	613	20.37	488.2	472.6	3.2	14487
11:25:41	30.20	613	20.37	493.3	477.1	2.9	15062
11:25:56	30.45	604	20.37	498.4	481.6	3.1	15642
11:26:12	30.72	591	20.37	503.8	486.4	3.1	16263
11:26:27	30.97	581	20.50	508.9	490.8	3.4	16886
11:26:42	31.22	563	20.37	514.0	495.2	3.2	17493
11:26:57	31.47	572	20.37	519.1	499.7	3.6	18116
11:27:01	NEW STAGE						
11:27:17	31.80	545	20.37	525.9	505.5	3.4	18953
11:27:32	32.05	540	20.37	531.0	510.0	3.5	19600
11:27:47	32.30	517	20.37	536.1	514.3	3.6	20262
11:28:02	32.55	517	20.37	541.2	518.7	3.5	20913
11:28:17	32.80	508	20.50	546.3	523.1	3.8	21589
11:28:32	33.05	499	20.37	551.4	527.5	3.7	22264
11:28:47	33.30	490	20.37	556.5	531.8	4.0	22966
11:29:02	33.55	481	20.50	561.6	536.2	4.0	23678
11:29:17	33.80	467	20.37	566.7	540.5	4.0	24398
11:29:32	34.05	458	20.37	571.8	544.8	4.0	25121
11:29:47	34.30	472	20.50	576.9	549.2	4.1	25862
11:30:02	34.55	453	20.50	582.1	553.5	4.2	26607
11:30:18	34.80	439	20.37	587.2	557.8	4.0	27344
11:30:33	35.05	430	20.50	592.3	562.1	4.0	28088
11:30:48	35.30	407	20.50	597.4	566.4	4.4	28866
11:31:03	35.55	435	20.50	602.5	570.7	4.3	29634
11:31:10	NEW STAGE						
11:31:28	35.97	412	20.62	611.0	577.8	4.5	30945
11:31:43	36.22	385	20.50	616.2	582.1	4.3	31735
11:31:58	36.47	394	20.62	621.3	586.3	4.7	32568
11:32:13	36.72	366	20.62	626.5	590.6	4.7	33399
11:32:28	36.97	394	20.62	631.6	594.8	4.5	34232
11:32:46	37.25	385	20.62	637.5	599.6	4.8	35195
11:33:02	37.53	330	20.62	643.3	604.5	4.8	36152
11:33:17	37.78	375	20.62	648.5	608.7	5.0	37012
11:33:32	38.03	316	20.62	653.6	612.9	4.8	37888

TREATMENT LOG							
TIME HH:MM:SS	PUMP-TIM MIN	TR-PRES PSI	SLUR-RAT BPM	TOT-SLUR BBL	TOT-FLUI BBL	PROP-CON PPA	TOT-PROP lb
11:33:47	38.28	371	20.62	658.8	617.1	4.5	38765
11:34:02	38.53	311	20.62	663.9	621.3	5.0	39625
11:34:17	38.78	353	20.62	669.1	625.5	5.0	40508
11:34:32	39.03	320	20.62	674.2	629.7	5.0	41396
11:34:47	39.28	293	20.62	679.4	633.9	5.1	42298
11:35:02	39.53	334	20.62	684.5	638.1	5.2	43201
11:35:17	39.78	298	20.62	689.7	642.3	5.3	44124
11:35:32	40.03	293	20.62	694.8	646.4	5.3	45050
11:35:47	40.28	307	20.62	700.0	650.6	5.3	45976
11:36:02	40.53	266	20.62	705.2	654.7	5.4	46905
11:36:17	40.78	288	20.62	710.3	658.9	5.4	47853
11:36:32	41.03	261	20.62	715.5	663.0	5.4	48805
11:36:47	41.28	275	20.62	720.6	667.1	5.6	49757
11:36:51	NEW STAGE						
11:37:08	41.62	261	20.62	727.5	672.6	5.6	51042
11:37:27	41.95	256	20.62	734.4	678.1	5.8	52323
11:37:42	42.20	243	20.62	739.5	682.2	5.4	53304
11:37:57	42.45	234	20.62	744.7	686.3	5.8	54263
11:38:12	42.70	238	20.62	749.8	690.4	5.6	55246
11:38:27	42.95	234	20.62	755.0	694.5	5.7	56231
11:38:42	43.20	229	20.62	760.1	698.6	6.1	57219
11:38:57	43.45	220	20.62	765.3	702.6	5.9	58257
11:39:12	43.70	215	20.50	770.4	706.7	5.9	59281
11:39:27	43.95	220	20.62	775.6	710.7	5.9	60307
11:39:42	44.20	220	20.62	780.7	714.8	5.8	61325
11:39:57	44.45	206	20.62	785.9	718.8	6.0	62345
11:40:12	44.70	215	20.62	791.1	722.9	5.8	63378
11:40:27	44.95	211	20.62	796.2	727.0	6.1	64400
11:40:32	NEW STAGE						
11:40:47	45.28	211	20.62	803.1	732.3	6.0	65778
11:41:06	45.60	206	20.62	809.6	737.5	5.9	67064
11:41:21	45.85	201	20.62	814.8	741.5	6.1	68096
11:41:36	46.10	183	20.62	819.9	745.6	6.0	69112
11:41:51	46.35	174	20.62	825.1	749.7	5.8	70124
11:42:06	46.60	183	20.62	830.2	753.7	6.3	71147
11:42:21	46.85	169	20.62	835.4	757.8	6.1	72166
11:42:36	47.10	183	20.62	840.5	761.8	6.0	73196
11:42:51	47.35	174	20.62	845.7	765.9	6.0	74227
11:43:06	47.60	174	20.62	850.8	769.9	6.2	75255
11:43:21	47.85	183	20.62	856.0	773.9	5.7	76298
11:43:36	48.10	188	20.62	861.2	778.4	1.5	76942

TREATMENT LOG							
TIME HH:MM:SS	PUMP-TIM MIN	TR-PRES PSI	SLUR-RAT BPM	TOT-SLUR BBL	TOT-FLUI BBL	PROP-CON PPA	TOT-PROP lb
11:43:37	STOP PUMPING PROPPANT						
11:43:56	48.43	234	20.62	868.0	785.1	-0.1	76962
11:44:12	48.68	275	20.62	873.2	790.3	-0.1	76962
11:44:14	NEW STAGE						
11:44:32	49.02	293	20.62	880.1	797.2	0.0	76962
11:44:47	49.27	330	20.62	885.2	802.4	0.0	76962
11:45:02	49.52	385	20.50	890.4	807.5	-0.1	76962
11:45:17	49.77	407	20.50	895.5	812.7	0.0	76962
11:45:32	50.02	444	20.50	900.7	817.8	-0.1	76962
11:45:47	50.27	494	20.50	905.8	823.0	0.0	76962
11:46:02	50.52	531	20.50	910.9	828.1	-0.1	76962
11:46:17	50.77	577	20.37	916.0	833.3	-0.1	76962
11:46:32	51.02	600	20.37	921.1	838.4	-0.1	76962
11:46:47	51.27	632	20.37	926.2	843.5	-0.1	76962
11:47:02	51.52	678	20.37	931.3	848.6	0.0	76962
11:47:17	51.77	710	20.37	936.4	853.7	-0.1	76962
11:47:32	52.02	746	20.37	941.5	858.8	0.0	76962
11:47:47	52.27	806	20.37	946.6	863.9	0.0	76962
11:48:02	52.52	856	20.37	951.7	869.0	0.0	76962
11:48:17	52.77	888	20.37	956.8	874.1	0.0	76962
11:48:34	53.05	911	20.37	962.6	879.9	-0.1	76962
11:48:51	53.33	980	20.37	968.3	885.7	0.0	76962
11:49:06	53.58	916	20.37	973.4	890.8	-0.1	76962
11:49:21	53.83	911	16.62	977.7	895.3	-0.7	76962
11:49:37	54.08	998	16.62	981.9	899.5	-0.7	76962
11:49:57	54.42	1039	16.62	987.4	905.2	-0.7	76962
11:50:16	54.75	1003	16.62	992.9	910.9	-0.7	76962
11:50:31	55.00	1007	16.62	997.1	915.2	-0.9	76962
11:50:47	55.25	1117	16.62	1001.3	919.6	-0.8	76962
11:51:06	55.58	938	0.00	1004.2	922.6	-1.2	76962
11:51:21	55.83	861	0.00	1004.2	922.6	-1.2	76962
11:51:36	56.08	819	0.00	1004.2	922.6	-1.3	76962
11:51:51	56.33	783	0.00	1004.2	922.6	-1.2	76962
11:52:06	56.58	746	0.00	1004.2	922.6	-1.2	76962
11:52:21	56.83	710	0.00	1004.2	922.6	-1.3	76962
11:52:36	57.08	687	0.00	1004.2	922.6	-1.1	76962
11:52:51	57.33	668	0.00	1004.2	922.6	-0.9	76962
11:53:06	57.58	650	0.00	1004.2	922.6	-0.6	76962
11:53:21	57.83	632	0.00	1004.2	922.6	-0.6	76962
11:53:36	58.08	613	0.00	1004.2	922.6	-0.4	76962

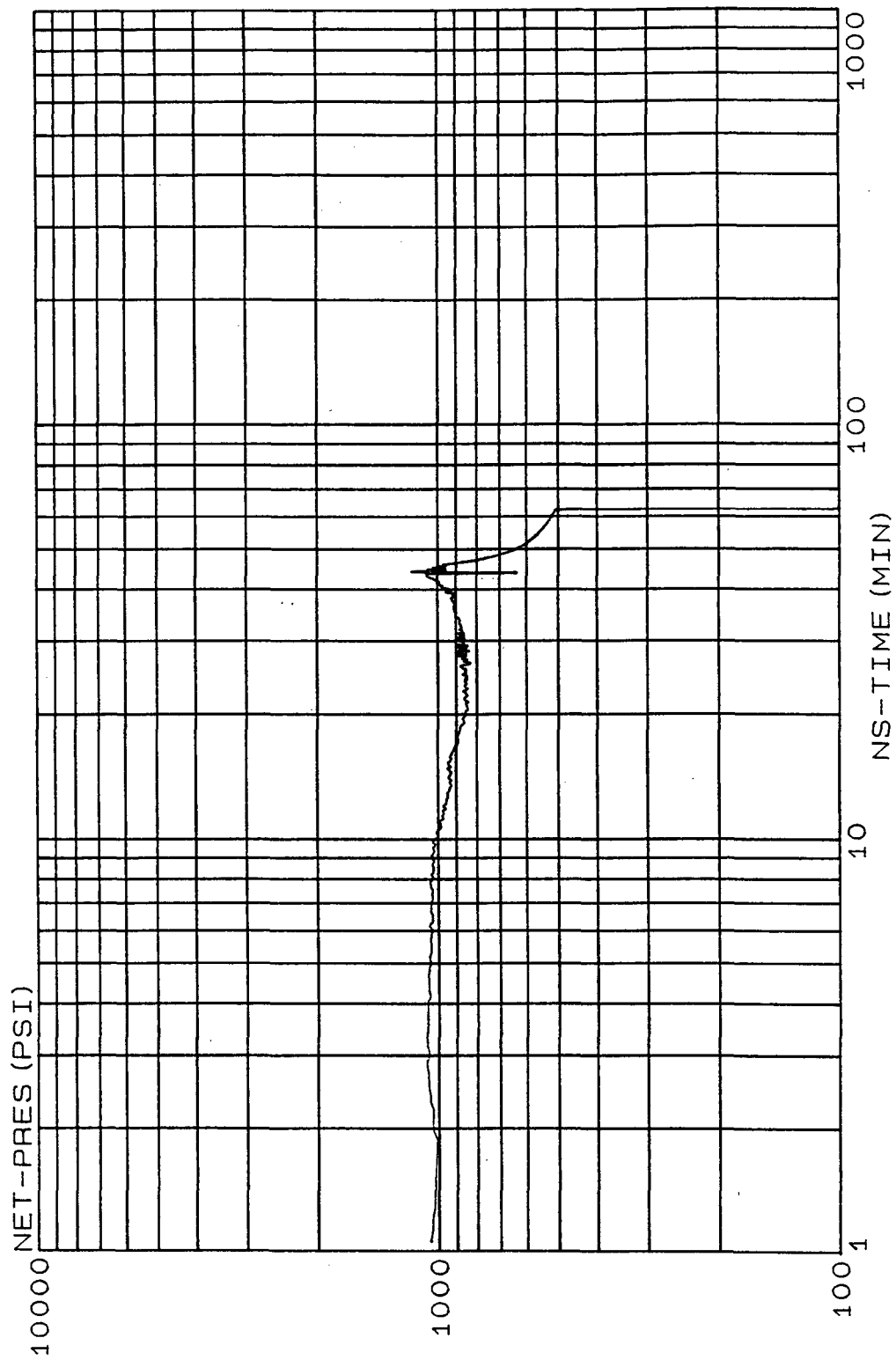
TREATMENT LOG							
TIME HH:MM:SS	PUMP-TIM MIN	TR-PRES PSI	SLUR-RAT BPM	TOT-SLUR BBL	TOT-FLUI BBL	PROP-CON PPA	TOT-PROP lb
11:53:51	58.33	600	0.00	1004.2	922.6	-0.4	76962
11:54:06	58.58	586	0.00	1004.2	922.6	-0.5	76962
11:54:21	58.83	577	0.00	1004.2	922.6	-0.4	76962
11:54:36	59.08	568	0.00	1004.2	922.6	-0.3	76962
11:54:51	59.33	559	0.00	1004.2	922.6	-0.3	76962
11:55:06	59.58	549	0.00	1004.2	922.6	-0.3	76962
11:55:21	59.83	540	0.00	1004.2	922.6	-0.3	76962
11:55:36	60.08	531	0.00	1004.2	922.6	-0.4	76962
11:55:51	60.33	526	0.00	1004.2	922.6	-0.3	76962
11:56:06	60.58	522	0.00	1004.2	922.6	-0.2	76962
11:56:21	60.83	517	0.00	1004.2	922.6	-0.2	76962
11:56:36	61.08	508	0.00	1004.2	922.6	-0.2	76962
11:56:51	61.33	504	0.00	1004.2	922.6	-0.2	76962
11:57:06	61.58	504	0.00	1004.2	922.6	-0.2	76962
11:57:23	61.87	494	0.00	1004.2	922.6	-0.2	76962
11:57:40	62.15	490	0.00	1004.2	922.6	-0.2	76962
11:57:55	62.40	490	0.00	1004.2	922.6	-0.2	76962
11:58:10	62.65	485	0.00	1004.2	922.6	-0.2	76962
11:58:25	62.90	481	0.00	1004.2	922.6	-0.2	76962
11:58:40	63.15	476	0.00	1004.2	922.6	-0.2	76962
11:58:55	63.40	476	0.00	1004.2	922.6	-0.2	76962
11:59:10	63.65	472	0.00	1004.2	922.6	-0.1	76962
11:59:25	63.90	467	0.00	1004.2	922.6	-0.1	76962
11:59:40	64.15	467	0.00	1004.2	922.6	-0.2	76962
11:59:55	64.40	462	0.00	1004.2	922.6	-0.2	76962
12:00:10	64.65	462	0.00	1004.2	922.6	-0.2	76962
12:00:25	64.90	458	0.00	1004.2	922.6	-0.2	76962
12:00:40	65.15	458	0.00	1004.2	922.6	-0.1	76962
12:00:55	65.40	453	0.00	1004.2	922.6	-0.1	76962
12:01:10	65.65	453	0.00	1004.2	922.6	-0.1	76962
12:01:25	65.90	449	0.00	1004.2	922.6	-0.1	76962
12:01:40	66.15	449	0.00	1004.2	922.6	-0.2	76962
12:01:55	66.40	449	0.00	1004.2	922.6	-0.1	76962
12:02:10	66.65	444	0.00	1004.2	922.6	-0.2	76962
12:02:25	66.90	444	0.00	1004.2	922.6	-0.1	76962
12:02:40	67.15	439	0.00	1004.2	922.6	-0.1	76962
12:02:55	67.40	439	0.00	1004.2	922.6	-0.1	76962
12:03:10	67.65	439	0.00	1004.2	922.6	-0.1	76962
12:03:25	67.90	435	0.00	1004.2	922.6	-0.2	76962
12:03:40	68.15	435	0.00	1004.2	922.6	-0.1	76962
12:03:55	68.40	430	0.00	1004.2	922.6	-0.1	76962
12:04:10	68.65	430	0.00	1004.2	922.6	-0.2	76962
12:04:25	68.90	430	0.00	1004.2	922.6	-0.1	76962

TREATMENT LOG							
TIME HH:MM:SS	PUMP-TIM MIN	TR-PRES PSI	SLUR-RAT BPM	TOT-SLUR BBL	TOT-FLUI BBL	PROP-CON PPA	TOT-PROP lb
12:04:40	69.15	430	0.00	1004.2	922.6	-0.1	76962
12:04:55	69.40	426	0.00	1004.2	922.6	-0.2	76962
12:05:10	69.65	426	0.00	1004.2	922.6	-0.1	76962
12:05:25	69.90	426	0.00	1004.2	922.6	-0.1	76962
12:05:40	70.15	421	0.00	1004.2	922.6	-0.1	76962
12:05:55	70.40	421	0.00	1004.2	922.6	-0.2	76962
12:06:12	70.68	421	0.00	1004.2	922.6	-0.1	76962
12:06:29	70.97	417	0.00	1004.2	922.6	-0.1	76962
12:06:44	71.22	417	0.00	1004.2	922.6	-0.1	76962
12:06:59	71.47	417	0.00	1004.2	922.6	-0.1	76962
12:07:14	71.72	417	0.00	1004.2	922.6	-0.1	76962
12:07:29	71.97	412	0.00	1004.2	922.6	-0.1	76962
12:07:44	72.22	41	0.00	1004.2	922.6	0.0	76962
12:07:59	72.47	-23	0.00	1004.2	922.6	0.0	76962



PPR TREATMENT REPORT
24 Sep 93

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JIC APACHE A118 #15
YF-130 MESAVERDE

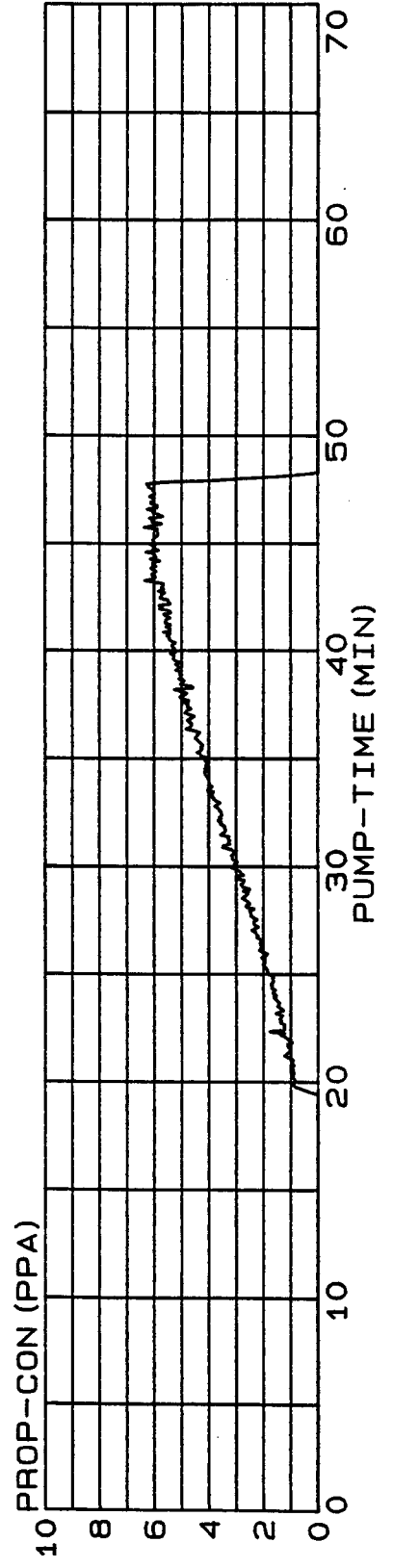
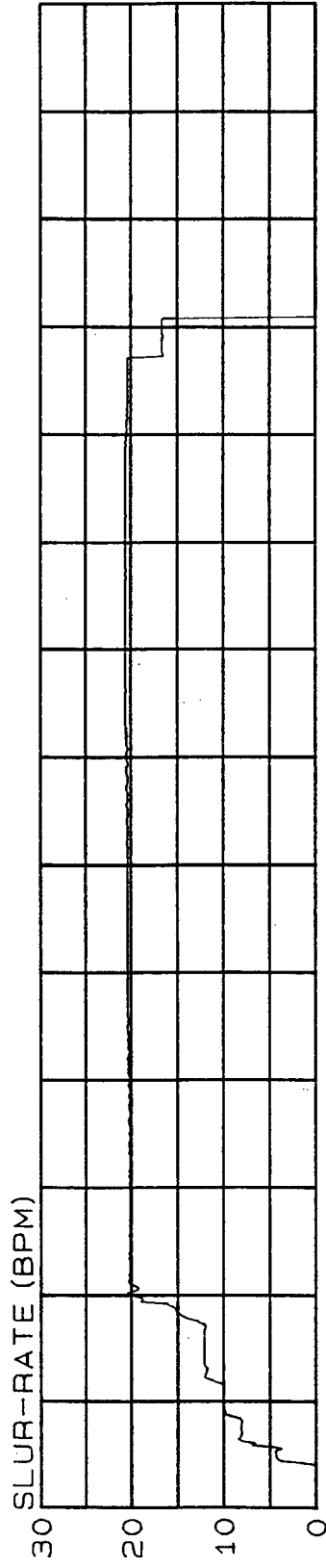
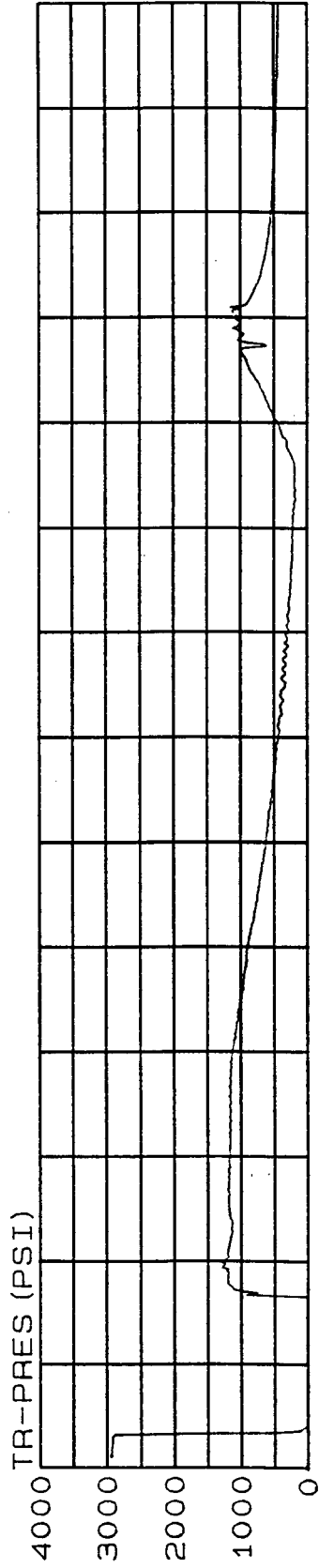




PPR TREATMENT REPORT

24 Sep 93

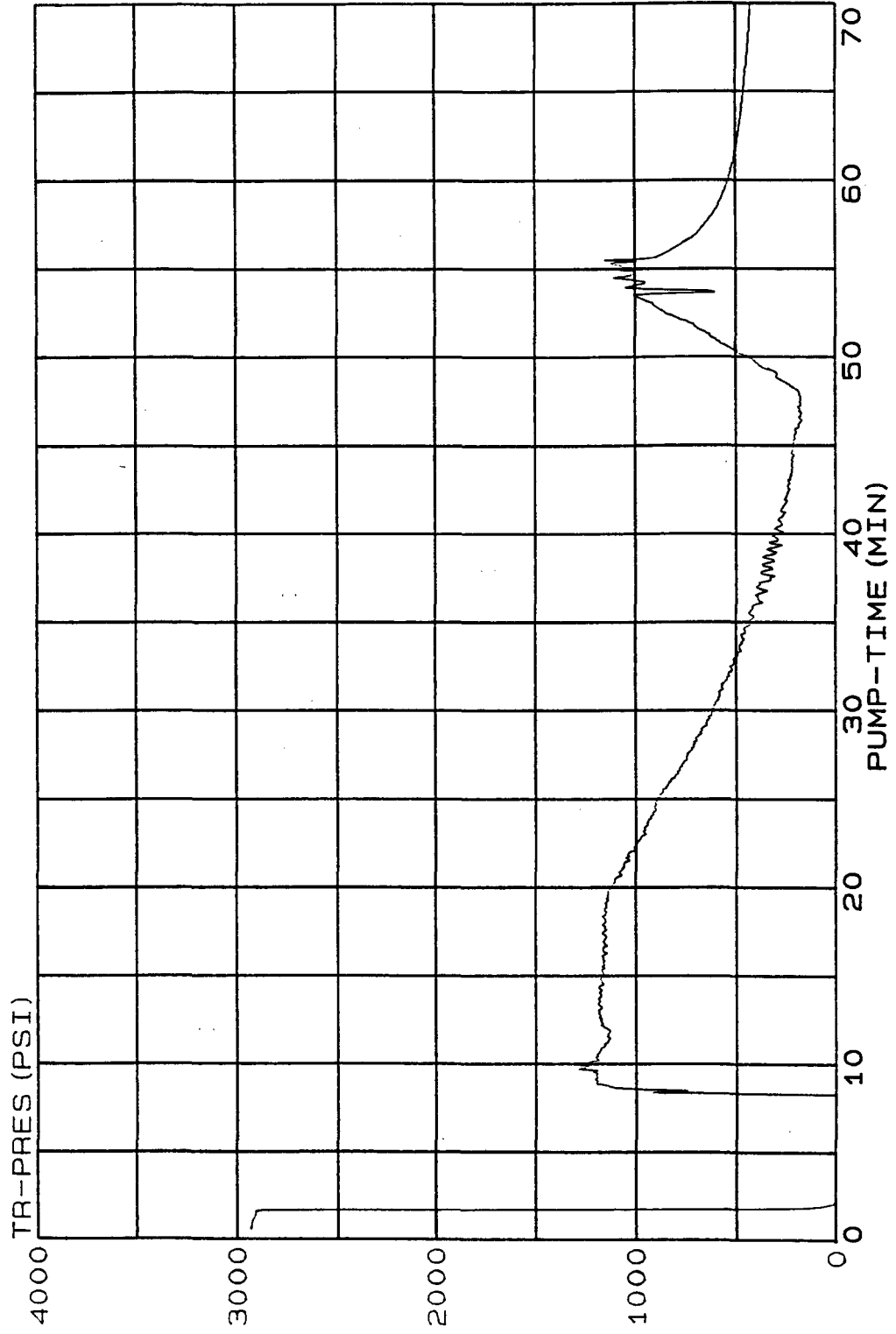
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JIC APACHE A118 #15
YF-130 MESAVERDE





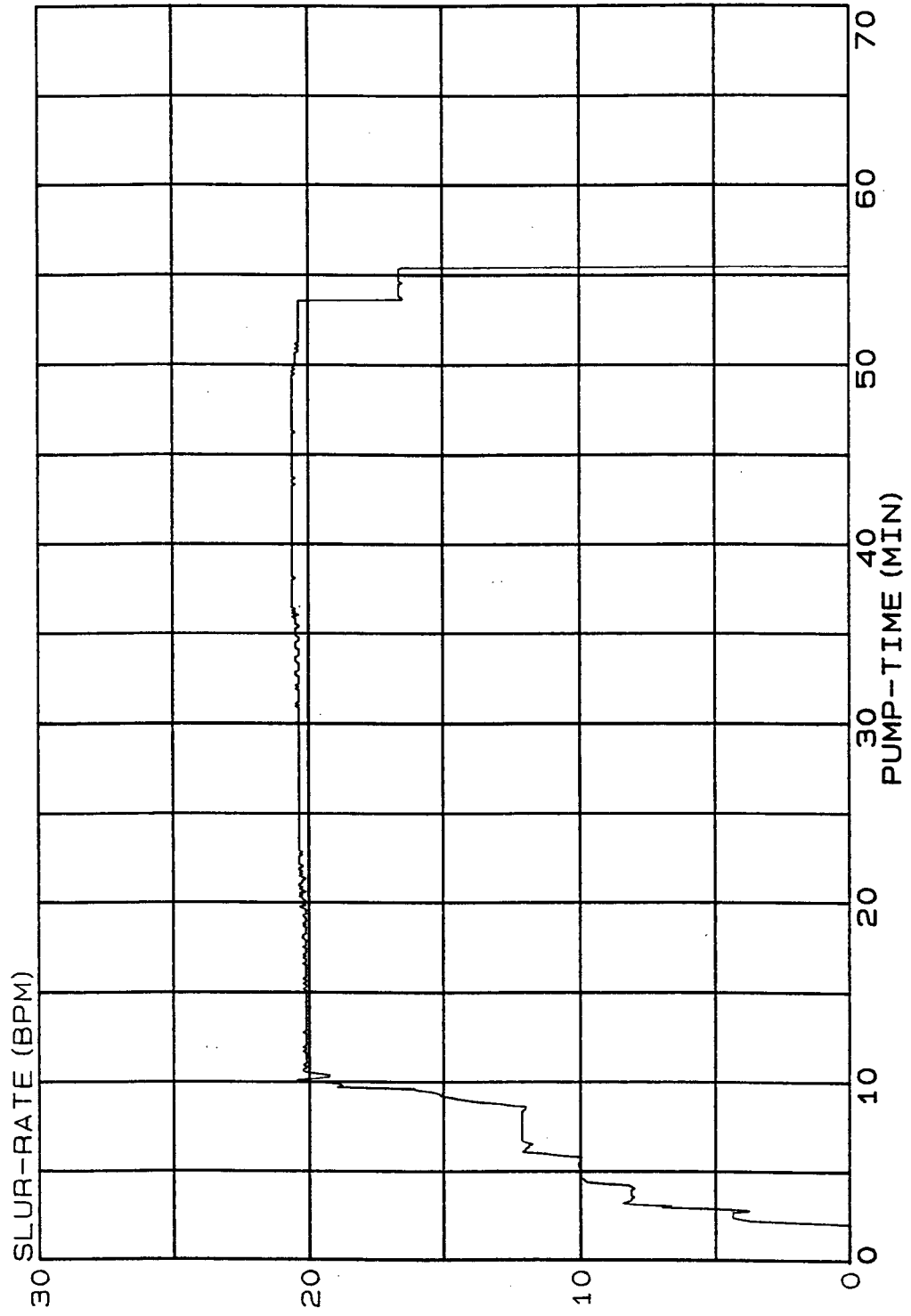
PPR TREATMENT REPORT
24 Sep 93

APACHE CORP.
JIC APACHE A118 #15
YF-130 MESAVERDE



PPR TREATMENT REPORT
24 Sep 93

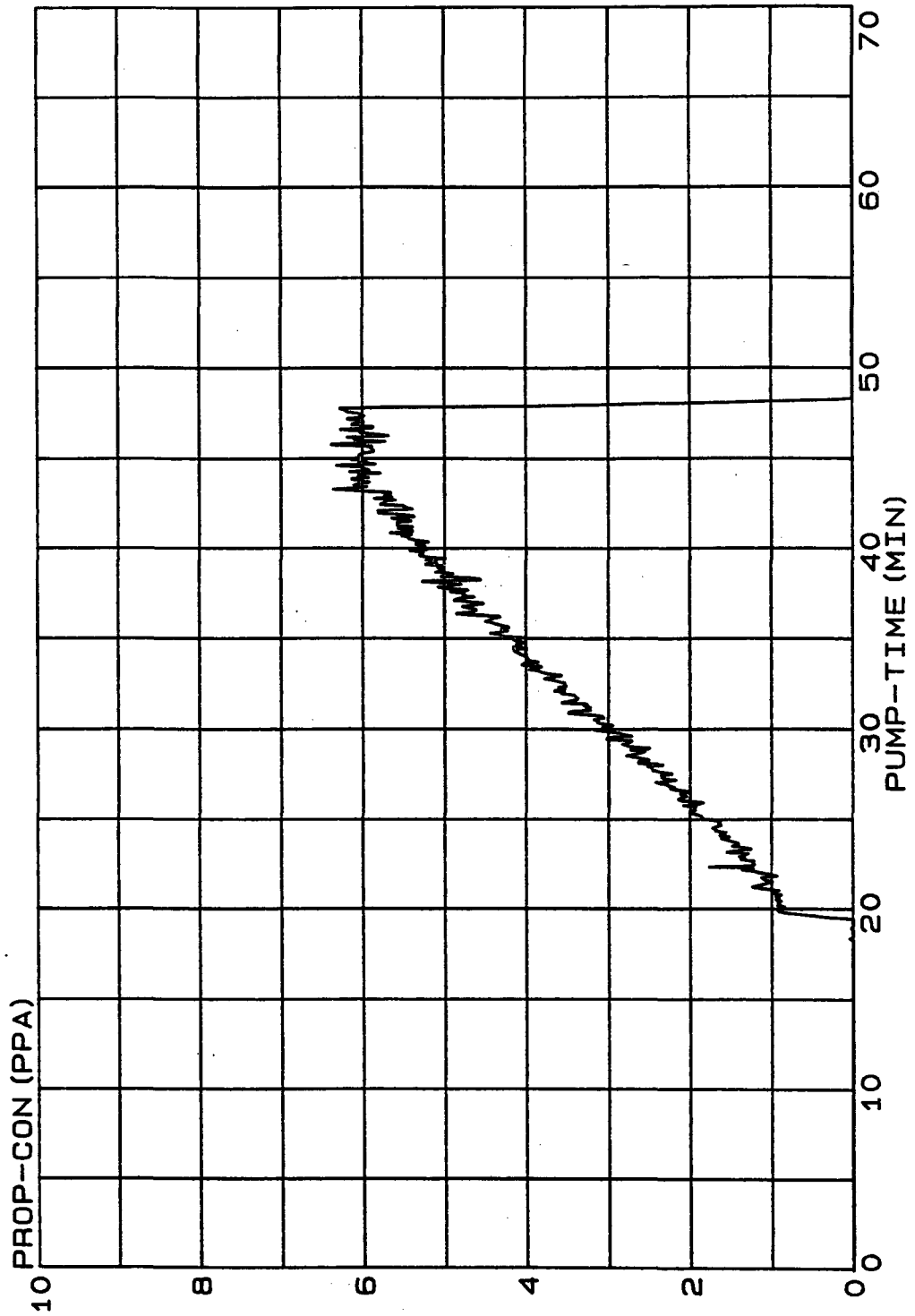
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JIC APACHE A118 #15
YF-130 MESAVERDE





PPR TREATMENT REPORT
24 Sep 93

APACHE CORP.
JIC APACHE A118 #15
YF-130 MESAVERDE



Attachment 'E'

Estimated bottomhole pressures

Bottom Hole Pressure Calculations

MESA VERDE:

There was a 7-day pressure build-up run ending December 8th, 1993 on the Mesa Verde formation. The final pressure recorded was 542 psi with a fluid level of 6042' (Assumed the fluid in hole was water). Using the gas analysis for the Mesa Verde:

SG = .7168
Avg z = .996
Avg T = 540 R
Avg H = 6042'

The bottom hole pressure was calculated to be ~ 700 psi.

GALLUP/DAKOTA:

The well was returned to production in March, 1993. The shut-in casing pressure was 320 psi with a fluid level of 6500' (Assumed the fluid in hole was water). Using the gas analysis for the Gallup/Dakota the bottom hole pressure was determined to be ~ 930 psi.

Attachment 'F'
Fluid Characteristics

