Case No.

7282

Application

Transcripts

Small Exhibits

ETC

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR
LARRY KEHOE
SECRETARY

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-2434

July 2, 1981

Re: CASE NO. 7282
ORDER NO. R-6721

Mr. Tommy Roberts, Attorney
Dugan Production Corporation
P. O. Box 208
Farmington, New Mexico 87401

Applicant:

Jerome P. McHugh

Dear Sir:

Enclosed herewith are two copies of the above-referenced Division order recently entered in the subject case.

Yours very truly,

JOE D. RAMEY
Director

JDR/fd

Copy of order also sent to:

Hobbs OCD x
Artesia OCD x
Aztec OCD x

Other

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 7282
Order No. R-6721

APPLICATION OF JEROME P. McHUGH
FOR DOWNHOLE COMMINGLING, RIO
ARRIBA COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on June 17, 1981, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 1st day of July, 1981, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Jerome P. McHugh, is the owner and operator of the Apache Well No. 3-E, located in Unit H of Section 19, Township 26 North, Range 3 West, NMPM, Rio Arriba County, New Mexico.

(3) That the applicant seeks authority to commingle Wildhorse-Gallup and Basin-Dakota production within the wellbore of the above-described well.

(4) That from the Wildhorse-Gallup zone, the subject well is expected to be capable of low marginal production only.

(5) That from the Basin-Dakota zone, the subject well is expected to be capable of low marginal production only.

(6) That the proposed commingling may result in the recovery of additional hydrocarbons from each of the subject pools, thereby preventing waste, and will not violate correlative rights.

(7) That the reservoir characteristics of each of the subject zones are such that underground waste would not be caused by the proposed commingling provided that the well is not shut-in for an extended period.

(8) That to afford the Division the opportunity to assess the potential for waste and to expeditiously order appropriate remedial action, the operator should notify the Aztec district office of the Division any time the subject well is shut-in for 7 consecutive days.

(9) That in order to allocate the commingled production to each of the commingled zones in the subject well, 50 percent of the commingled oil and gas production should be allocated to the Wildhorse-Gallup zone, and 50 percent to the Basin-Dakota zone.

IT IS THEREFORE ORDERED:

(1) That the applicant, Jerome P. McHugh, is hereby authorized to commingle Wildhorse-Gallup and Basin-Dakota production within the wellbore of the Apache Well No. 3-E, located in Unit H of Section 19, Township 26 North, Range 3 West, NMPM, Rio Arriba County, New Mexico.

(2) That 50 percent of the commingled oil and gas production shall be allocated to the Wildhorse-Gallup zone and 50 percent to the Basin-Dakota zone.

(3) That the operator of the subject well shall immediately notify the Division's Aztec district office any time the well has been shut-in for 7 consecutive days and shall concurrently present, to the Division, a plan for remedial action.

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year herein-above designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

JOE D. RAMEY
Director

S
fd/

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
17 June 1981

EXAMINER HEARING

IN THE MATTER OF:

Application of Jerome P. McHugh for for downhole commingling, Rio Arriba County, New Mexico. CASE 7282

BEFORE: Daniel S. Nutter

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division: Ernest L. Padilla, Esq.
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For the Applicant: Tommy Roberts, Esq.
Dugan Production Corporation
P. O. Box 208
Farmington, New Mexico 87401

I N D E X

TOM DUGAN

E X H I B I T S

MR. NUTTER: Call Case Number 7282.

MR. PADILLA: Application of Jerome P. McHugh for downhole commingling, Rio Arriba County, New Mexico.

MR. ROBERTS: Tommy Roberts, general counsel for Dugan Production Corporation, appearing on behalf of Jerome P. McHugh, and Associates.

I have one witness.

MR. NUTTER: The record will show that Mr. Dugan is still under oath.

Go ahead.

MR. ROBERTS: Okay.

TOM DUGAN

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. ROBERTS:

Q. Mr. Dugan, for the record would you state your name, address, and occupation?

A. Thomas A. Dugan, 907 Hallett Circle, Farmington, New Mexico, Consulting Petroleum Engineer.

Q. What is your relationship to the applicant in this case?

A. I work for him as a consultant.

Q. And are you familiar with this application and its contents?

A. Yes.

Q. And you've testified before the New Mexico Oil Conservation Commission?

A. Yes.

Q. In what capacity?

A. As a petroleum engineer.

MR. ROBERTS: Are the witness' qualifications a matter of record and acceptable?

MR. NUTTER: They are.

Q. Mr. Dugan, what is the purpose of this application?

A. The purpose of the application is to seek approval to commingle production from the Gallup and Dakota formations in the Jerome P. McHugh Apache 3-E Well.

Q. And what pools are we speaking of?

A. The Dakota Pool is in the Basin Dakota and the Gallup horizon is in the Wildhorse-Gallup Pool.

Q. Would you refer to Exhibit Number One and identify that exhibit?

A. It's a map showing the location of the Apache 3-E Well as indicated by the yellow dot and arrow.

It also shows the location of other wells in the area that produce from the Gallup and Dakota horizons.

It also shows on the lefthand side the cumulative production from these wells that are indicated on the map in different colors.

Q. What conclusions significant to this application can you draw from the information contained in this exhibit?

A. That the area is productive in the Dakota horizon and also the Gallup horizon and that it's really not an outstanding Dakota or Gallup area.

Q. Refer to Exhibit Number Two and identify that exhibit.

A. Exhibit Number Two shows the offset operators surrounding Jerome P. McHugh's Apache 3-E Well.

Q. Okay. And now please refer to Exhibits Numbers Three, Four, Five, Six, and Seven, and identify those exhibits and explain their significance.

A. Okay. Exhibit Number Three is a Xeroxed copy of the logs on the Jerome P. McHugh Apache 3-E Well, and shows the Gallup horizon on the second page, and also the Dakota horizon on the third page.

MR. NUTTER: You mean the Gallup is

7400 and some feet here?

A. Yes. Our proposed perforations would be there at 7424 to 30.

MR. NUTTER: Very deep for the Gallup there, isn't it?

A. Yeah, these are deep, expensive wells. And that's a pretty good-looking Gallup sand and the Dakota sands are generally pretty hard and tight; have low productivity.

This well has recently been drilled and is waiting on -- pipe has been set and it's waiting on completion. It has not been perforated or tested at this point.

The remaining logs are the four wells that McHugh drilled in 1969 in this same area, and they show that the wells were dually completed in the Gallup horizon and the Dakota horizon. We have marked the perforations that were on each log.

Q. In comparing the logs on each of these wells, what conclusions, if any, do you draw?

A. The conclusion that we'd like to draw is that -- that the older wells are very similar to the new infill well that has been drilled.

Q. Specifically, and you might refer to Exhibit -- either Exhibit Number One or Exhibit Number Two,

can you point out the locations of the Apache No. 1, No. 2, No. 3, and No. 4 Wells, for the benefit of the Examiner?

A. Yes. On Exhibit One you can see that the Apache 3-E Well is the one with the arrow and the yellow dot, and the 1, 2, 3, and 4, are the wells on the west sides of Sections 18 and 19. They're purple and orange dots.

Q. Okay. Would you refer to Exhibit Number Eight and identify that exhibit?

A. It is a daily drilling report on the work that has been done to date on the Apache 3-E Well, merely showing that it has been drilled and how the casing was run and cemented.

Q. And again, the current status of the well is what?

A. It has casing cemented through the Dakota formation and is awaiting completion.

Q. Okay. Would you refer to Exhibit Number Nine and identify it and explain its significance?

A. This is shut-in pressures that have been recorded on the four Apache wells in this immediate vicinity; what the pressures were originally in the Gallup and Dakota horizons, the Gallup being the upper completion and the Dakota being the lower completion; the dates that these pressures were taken. It also shows the most recent

shut-in pressures that we have on the four wells and how they -- how the pressures that are now -- recent pressures have been taken.

Q. In your opinion, can these pressures contained in this chart reasonably be expected to be comparable to those pressures that we would find in the Apache 3-E Well?

A. They should be very comparable or -- unless the degree has been depleted some by the older production, which is likely to some small extent.

MR. NUTTER: Now, what's happened to the pressure on the Gallup on the No. 2 and the Dakota on the No. 3 here on this exhibit?

A. They're both -- both horizons have logged off and we've been unable to get them to produce in recent years.

MR. NUTTER: There'd be some pressure there but it's just logged off --

A. Yes, sir.

MR. NUTTER: -- with fluids.

A. That's right.

MR NUTTER: Okay.

A. That's correct.

MR. NUTTER: Okay.

Q. In your opinion are these pressures

compatible with one another and if we found these pressures to be in the -- accurate in the Apache 3-E Well --

A. Yes.

Q. -- would they be compatible?

A. Yes, I'm sure they would be.

Q. Now refer to Exhibit Ten and identify that exhibit, please?

A. These are decline curves on both horizons for -- on the four wells that we have discussed before, the Apache 1 through 4 Wells.

We brought these along to show the type of wells that were completed back in '69 and to indicate that we would anticipate getting a very similar well in the Apache 3-E Well.

Starting with the Apache 1 Well, it's currently producing from the Dakota horizon about 2000 Mcf a month and from the Gallup horizon it's producing 500 Mcf per month. So neither horizon in this particular well is very good.

In the Apache No. 2 Well the Dakota production is around 1200 Mcf per month, in the Gallup, but it's not producing at this time.

The Apache No. 3, the Dakota horizon is not producing and the Gallup horizon is producing about

4-million Mcf per month with the aid of a compressor.

And the Apache No. 4 Well the Dakota horizon is not producing, nor is the Gallup horizon at this time.

Q. How would you characterize the volumes of liquid production from each of these zones? That could be expected from each of these zones?

A. The -- both horizons in the older wells make some condensate. They're both gas wells and both horizons are gas with some associated condensates and they both make about 10 barrels per million of oil.

Q. Is the ownership of each zone common?

A. Yes, it is.

Q. And from an economical standpoint is it necessary to commingle production in this well?

A. It would be most desireable.

Q. Do you propose a formula for allocation of production to the respective zones?

A. Yes. I'd propose that -- that 50 percent of the gas and 50 percent of the oil be allocated to each zone.

Q. And how was that allocation formula arrived at?

A. Mainly experience with the older wells.

Q. How would you propose to achieve commingling in the wellbore of the Apache 3-E Well?

A. To --

Q. If it's approved?

A. To make a -- perforate and frac each horizon separately and then merely commingle them with one string of tubing in the well.

Q. Were Exhibits One through Ten prepared by you or under your direction and supervision?

A. Yes.

MR. ROBERTS: We move that Exhibits One through Ten be admitted into the record.

MR. NUTTER: Exhibits One through Ten will be admitted in the record.

Q. In your professional opinion will commingling of production in the wellbore of the Apache 3-E Well result in the recovery of additional hydrocarbons, the prevention of waste, and the protection of correlative rights?

A. Yes.

MR. ROBERTS: We have no other questions, Mr. Examiner.

CROSS EXAMINATION

BY MR. NUTTER:

Q. Mr. Dugan, now in these exhibits, on Exhibit Ten, what do we show on these? We show current production, that's the zigzag line at the top here.

A. Yes.

Q. And then this is cumulative production --

A. Yeah.

Q. -- the solid line?

A. Yes, sir, uh-huh.

Q. And then on the -- those are the only two lines that are on page one here.

A. Yes, sir.

Q. Which is Dakota for the No. 1.

A. Yes, sir.

Q. Or is there a little curve way over here to the far left that's not indicated or not --

A. That was oil.

Q. That was oil production?

A. Producion, yes.

Q. Okay, then we come to page two, which is the Gallup in the No. 1 Well and the oil production has been constant, not very much, granted, but it has been constant.

A. Yes.

Q. As compared to no well production at all on the -- on the Dakota.

A. Yes, sir.

Q. Now on the next well, which is the third page, we have the No. 2 Dakota, and we had oil production, which has declined almost to nothing.

A. Yes.

Q. And no oil production at all shown for the Gallup there on that well.

A. Right. We never did really have that Gallup producing very well, as you can see. Probably both horizons would have produced a lot better if they would have been commingled rather than dually completed. But --

Q. Uh-huh. How have these wells been produced? Have they had pumps on them or has --

A. No.

Q. -- McHugh relied on flow to produce both zones?

A. Yes, sir, that's correct, and none of the wells have been pumped.

Q. Uh-huh.

A. Not either horizon in any of the wells.

Q. And then the No. 3 doesn't show any oil

production from the Gallup -- the Dakota, but it does show a pretty substantial oil production at the beginning for the Gallup, declining to a low rate today.

A. Yes, sir.

Q. And the same is true of No. 4. So I was wondering where you get that 50 percent allocation on oil and 50 percent -- for these wells, when the oil just doesn't seem to be there in the Dakota in several of these wells.

A. Well, it's been my experience in that general area that -- that a well that will lift the liquids, produce liquids, will produce about 10 barrels per million.

Q. Uh-huh.

A. In both horizons. And I think the -- the way they're showing up here is because the wells have not been able to lift the produced fluids well.

Q. Well, do you think the gas reserves are pretty similar on the two zones?

A. Yes, I do.

Q. So if you use a constant gas/oil ratio of 10 barrels per million, you'd have essentially the same amount of oil, then.

A. Yes, sir.

Q. If you have equal reserves of gas,

A. Yeah, I think so. I think probably in reality the Gallup will produce better right at the start but the Dakota will produce over a longer period of time.

Q. I see, and in the long run it would even out pretty well.

A. Yes, sir, that's what I believe. Yes, sir.

Q. Okay.

MR. NUTTER: Are there any further questions of Mr. Dugan? He may be excused.

Do you have anything further, Mr. Roberts?

MR. ROBERTS: No, sir.

MR. NUTTER: Does anyone have anything they wish to offer in Case Number 7282?

We'll take the case under advisement.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 7282 heard by me on 6/17 1981.

, Examiner
Oil Conservation Division

SALLY W. BOYD, C.S.R.
Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 455-7409

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
17 June 1981

EXAMINER HEARING

IN THE MATTER OF:

Application of Jerome P. McHugh for for downhole commingling, Rio Arriba County, New Mexico. CASE 7282

BEFORE: Daniel S. Nutter

TRANSCRIPT OF HEARING

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A. Yes.

Q. And you've testified before the New Mexico Oil Conservation Commission?

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A Mainly experience with the older wells.

Q How would you propose to achieve commingling in the wellbore of the Apache 3-E Well?

A To --

Q If it's approved?

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Q Were Exhibits One through Ten prepared by you or under your direction and supervision?

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A Yes.

MR. ROBERTS: We have no other questions, Mr. Examiner.

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Q. Uh-huh. How have these wells been produced? Have they had pumps on them or has --

A. No.

Q. -- McHugh relied on flow to produce both zones?

A. Yes, sir, that's correct, and none of the wells have been pumped.

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production from the Gallup -- the Dakota, but it does show a pretty substantial oil production at the beginning for the Gallup, declining to a low rate today.

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Q. And the same is true of No. 4. So I was wondering where you get that 50 percent allocation on oil and 50 percent -- for these wells, when the oil just doesn't seem to be there in the Dakota in several of these wells.

A. Well, it's been my experience in that general area that -- that a well that will lift the liquids, produce liquids, will produce about 10 barrels per million.

Q. Uh-huh.

A. In both horizons. And I think the -- the way they're showing up here is because the wells have not been able to lift the produced fluids well.

Q. Well, do you think the gas reserves are pretty similar on the two zones?

A. Yes, I do.

Q. So if you use a constant gas/oil ratio of 10 barrels per million, you'd have essentially the same amount of oil, then.

A. Yes, sir.

Q. If you have equal reserves of gas.

A. Yeah, I think so. I think probably in reality the Gallup will produce better right at the start but the Dakota will produce over a longer period of time.

Q. I see, and in the long run it would even out pretty well.

A. Yes, sir, that's what I believe. Yes, sir.

Q. Okay.

MR. NUTTER: Are there any further questions of Mr. Dugan? He may be excused.

Do you have anything further, Mr. Roberts?

MR. ROBERTS: No, sir.

MR NUTTER: Does anyone have anything they wish to offer in Case Number 7282?

We'll take the case under advisement.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 7282 heard by me on 6/17 1981.

, Examiner
Oil Conservation Division

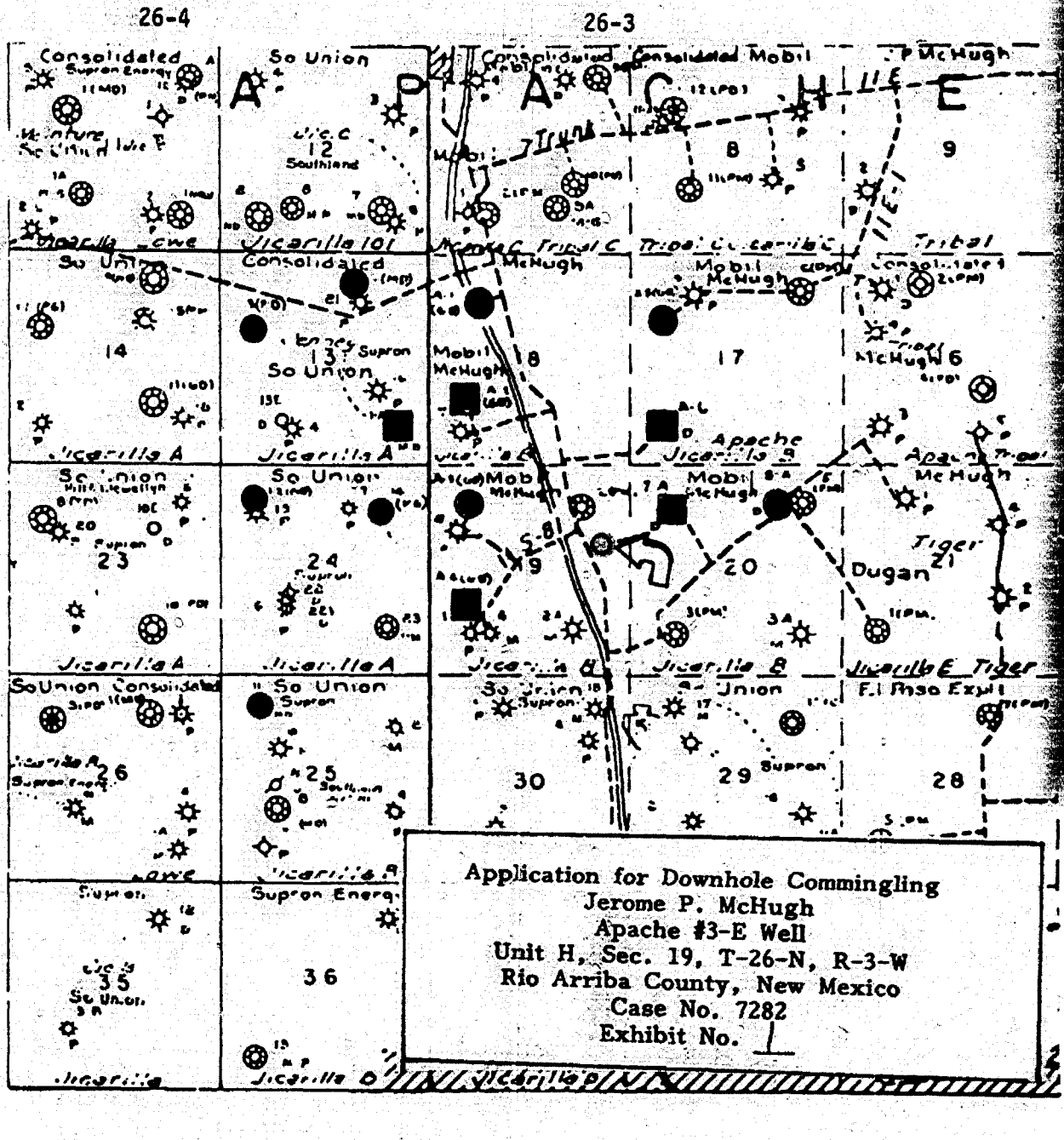
SALLY W. BOYD, C.S.R.
Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 455-7409

JEROME P. McHUGH - Apache #3E

SURROUNDING PRODUCTION

		Cumulative	1980
BASIN DAKOTA			
T26N R4W			
Consolidated Oil & Gas Co.			
Sec 13 (B) Jenney #1	gas	924980	46655
	oil	20348	456
(P) Jenney #1M	gas	77113	42779
	oil	2067	904
Southern Union Exploration Co.			
Sec 13 (E) Jicarilla A #13	gas	435793	24372
	oil	8465	661
Sec 24 (D) Jicarilla A #12	gas	373887	31578
	oil	17471	773
Sec 25 (D) Jicarilla B #11	gas	83478	53243
	oil	2202	1486
T26N R3W			
Jerome P. McHugh			
Sec 17 (E) Apache #5	gas	424436	20890
	oil	8980	349
Sec 17 (M) Apache #6	gas	510170	35072
	oil	28197	1186
Sec 18 (D) Apache #1	gas	435098	27272
	oil	2481	--
Sec 18 (L) Apache #2	gas	338219	14325
	oil	5635	134
Sec 19 (D) Apache #3	gas	265286	(Last production
	oil	3171	(12/74
Sec 19 (L) Apache #4	gas	103484	[Last Production
	oil	1329	[8/78
Sec 20 (B) Apache #8	gas	880	(Last production
	oil	539	(prior to 6/73
Sec 20 (D) Apache #7	gas	262576	10989
	oil	14177	257
WILD HORSE GALLUP			
T26N R4W			
Southern Union Exploration Co.			
Sec 24 (A) Jicarilla A #14	gas	512997	16634
	oil	2891	--
Sec 24 (D) Jicarilla A #12	gas	1880638	55841
	oil	7842	232
T26N R3W			
Jerome P. McHugh			
Sec 18 (D) Apache #1	gas	135197	5467
	oil	7187	365
(L) Apache #2	gas	51966	S
	oil	937	S
Sec 19 (D) Apache #3	gas	1463891	41854
	oil	16081	275

(Continued on reverse)



WILD HORSE GALLUP (Continued)		Cumulative	1980
T26N R3W			
Jerome P. McHugh			
Sec 19 (L) Apache #4	gas	264242	S
	oil	5166	S

)FF-SET OPERATORS AND LEASES

T26N R4W

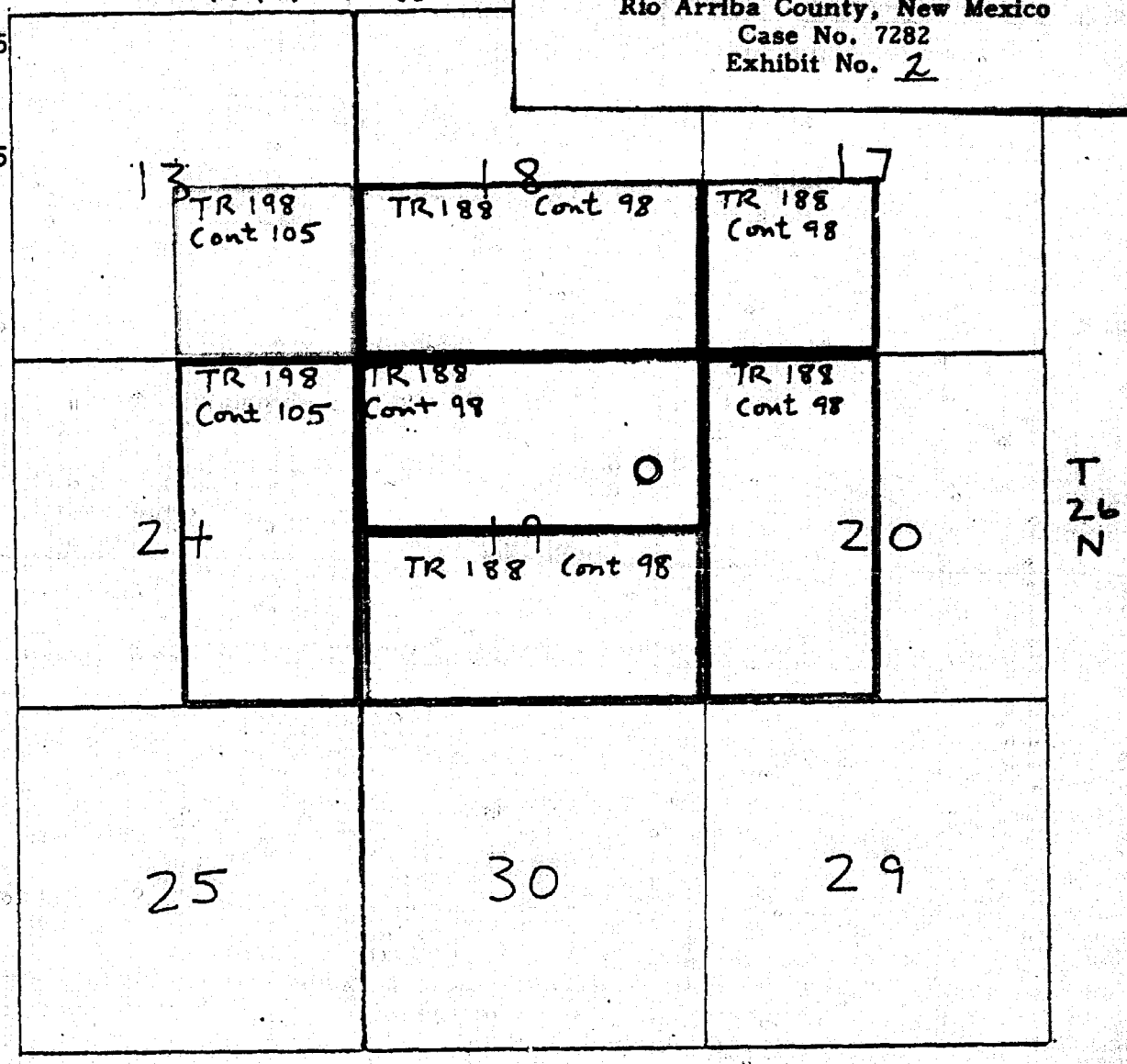
Sec 13 SE/4
Consolidated Oil & Gas Co.
Tract #198-Jicarilla Contract 105

Sec 24 E/2
Southern Union Production Co.
Tract #198-Jicarilla Contract 105

T26N R3W

Sec 18 S/2, Sec 19 S/2, Sec 17 SW/4, Sec 20 W/2
Jerome P. McHugh
Tract #188-Jicarilla Contract 98

Application for Downhole Commingling
Jerome P. McHugh
Apache #3-E Well
Unit H, Sec. 19, T-26-N, R-3-W
Rio Arriba County, New Mexico
Case No. 7282
Exhibit No. 2



JEROME P. McHUGH
Apache #3E
TR 188 - Con 98
N/2 Sec 19 T26N R3W

Welex INDUCTION · ELECTRIC LOG

COMPANY JEROME P. McHUGH
WELL APACHE #3E
FIELD BASIN DAKOTA
COUNTY RIO ARRIBA STATE NEW MEXICO

Location: 1710' FNL/1120' FEL
Other Services: CDL

Sec. 19 Twp. 26N Rge. 3W

Permanent Datum GROUND LEVEL Elev. 7013
Log Measured From KELLY BUSHING, 12 Ft. Above Perm. Datum
Drilling Measured From KELLY BUSHING
Elev.: K.B. 7025' D.F. — G.L. 7013

Date	5-11-81			
Run No.	ONE			
Depth—Driller	8197'			
Depth—Welex	8191'			
Btm. Log Inter.	8189'			
Top Log Inter.	250'			
Casing—Driller	8 5/8" @ 253'	@	@	@
Casing—Welex	250'			
Bit Size	7 7/8"			
Type Fluid in Hole	LCND			
Dens. | Visc.	9.2 | 63	|	|	|
pH | Fluid Loss	8.0 | 5.4 ml	| ml	| ml	| ml
Source of Sample	MUD PIT			
R_m @ Meas. Temp.	2.87 @ 70 °F	@ °F	@ °F	@ °F
R_{mf} @ Meas. Temp.	2.5 @ 67 °F	@ °F	@ °F	@ °F
R_{mc} @ Meas. Temp.	4.0 @ 63 °F	@ °F	@ °F	@ °F
Source R_{mf} R_{mc}	MEAS | MEAS	|	|	|
R_m @ BHT	1.18 @ 170 °F	@ °F	@ °F	@ °F
Time Since Circ.	2 HOURS			
Max. Rec. Temp.	170 °F @ TD	°F @	°F @	°F @
Equip. | Location	2892 | FARM	|	|	|

Service Ticket No 082813 Remarks.

Change in Mud Type or Additional Samples

Date | Sample No	|	|
Depth—Driller		
Type Fluid in Hole		
Dens. | Visc.	9.2 | 63	|
pH | Fluid Loss	8.0 | 5.4 ml	|
Source of Sample	MUD PIT	
R_m @ Meas. Temp.	2.87 @ 70 °F	@ °F
R_{mf} @ Meas. Temp.	2.5 @ 67 °F	@ °F
R_{mc} @ Meas. Temp.	4.0 @ 63 °F	@ °F
Source R_{mf} | R_{mc}	MEAS. | MEAS.	|
R_m @ BHT	1.18 @ 170 °F	@ °F
R_{mf} @ BHT	0.98 @ 170 °F	@ °F
R_{mc} @ BHT	1.48 @ 170 °F	@ °F

SCALE CHANGES NONE

Type Log	Depth	Scale Up Hole	Scale Down Hole
IEL			

EQUIPMENT DATA

Run No.	Tool Type and No.	Pad Type	Tool Position	Other
ONE	280 # 28609		FREE	

Application for Downhole Commingling
Jerome P. McHugh
Apache #3-E Well
Unit H, Sec. 19, T-26-N, R-3-W
Rio Arriba County, New Mexico
Case No. 7282
Exhibit No. 3

2" = 100'

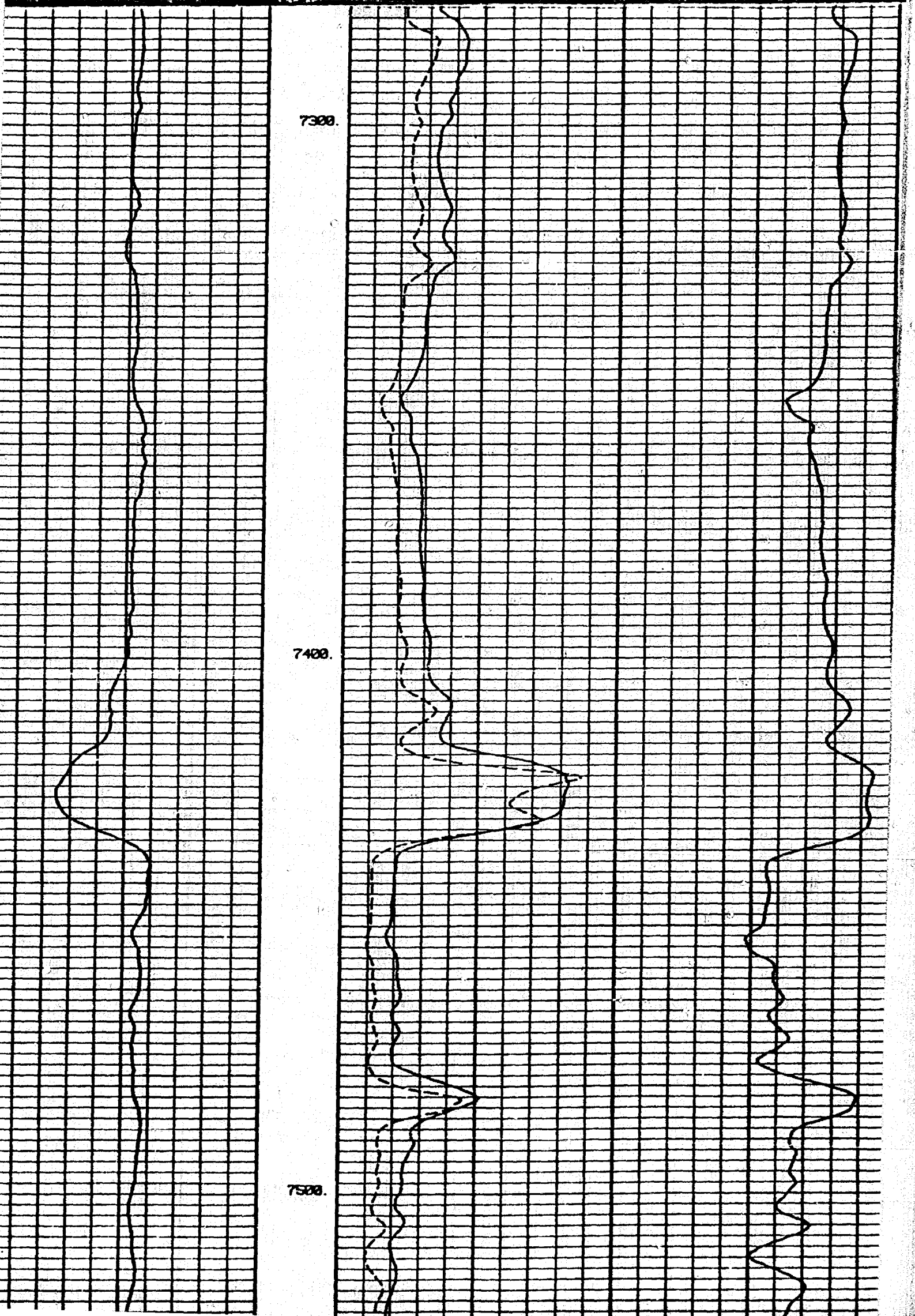
S. P. 10 +

400 CONDUCTIVITY 0

0 IND. RES. 100

0 SHORT NORMAL 100

200.


7300.
7400.
7500.

8000.

8100.

16" NORMAL

Induction Resistivity

IND. CONDUCTIVITY

SP

T.D.

LOGGED

0 SHORT NORMAL 100

0 IND. RES. 100

S. P. 10 +

400 CONDUCTIVTY 0

Dresser Atlas — Induction Electrolog

FILE NO.	COMPANY Jerome P. McHugh
TOPS MARKED ON 5"	WELL Jicarilla A-1 Perfs
	FIELD Basin Dakota
	COUNTY Rio Arriba STATE New Mexico
	LOCATION: 1190 FNL & 1190 FWL
	SEC 18 TWP 26N RGE 3W
	Other Services: GDC

Permanent Datum G.L. Elev. 6912
Log Measured from K.B. 13 Ft. Above Permanent Datum
Drilling Measured from K.B.
Elevations: KB 6925 DF GL 6912

Date	6-9-69			
Run No.	ONE			
Depth—Driller	8031			
Depth—Logger	8035			
Bottom Logged Interval	8029			
Top Logged Interval	213			
Casing—Driller	8 5/8 @ 212	@	@	@
Casing—Logger	213			
Bit Size	7 7/8			
Type Fluid in Hole	Chem Gel			
Density and Viscosity	9.3 72			
pH and Fluid Loss	9.0 6.8 cc	cc	cc	cc
Source of Sample	Circ			
Rm @ Meas. Temp.	2.2 @ 82 °F	@ °F	@ °F	@ °F
Rmf @ Meas. Temp.	1.8 @ 78 °F	@ °F	@ °F	@ °F
Rmc @ Meas. Temp.	2.4 @ 78 °F	@ °F	@ °F	@ °F
Source of Rmf and Rmc	Mea Mea			
Rm @ BHT	1.1 @ 165 °F	@ °F	@ °F	@ °F
Time Since Circ.	3 Hr			
Max. Rec. Temp. Deg. F.	165 °F	°F	°F	°F
Equip. No. and Location	HL 1240 Farm			
Recorded By	Roth			
Witnessed by	M. McHugh			

FOLD HERE

THIS HEADING AND LOG CONFORMS TO API RECOMMENDED STANDARD PRACTICE RP-31

REMARKS

Changes in Mud Type or Additional Samples		
Date / Sample No.		
Depth-Driller		
Type Fluid in Hole		
Dens. / Visc.		
pH / Fluid Loss	cc	cc
Source of Sample		
Rm @ Meas. Temp.	@ °F	@ °F
Rmf @ Meas. Temp.	@ °F	@ °F
Rmc @ Meas. Temp.	@ °F	@ °F
Source Rmf / Rmc		
Rm @ BHT	@ °F	@ °F
Rmf @ BHT	@ °F	@ °F
Rmc @ BHT	@ °F	@ °F

Scale Changes

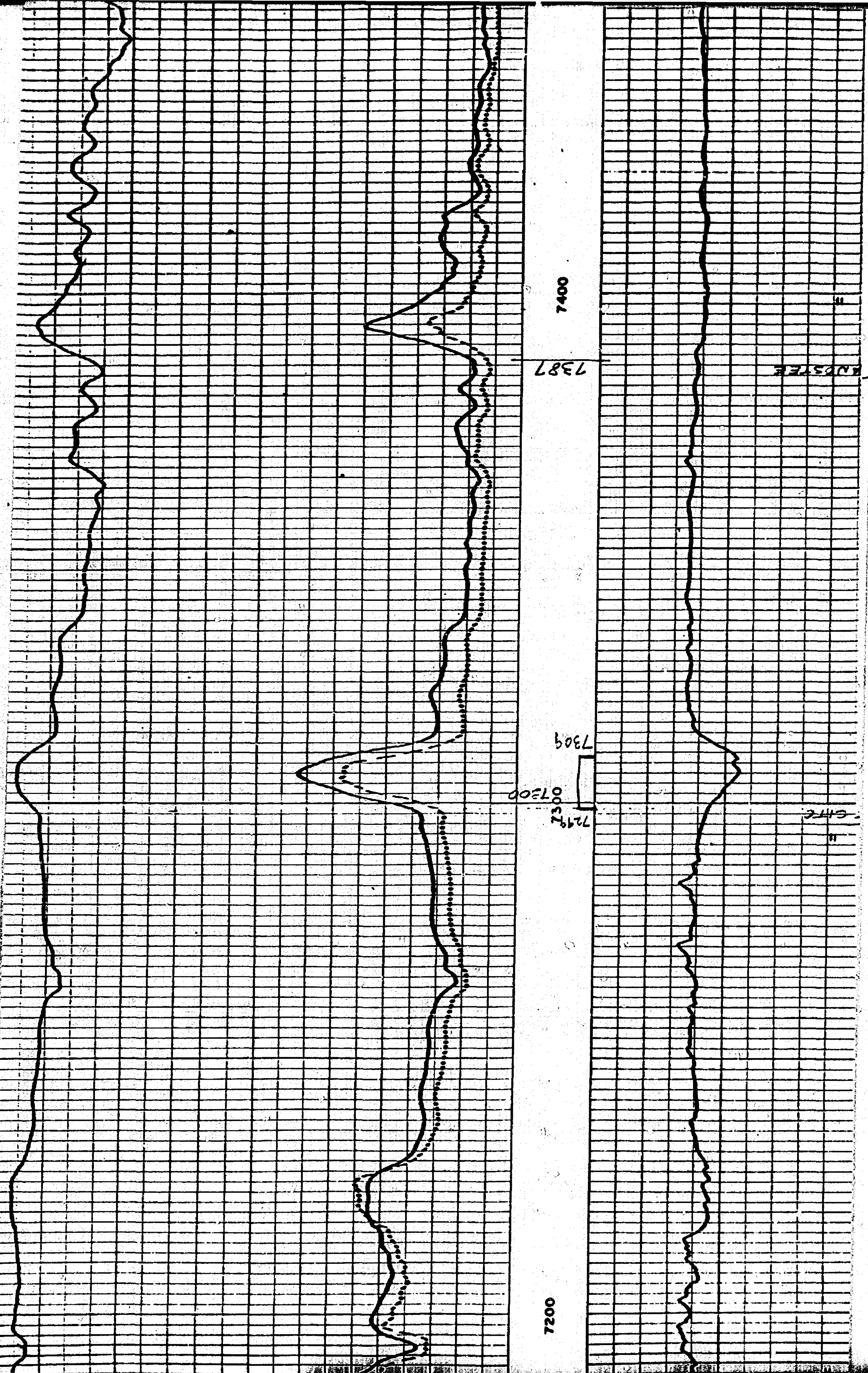
Type Log	Depth	Scale Up Hole	Scale Down Hole

Equipment Data

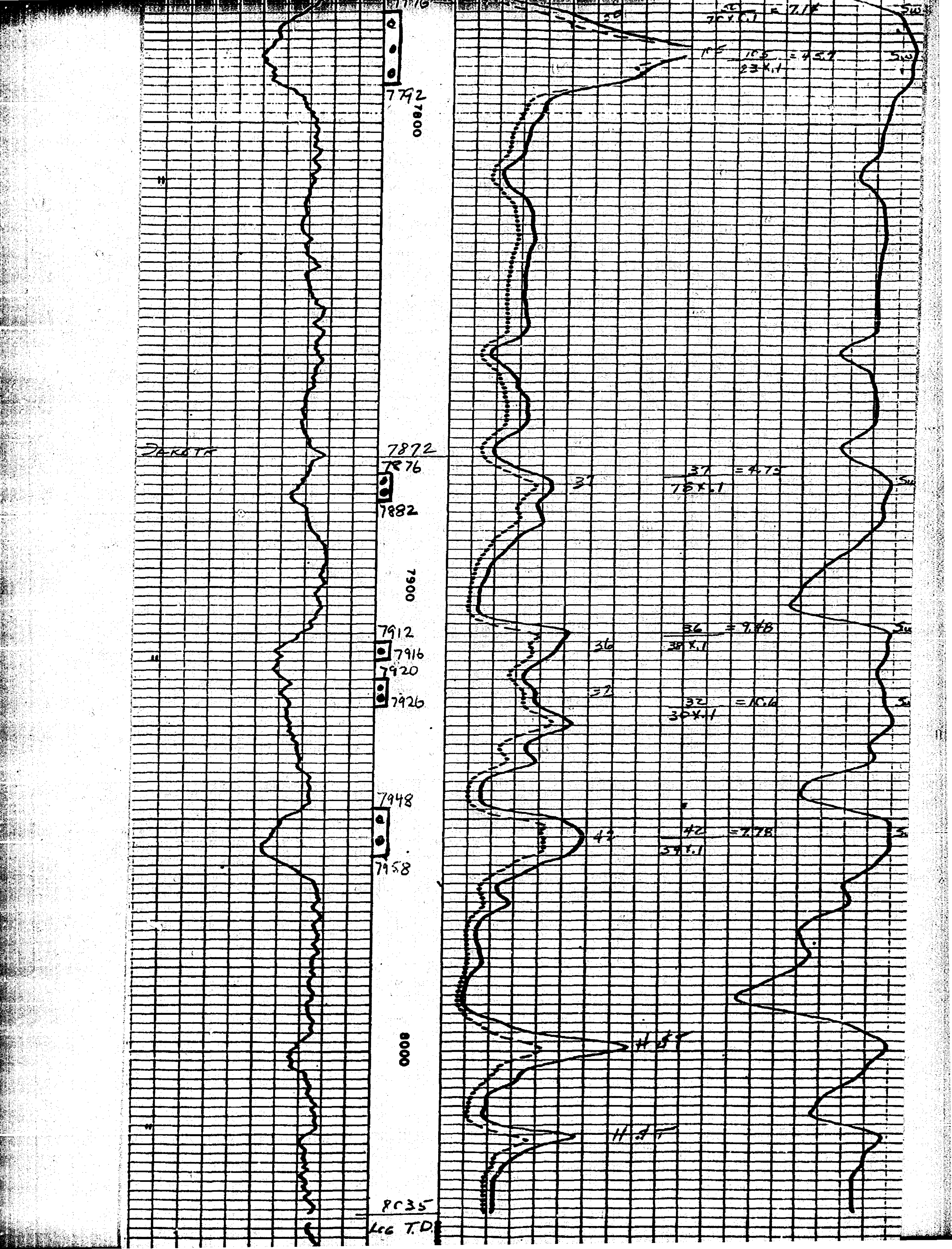
Run No.	Tool Type	Pad Type	Tool Position	Other
1	805		1 1/2 SO	

Application for Downhole Commingling
Jerome P. McHugh
Apache #3-E Well
Unit H, Sec. 19, T-26-N, R-3-W
Rio Arriba County, New Mexico
Case No. 7282
Exhibit No. 4

SPONTANEOUS POTENTIAL Millivolts	DEPTH	CONDUCTIVITY Millimhos/m
− 10 +		INDUCTION CONDUCTIV 40" SPACING 400 200 / 800 600
		RESISTIVITY Ohms m²/m — 16" NORMAL 0 100



7400
7387
7309
7300
7200



7716
7792
7800
Dakota
7872
7876
7882
7900
7912
7916
7920
7926
7948
7958
8000
8035
Log T.D.
= 7.14
15 / 23 x .1 = 4.57
37 / 78 x .1 = 4.73
36 / 38 x .1 = 9.48
32 / 30 x .1 = 10.6
42 / 54 x .1 = 7.78
H 85
H 47

Dresser Atlas — Induction Electrolog

Application for Downhole Commingling
Jerome P. McHugh
Apache #3-E Well
Unit H, Sec. 19, T-26-N, R-3-W
Rio Arriba County, New Mexico
Case No. 7282
Exhibit No. 5

FILE NO.

COMPANY Jerome P. McHugh
WELL Jicarilla A 2 Perfs
FIELD Basin Dakota
COUNTY Rio Arriba STATE
LOCATION: 1650' FSL & 790' FWL
Other Services: GDC
SEC 18 TWP 26N RGE 3W

Permanent Datum G.L. Elev. 6939
Log Measured from K.B. 13 Ft. Above Permanent Datum
Drilling Measured from K.B.
Elevations: KB 6952 DF GL 6939

Date	5-1-69		
Run No.	ONE		
Depth—Driller	8127		
Depth—Logger	8118		
Bottom Logged Interval	8112		
Top Logged Interval	210		
Casing—Driller	8 5/8 @ 211'	@	@
Casing—Logger	210		
Bit Size	7 7/8"		
Type Fluid in Hole	Chem Gel		
Density and Viscosity	9.2 78		
pH and Fluid Loss	9.0 3.2 cc	cc	cc
Source of Sample	Pit		
Rm @ Meas. Temp.	2.2 @ 70 °F	@ °F	@ °F
Rmf @ Meas. Temp.	2.0 @ 70 °F	@ °F	@ °F
Rmc @ Meas. Temp.	2.6 @ 70 °F	@ °F	@ °F
Source of Rmf and Rmc	Measured		
Rm @ BHT	0.9 @ 167 °F	@ °F	@ °F
Time Since Circ.	4 hrs.		
Max. Rec. Temp. Deg. F.	167 °F	°F	°F
Equip. No. and Location	2L4240 Farm.		
Recorded By	Dickerson		
Witnessed By	Jacobs		

FIELD PRINT

FOLD HERE

THIS HEADING AND LOG CONFORMS TO API RECOMMENDED STANDARD PRACTICE RP 31

REMARKS

Changes in Mud Type or Additional Samples				
Date / Sample No.				
Depth-Driller				
Type Fluid in Hole				
Dens. / Visc.				
pH / Fluid Loss		cc		cc
Source of Sample				
Rm @ Meas. Temp.	@	°F	@	°F
Rmf @ Meas. Temp.	@	°F	@	°F
Rmc @ Meas. Temp.	@	°F	@	°F
Source Rmf / Rmc				
Rm @ BHT	@	°F	@	°F
Rmf @ BHT	@	°F	@	°F
Rmc @ BHT	@	°F	@	°F

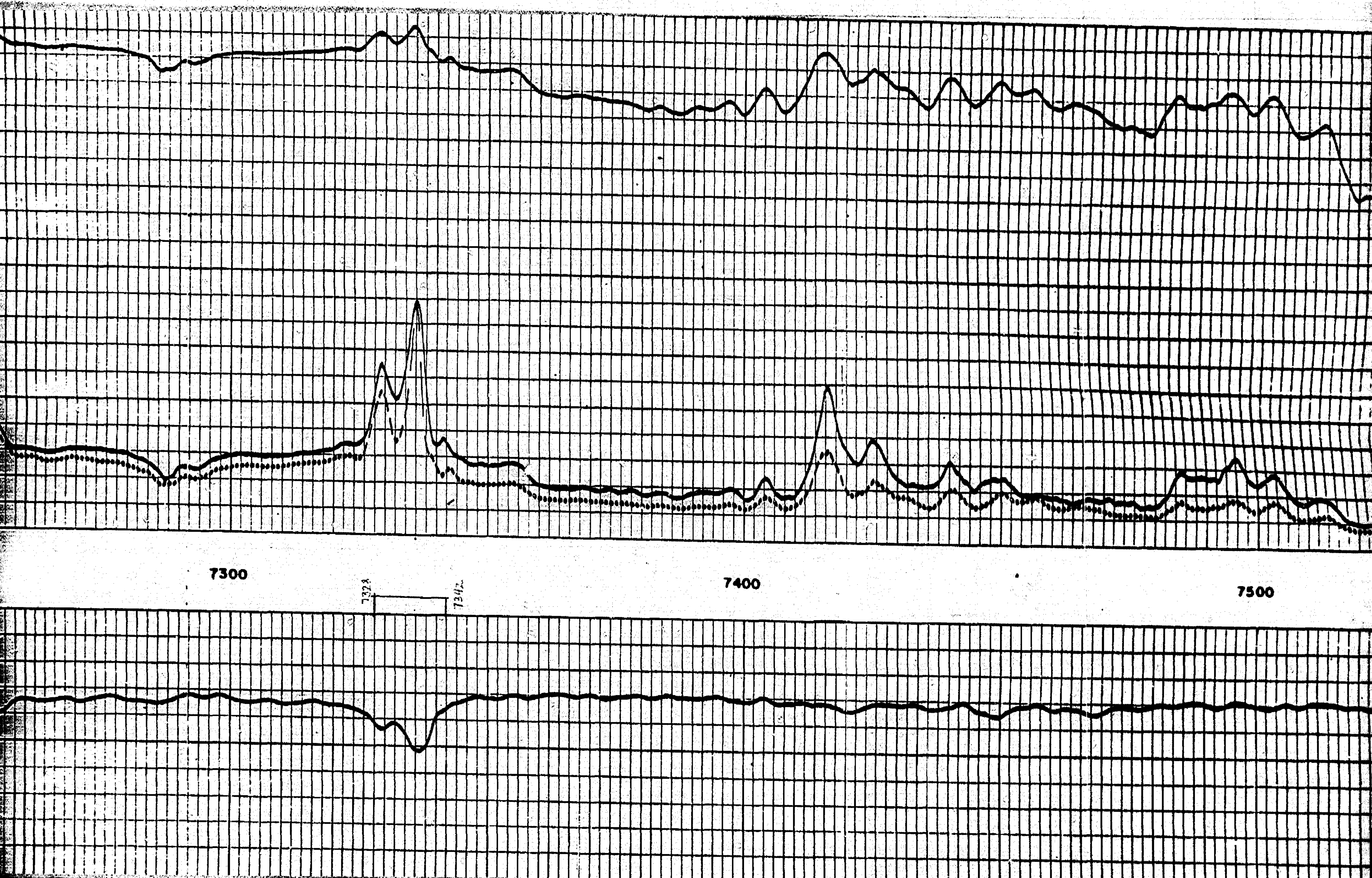
Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down Hole

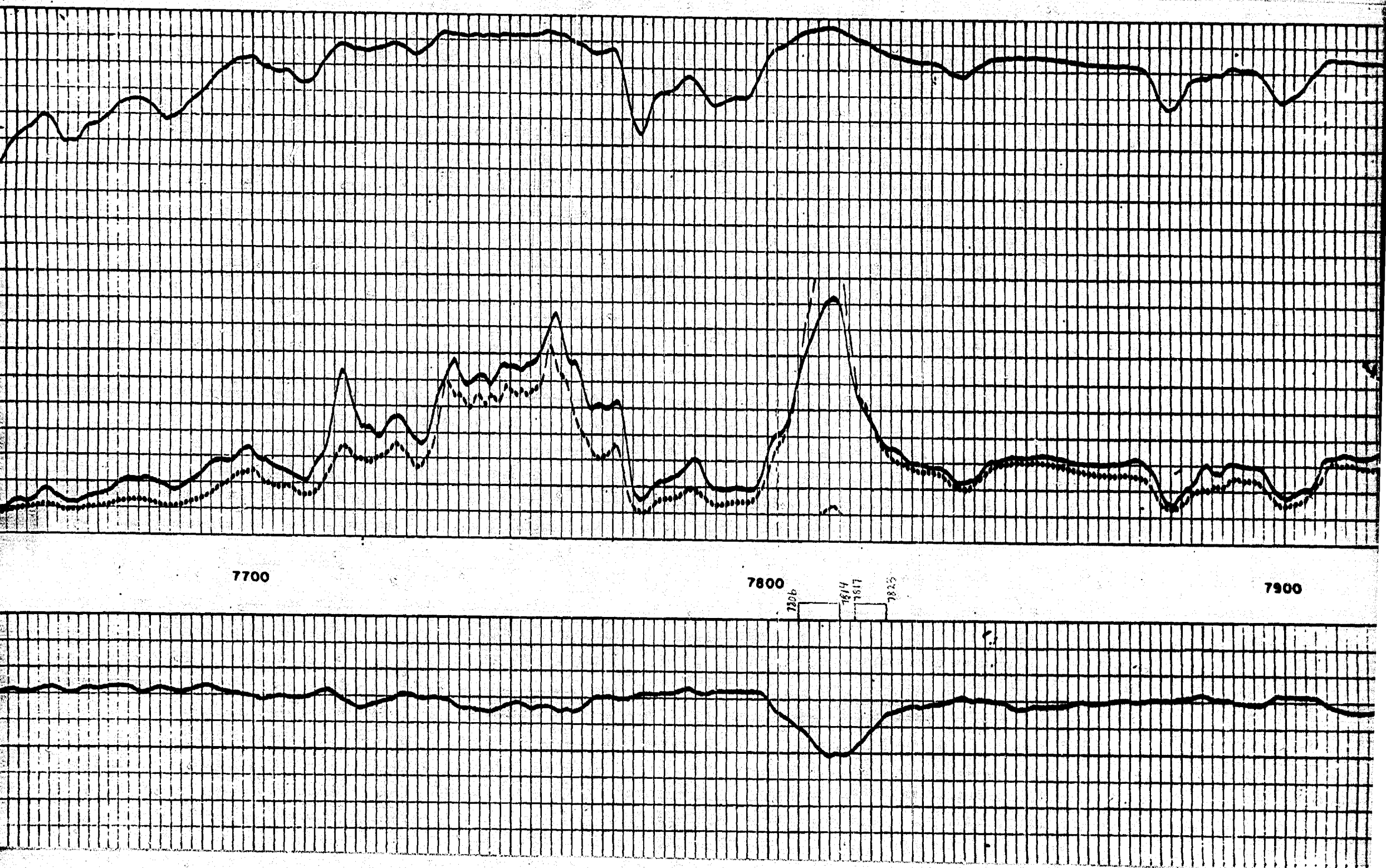
Equipment Data

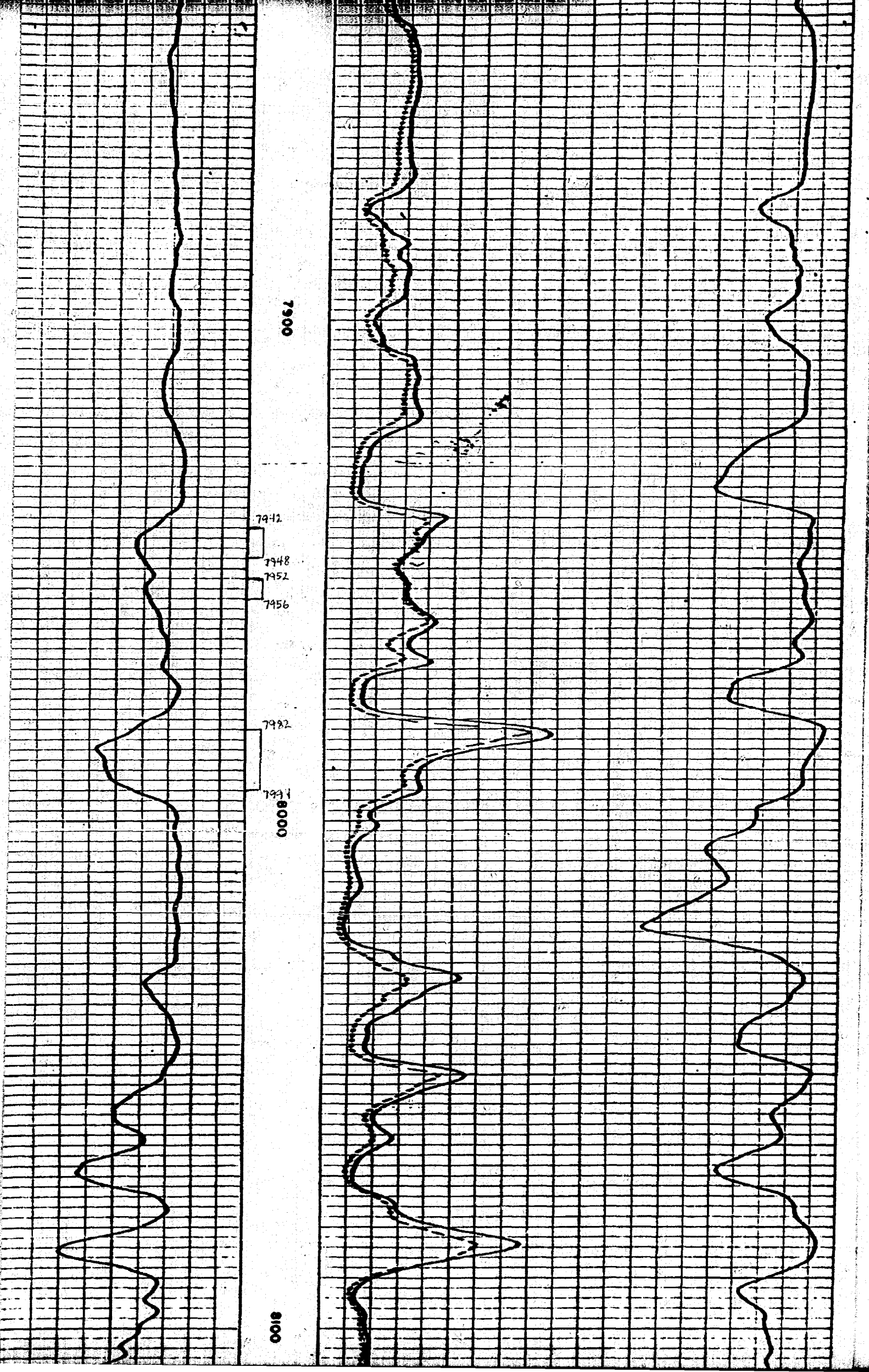
Run No.	Tool Type	Pad Type / Tool Position	Other
1	805 S.N. 23	Free	

SPONTANEOUS POTENTIAL Millivolts	DEPTH	CONDUCTIVITY Millimhos/m
− 10 +		INDUCTION CONDUCTIVITY 40" SPACING 400
		RESISTIVITY Ohms m²/m — 16" NORMAL 0 100



7300
7328
7342
7400
7500


7700
7800
7806
7814
7817
7825
7900


7900
7942
7948
7952
7956
7982
7994
8000
8100

SCHLUMBERGER INDUCTION-ELECTRICAL LOG

COMPANY JEROME P McHUGH

TOPS MARKED ON 5'

WELL JICARILLA A3 Perfs

FIELD BASIN DAKOTA

COUNTY RIO ARRIBA STATE NEW MEXICO

LOCATION 990' FNL, 990' FWL

Sec. 19 Twp. 26N Rge. 3W

Other Services: FDC-GR BHC

Permanent Datum: GL, Elev. 7007'

Log Measured From KB, 13 Ft. Above Perm. Datum

Drilling Measured From KB

Elev.: K.B. 7020 D.F. 7019 G.L. 7007

Date	5-20-69		
Run No.	ONE		
Depth—Driller	8100		
Depth—Logger	8086		
Btm. Log Interval	8085		
Top Log Interval	212		
Casing—Driller	8 5/8 @ 211	@	@
Casing—Logger	212		
Bit Size	7 7/8		
Type Fluid in Hole	FGM		
Dens. / Visc.	9.3 / 70		
pH / Fluid Loss	9 / 8.8 ml	ml	ml
Source of Sample	Flowline		
R_m @ Meas. Temp.	3.65 @ 68 °F	@ °F	@ °F
R_{mf} @ Meas. Temp.	3.97 @ 68 °F	@ °F	@ °F
R_{mc} @ Meas. Temp.	— @ — °F	@ °F	@ °F
Source: R_{mf} / R_{mc}	M / —		
R_m @ BHT	1.60 @ 155 °F	@ °F	@ °F
Time Since Circ.	3 HRS		
Max. Rec. Temp.	155 °F	°F	°F
Equip. / Location	7070 / FAR		

FIELD PRINT

The well name, location and borehole reference data were furnished by the customer.

REMARKS

Changes in Mud Type or Additional Samples

Sample No.		
Depth—Driller		
Type Fluid in Hole		
Dens. / Visc.		
pH / Fluid Loss	ml	
Source of Sample		
R_m @ Meas. Temp.	@ °F	@ °F
R_{mf} @ Meas. Temp.	@ °F	@ °F
R_{mc} @ Meas. Temp.	@ °F	@ °F
Source: R_{mf} / R_{mc}		
R_m @ BHT	1.60 @ 155 °F	@ °F
R_{mf} @ BHT	1.30 @ 155 °F	@ °F
R_{mc} @ BHT	@ °F	@ °F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down Hole

Equipment Data

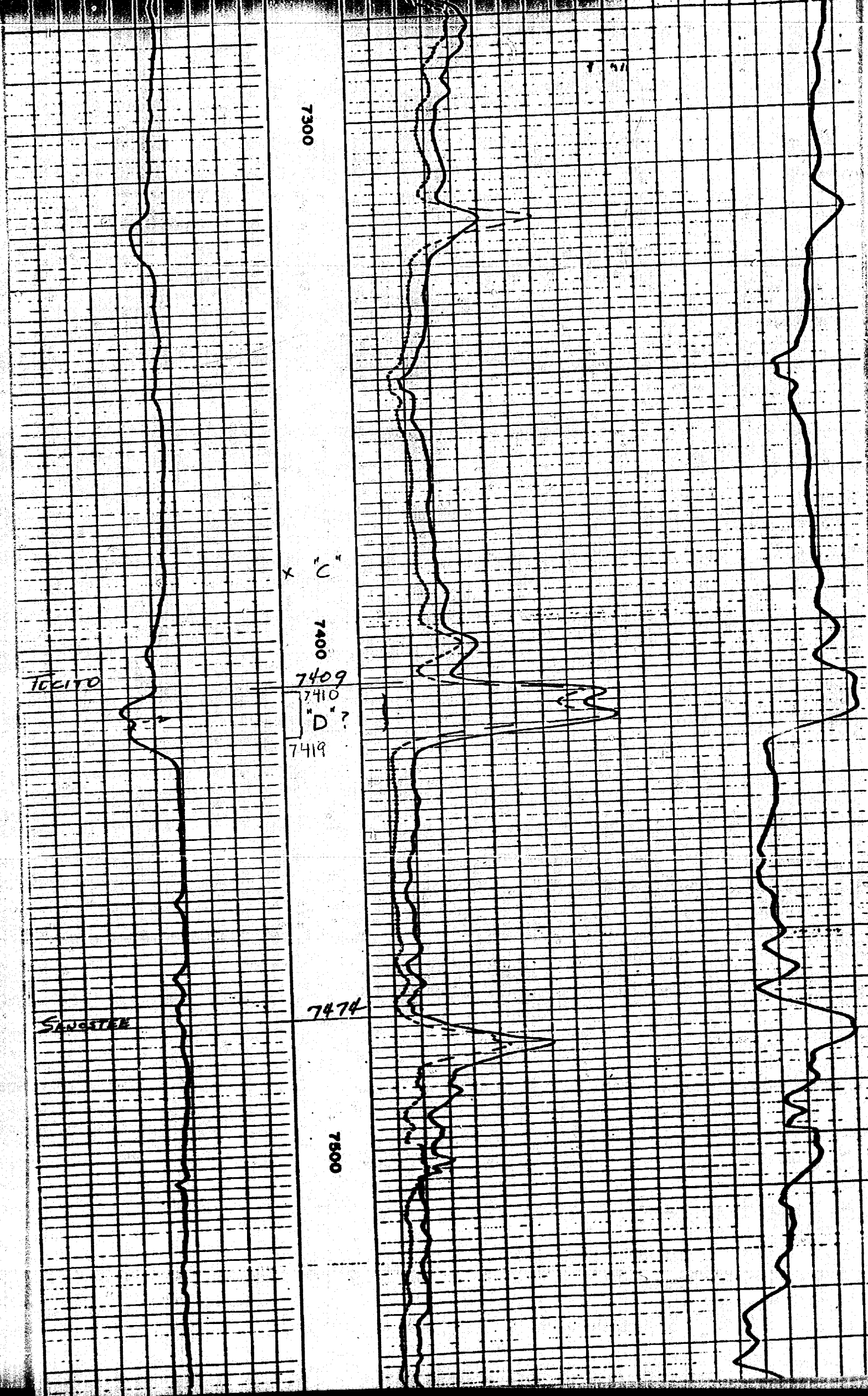
Run No.	Tool Type	Tool Position	Other

Run No.: ONE
C.D.: USED
S.O.: 1.5 INCHES
PANEL No.: 1RP-H-422
CART. No.: 1RC-F-390
SONDE No.: 1RS-M-737
IAP No.: MMP-B-238
S.B.R.: 4

Check one, filling in blanks where applicable:
- [x] Surface determined sonde errors used for 6FF40
- [ ] 6FF40 sonde error corrected for borehole signal at Rm =
- [ ] 6FF40 zero set in hole at depth of

Application for Downhole Commingling
Jerome P. McHugh
Apache #3-E Well
Unit H, Sec. 19, T-26-N, R-3-W
Rio Arriba County, New Mexico
Case No. 7282
Exhibit No. 6

SPONTANEOUS-POTENTIAL millivolts	DEPTHS	CONDUCTIVITY millimhos/m = 1000/ohm-m
10 — |↔| +		6FF40 INDUCTION: 400 — 200 — 0; 600 — 400


7300
"C"
7400
7409
7410
"D"?
7419
7474
7500
TOCITO
SANOSTEE

7876

7888

7900

DAKOTA

7975

8000

8010

8014

8020

8024

8050

8058

8100

Welex

INDUCTION • ELECTRIC LOG

COMPANY J.P. McHugh
WELL Jicarilla "A" #4
FIELD Basin Dakota
County Rio Arriba State N. Mex

COMPANY	Jerome P. McHugh Perfs
WELL	Jicarilla "A" #4 Apache #4
FIELD	Basin Dakota
COUNTY	Rio Arriba STATE New Mexico
Location	1650' FSL & 990' FWL
Sec. 19 Twp 26-N Rge 3-W	Other Services: Gamma Density Caliper

Permanent Datum Ground Level Elev. 7192'
Log Measured From Kelly Bushing 13 Ft. Above Perm. Datum
Drilling Measured From Kelly Bushing
Elev.: K.B. 7205, D.F. 7204, G.L. 7192

Date	8-5-69			
Run No.	ONE			
Depth—Driller	8280'			
Depth—Welex	8270'			
Btm. Log Inter.	8264'			
Top Log Inter.	Surf			
Casing—Driller	8 5/8 @ 240'	@	@	@
Casing—Welex	238'			
Bit Size	7 7/8			
Type Fluid in Hole	Mud-Gel			
Dens. | Visc.	9.6 | 44	|	|	|
pH | Fluid Loss	8 | — ml	| ml	| ml	| ml
Source of Sample	Pit			
R_m @ Meas. Temp.	2.70 @ 82 °F	@ °F	@ °F	@ °F
R_{mf} @ Meas. Temp.	2.00 @ 84 °F	@ °F	@ °F	@ °F
R_{mc} @ Meas. Temp.	2.74 @ 86 °F	@ °F	@ °F	@ °F
Source R_{mf} R_{mc}	Press | Press	|	|	|
R_m @ BHT	1.55 @ 158 °F	@ °F	@ °F	@ °F
Time Since Circ.	3 Hours			
Max. Rec. Temp.	158 °F @ B.H.	°F @	°F @	°F @
Equip. | Location	7757 | Farm	|	|	|
Recorded By	[illegible]			

Fold Here

Service Ticket No. W-32854 Remarks:

Change in Mud Type or Additional Samples

Date | Sample No.		
Depth—Driller		
Type Fluid in Hole		
Dens. | Visc.	|	|
ph | Fluid Loss	| ml	|
Source of Sample		
R_m @ Meas. Temp.	2.70 @ 82 °F	@ °F
R_{mf} @ Meas. Temp.	2.00 @ 84 °F	@ °F
R_{mc} @ Meas. Temp.	2.74 @ 86 °F	@ °F
Source: R_{mf} | R_{mc}	|	|
R_m @ BHT	1.55 @ 158 °F	@ °F
R_{mf} BHT	1.18 @ 155 °F	@ °F
R_{mc} BHT	1.60 @ 158 °F	@ °F

SCALE CHANGES

Type Log	Depth	Scale Up Hole	Scale Down Hole

EQUIPMENT DATA

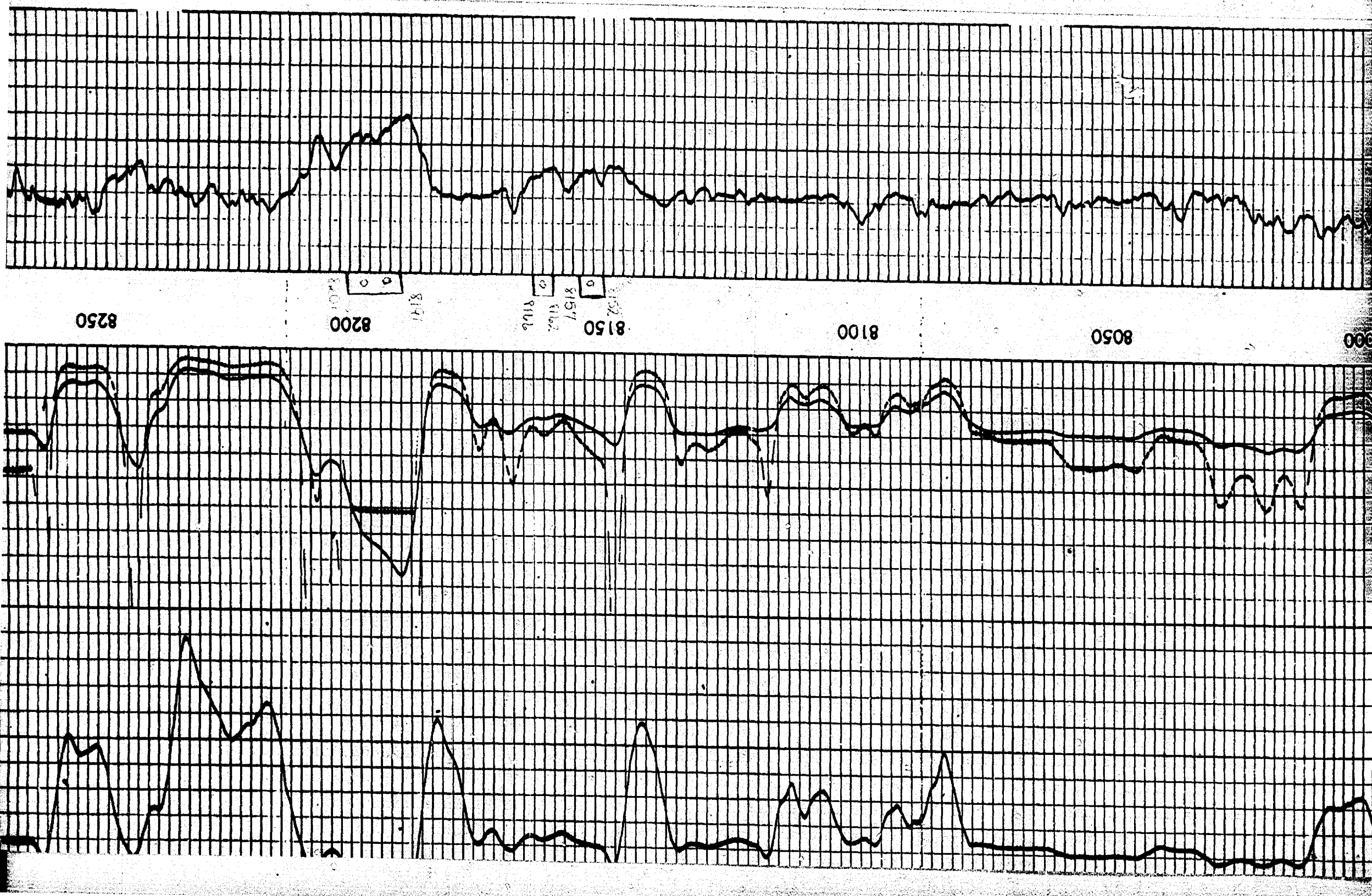
Run No.	Tool Type and No.	Pad Type	Tool Position	Other
ONE	Mod-42-1359		Free	

Application for Downhole Commingling
Jerome P. McHugh
Apache #3-E Well
Unit H, Sec. 19, T-26-N, R-3-W
Rio Arriba County, New Mexico
Case No. 7282
Exhibit No. 7

2" = 100'

POTENTIAL MILLIVOLTS	RESISTIVITY OHMS M²/M	CONDUCT[IVITY]
— 10 +	18" Normal	Induction
	0 — 100	250 — 0
Rmf 1.18 at 158 °F.	0 — 1000	500 — 250
	Induction	RESISTIVITY OHMS M²/M
	0 — 100	

7500
7550
7600
7650
7700
610
7544
7550
7544
-337
7623
-416
OFFEE
7924
-517
WER MANCOS


8250
8200
8150
8100
8050

dugan production corp.

Application for Downhole Commingling
Jerome P. McHugh
Apache #3-E Well
Unit H, Sec. 19, T-26-N, R-3-W
Rio Arriba County, New Mexico
Case No. 7282
Exhibit No. 8

J. P. MC HUGH
Apache #3E
1710' FNL - 1120' FEL
Sec 19 T26N R3W
Rio Arriba County, NM

MORNING REPORT

4-24-81 M.I. & R.U. Four Corners rig #10. Spudded 12-1/4" hole at 12:00 noon, 4-23-81. Drilled to 260'. Ran 6 jts. 8-5/8" O.D., 24#, K 55, 8 Rd. St & c csg. T.E. 240.86' set at 253' RKB. Cemented w/ 170 sks class "B" plus 2% CA Cl_2. P.O.B. @ 5:15 PM 4-23-81. Cemented. Circulated. Nipped up B.O.P. Press tested csg. and B.O.P. w/ 500 psi. Held O.K. Present operation drilling at 680' w/ wtr. 1/2° at 260'.

5 - M.I. & R.U.
1 - Drill Rat & Mouse holes
1/4 - Circulate
2-1/2 - Drilling
1/2 - Run csg.
1-1/4 - Rig up cementer and cement
12 - W.O.C.
1 - Drill cement and Press test

4-25-81 2718' Drlg. wt 8.8 Vis. 29 W.L. 8.0 . 3/4° at 1034', 1-1/4° at 1440', 1/2° at 2019', 1/2° at 2431'.

3 - Trip
19-1/2 - Drilling
1/2 - Rig service
1/2 - Survey
1/2 - Wash to btm

4-26-81 3529' Drlg. w.t. 8.8 Vis. 34 W.L. 8.0
3/4° at 2997', 1-1/4° at 3072, 1° at 3508'

2-1/2 - Trip
19-1/4 - Drilling
3/4 - Rig Service
1/2 - Survey
1 - Wash to btm.

709 BLOOMFIELD RD. • P. O. BOX 208 • FARMINGTON, NEW MEXICO 87401 • PHONE: 505-325-1821

4-27-81 4050' Drlg. Wt. 8.9 Vis. 34 W.L. 8.0
3/4° at 4030'

2-1/4 - Trip
16-3/4 - Drilling
3/4 - Rig Service
1/4 - Survey
2-1/2 - Lost circulation at 3780'
1/2 - Wash to btm

4-28-81 4500' Drlg. Wt. 8.9 Vis. 40 W.L. 8 12% LCN

20 - Drilling
3/4 - Rig Service
3-1/4 - Lost circulation at 4260'

4-29-81 4890' Drilling. Wt. 9.0 Vis 40 W.L. 8.5 Tr. LCM
1° at 4501'

23 - Drilling
3/4 - Rig Service
1/4 - Survey

4-30-81 5205' Drlg. Wt. 9.0 Vis 40 W.L. 7.5
1-1/4° at 4896'

4-3/4 hrs - Trip
17-1/2 hrs - Drilling
3/4 hr - Rig Service
3/4 hr - Cut drilling line
1/4 hr - Wash to btm

5-1-81 5675' - Drilling Wt. 9.0 Vis 40 W.L. 6.0
1° at 5399'

23 hrs - drilling
3/4 hr - rig service
1/4 hr - survey

Lost 100 bbls mud at 5337'.

5-2-81 5878' - Mixing mud and L.C.M. Wt. 8.6 Vis 45 W.L. 7.2
25% L.C.M.

10-1/2 hrs - drilling
1/4 hr - rig service
13-1/4 hrs - lost circ. (lost 1000 bbls.)

5-3-81 6019' - Lost circulation Wt. 8.2 Vis 45 W.L. 7.2
30% L.C.M. 1¼° at 5900'; 1¼° at 6019'

6 hrs - drilling 1/4 hr survey
1/2 hr - rig service
12-1/4 hrs - lost circ. (lost 1000 bbls.)

5-4-81 6296' - Drilling Wt. 8.9 Vis 47 W.L. 7.0 30% L.C.M.

16 hrs - drilling
3/4 hr - rig service
7-1/4 hrs - lost. circ.

5-5-81 6697' Wt. 8.9 Vis 45 W.L. 6.8 30% L.C.M.
1° at 6544'

23 hrs - drilling
3/4 hr - rig service
1/4 hr - survey

5-6-81 7070' - Drilling Wt. 9.0 Vis 43 W.L. 6.0 30% L.C.M.

23-1/4 hrs - drilling
3/4 hr - rig service

5-7-81 7420' - Trip Wt. 9.0 Vis 42 W.L. 7.0 12% L.C.M.

3/4 hr - trip
22-1/2 hrs - drilling
3/4 hr - rig service

5-8-81 7637' - drilling Wt. 9.0 Vis 44 W.L. 4.6 20% LCM

7-1/4 hrs - trip
13 hrs - drilling
1/4 hr - rig service
3/4 hr - cut drilling line
2-3/4 hrs - lost circ.

5-9-81 7818' - Trip 1¼° at 7818' Wt. 9.0 Vis 44 W.L. 6.4
20% LCM

6-1/2 hrs - trip
16-1/4 hrs - drilling
3/4 hr - rig service
1/2 hr - fill pipe and circ. at 5330'

5-10-81 7995' - Drilling Wt. 9.0 Vis 44 W.L. 8.0 10% LCM

1-1/4 hrs - trip
20-1/4 hrs - drilling
3/4 hr - rig service
3/4 hr - repair air line
1 hr - wash to btm.

5-11-81 8185' - Drilling Wt. 9.1 Vis 63 W.L. 7.4 10% LCM

21 hrs - drilling
2-1/4 hrs - reaming and drilling thru fracture
3/4 hr - rig service

5-12-81 8197' - Circ.

8 hrs - trips
1 hr - drilling
1/4 hr - rig service
4-3/4 hrs - circ.
9-1/2 hrs - logging
1/2 hr - wash to btm.

Ran IES & CDL logs by Welex. Trip in hole and circ. Prep to lay down drill pipe.

5-13-81 Rigging down rotary tools

1-1/4 hrs - circ.
5-1/4 hrs - lay down D.P.
1/2 hr - rig up csg. crew
5-1/4 hrs - run csg.
3/4 hr - rig up cementers & circ.
1 hr - cement first stage

P.O.B. at 8:00 p.m. Opened stage tool and circ. 3 hrs.
Cemented 2nd stage. 1 hr. P.O.B. at 12:00 midnight.
Circ. 2 hrs. Cement 3rd stage 1 hr. P.O.B. at 3:00 a.m.
Set slips & cut off csg.
2 hrs - nipple down & prep to move.

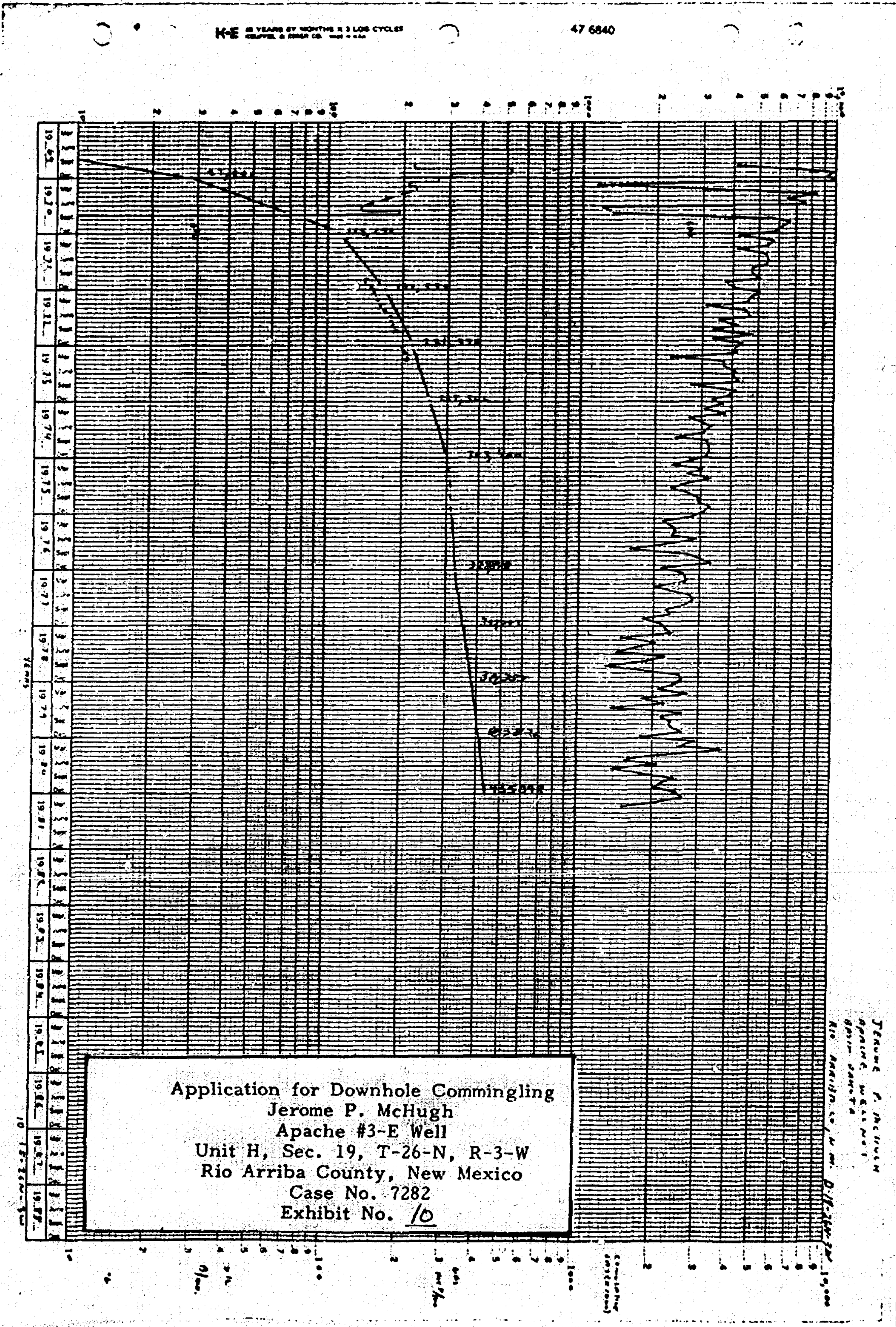
Ran 35 jts. 4½" OD, 11.6# K-55, 8 Rd, ST&C csg. and 166 jts. 4½" OD, 10.5#, 8 Rd, ST&C csg. T.E. 8208.73' set at 8197' RKB. Cemented first stage w/ 10 bbls mud flush followed by 200 sx class "B" 8% gel followed by 150 sx class "B" w/ 7½# salt per sk. (Total slurry 565.5 cu.ft.) Good mud returns while cementing. Reciprocated csg. OK while cementing. Maximum cementing pressure 600 psi. Bumped plug w/ 1200 psi. Float held OK. POB at 8:00 p.m. 5-12-81. Opened stage tool at 6100'. Circulated three hrs w/ rig pump. Cemented second stage w/ 10 bbls. mud flush followed by 250 sx 65-35 plus 12% gel & ¼# flocele per sk. followed by 50 sx class "B" neat w/ ¼# flocele per sk. (Total cement slurry 714 cu.ft.). Good circ. throughout job. (Cont.)

5-13-81 (cont.) Closed stage tool w/ 2000 psi. Held OK. P.O.B. at [illegible]:00 midnight. Opened stage tool at 3816'. Circ. 2 hrs w/ rig pump. Cemented 3rd stage w/ 10 bbls mud flush followed by 400 sx 65-35 plus 12% gel # ¼# flocele per sk followed by 50 sx class "B" w/ ¼# flocele per sk. (Total cement slurry 1107 cu.ft.) Good mud returns throughtout job. Maximum cementing pressure 900 psi. Closed stage tool w/ 2500 psi. Held OK. Estimated cement top 600'. Job complete at 3:00 a.m. 5-13-81. Set 4½" csg. slips. Cut off csg. and released rig at 5:00 a.m. 5-13-81.

SHUT-IN PRESSURES

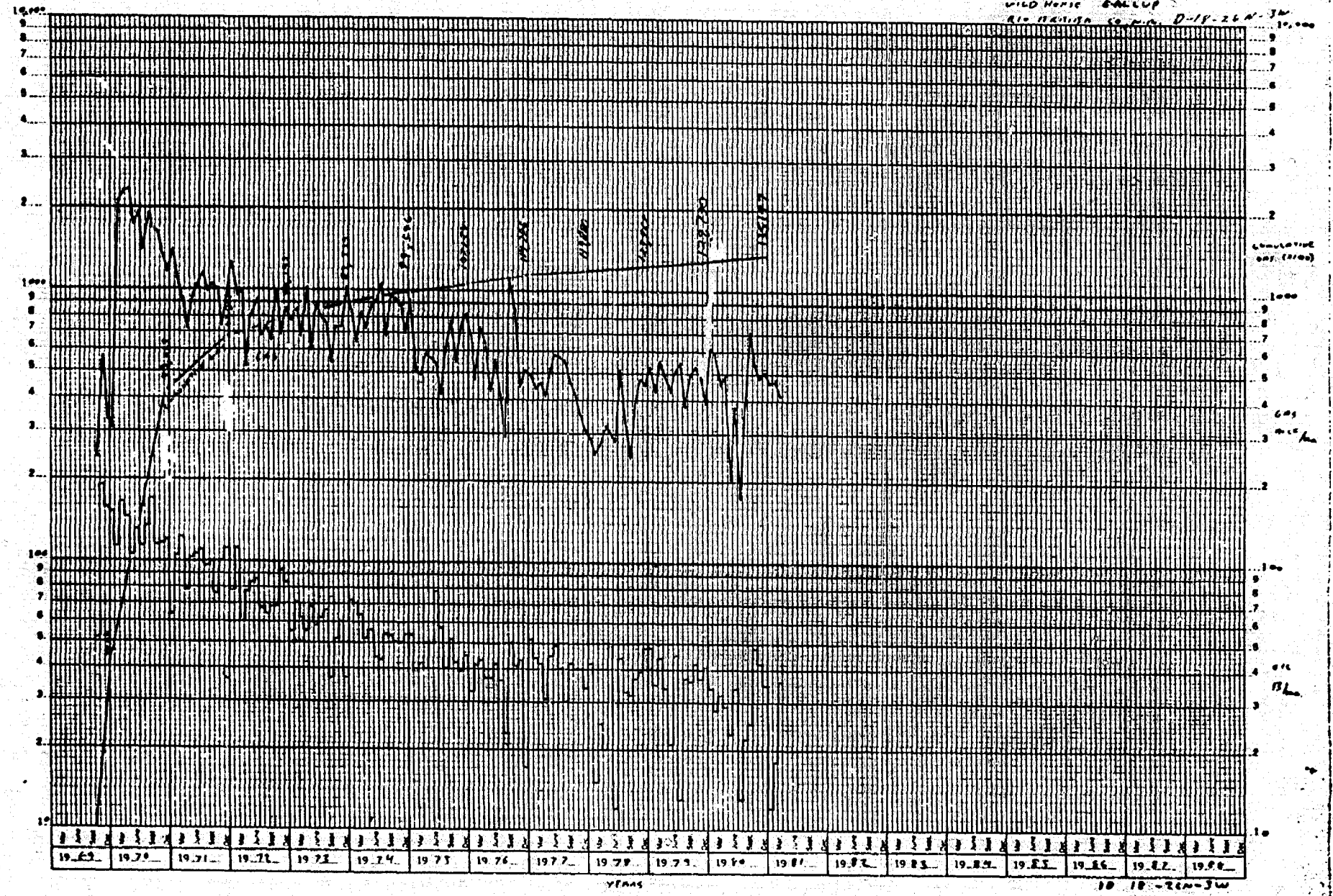
WELL	ZONE	INITIAL TEST	DATE	CURRENT TEST	DATE
Apache #1	Upper completion	1669 psig	9-2-69	300 psig	7-20-80
	Lower completion	2309 psig	9-2-69	510 psig	7-20-80
Apache #2	Upper completion	1514 psig	1-25-71	0	7-20-80
	Lower completion	1835 psig	1-25-71	510 psig	7-20-80
Apache #3	Upper completion	1357 psig	9-13-70	300 psig	7-2-80
	Lower completion	1496 psig	9-13-70	0	7-2-80
Apache #4	Upper completion	1330 psig	10-8-69	605 psig	5-27-78
	Lower completion	1345 psig	10-8-69	605 psig	2-20-78

Application for Downhole Commingling
Jerome P. McHugh
Apache #3-E Well
Unit H, Sec. 19, T-26-N, R-3-W
Rio Arriba County, New Mexico
Case No. 7282
Exhibit No. 9



Application for Downhole Commingling
Jerome P. McHugh
Apache #3-E Well
Unit H, Sec. 19, T-26-N, R-3-W
Rio Arriba County, New Mexico
Case No. 7282
Exhibit No. 10

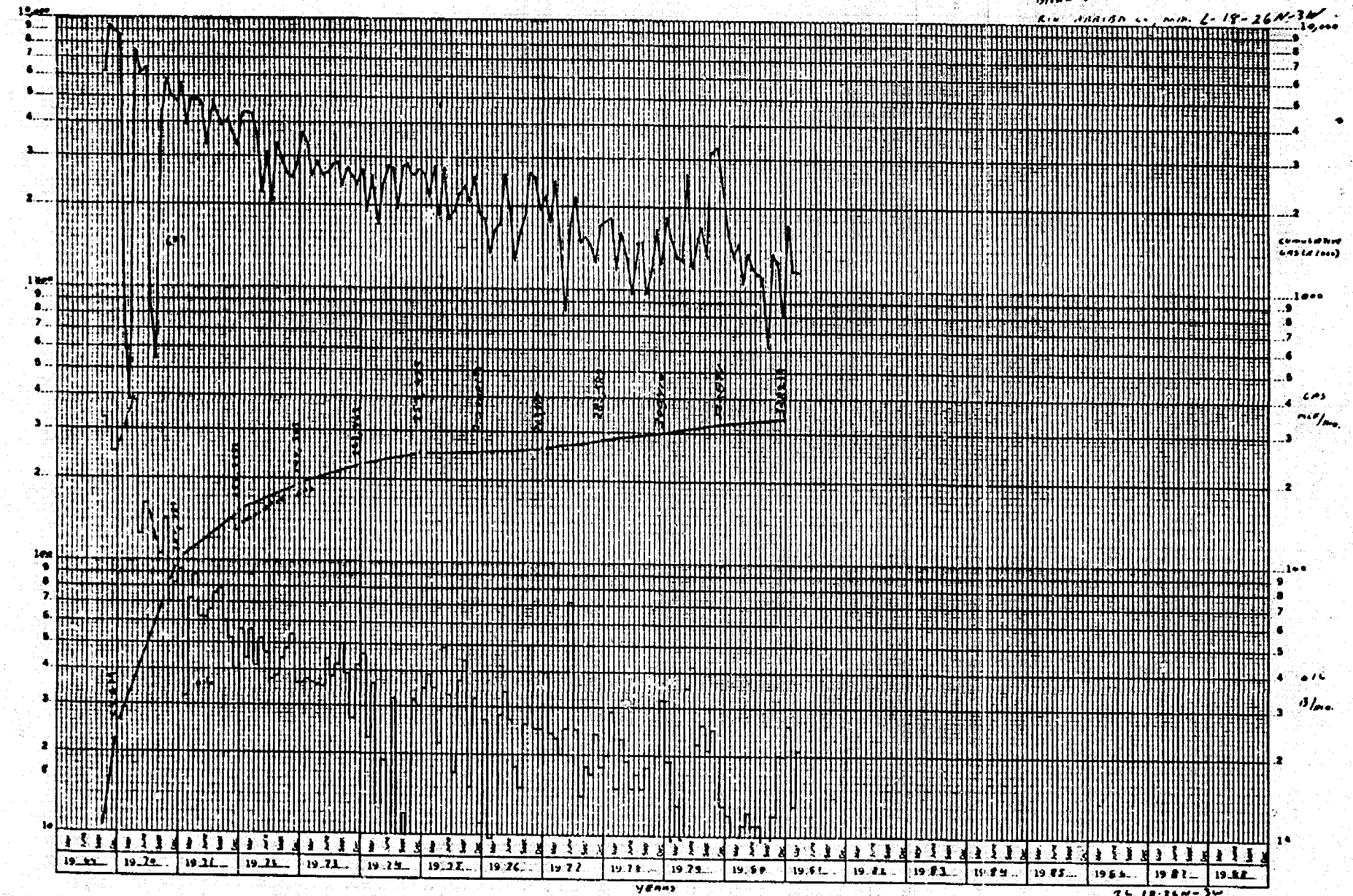
JEROME P. McHUGH
APACHE WELL No. 1
WILDHORSE GALLUP
RIO ARRIBA CO., N.M. D-18-26N-3W



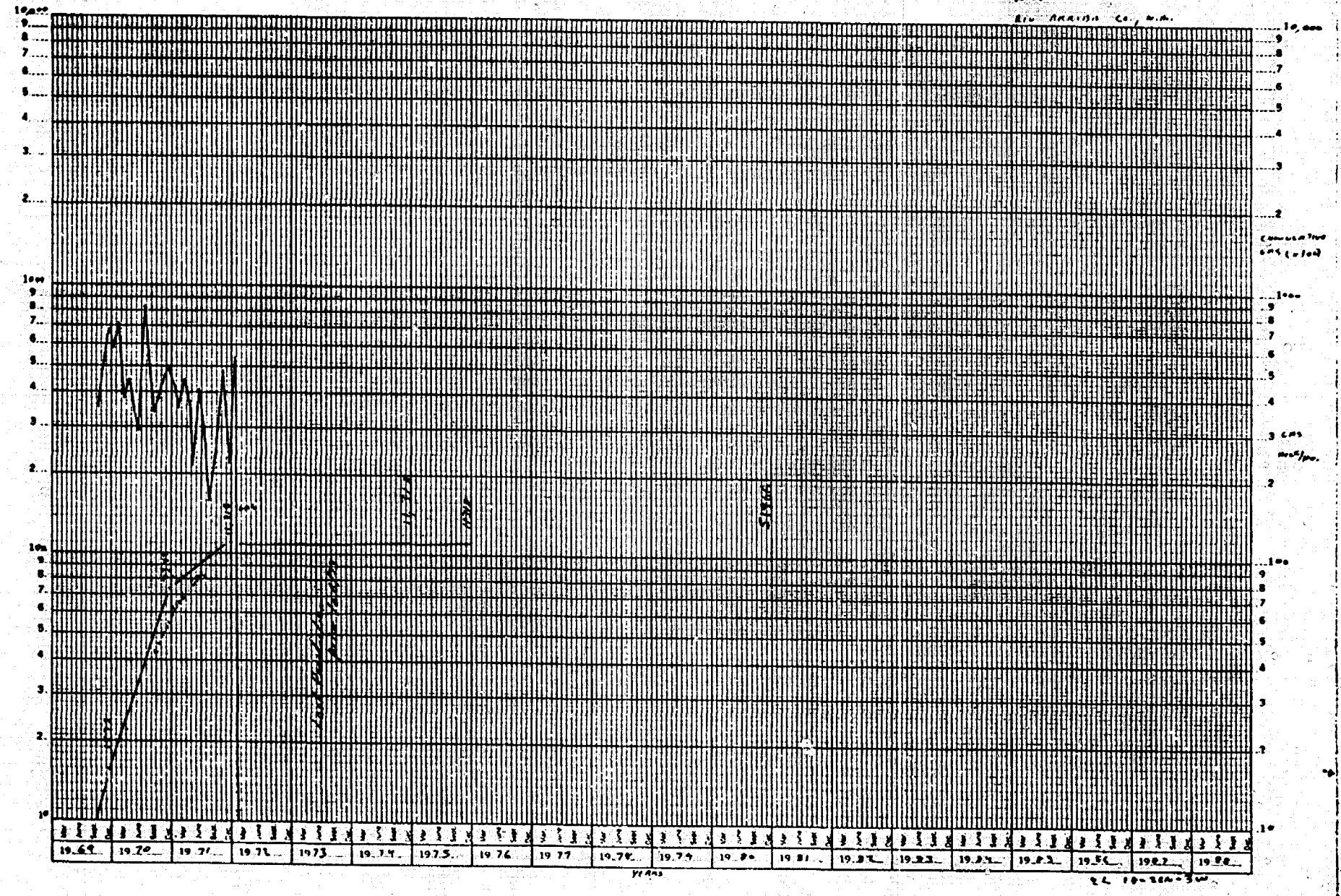
10 18 -26N-3W

47 6440
KE 10 X 10 TO THE INCH 5 CYCLES
KEUFFEL & ESSER CO. MADE IN U.S.A.

JEROME P. MCHUGH
APACHE WELL NO. 2
GRAND VALLEY
RIO BLANCO CO. MIN. L-18-26N-3W



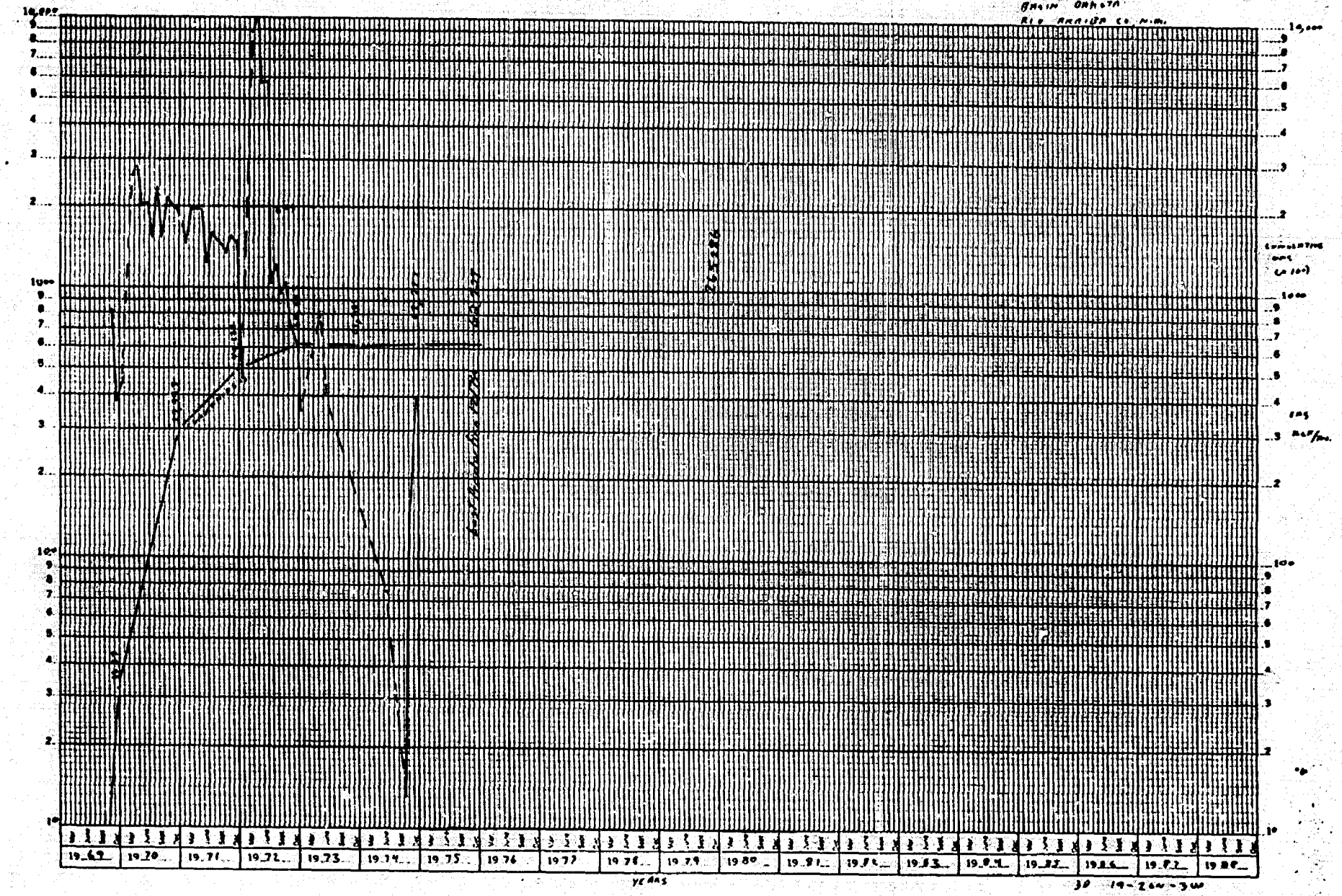
JEROME P. MCHUGH
APACHE WELL NO. 2
WILDHORSE GALLUP
EDDY COUNTY, N.M.



47 6840

K-E 20 YEARS BY MONTHS X 5 LOG CYCLES

JEROME P. McHUGH
APACHE WELL NO 5
BAKER DAKOTA
RIO ARRIBA CO. N.M.

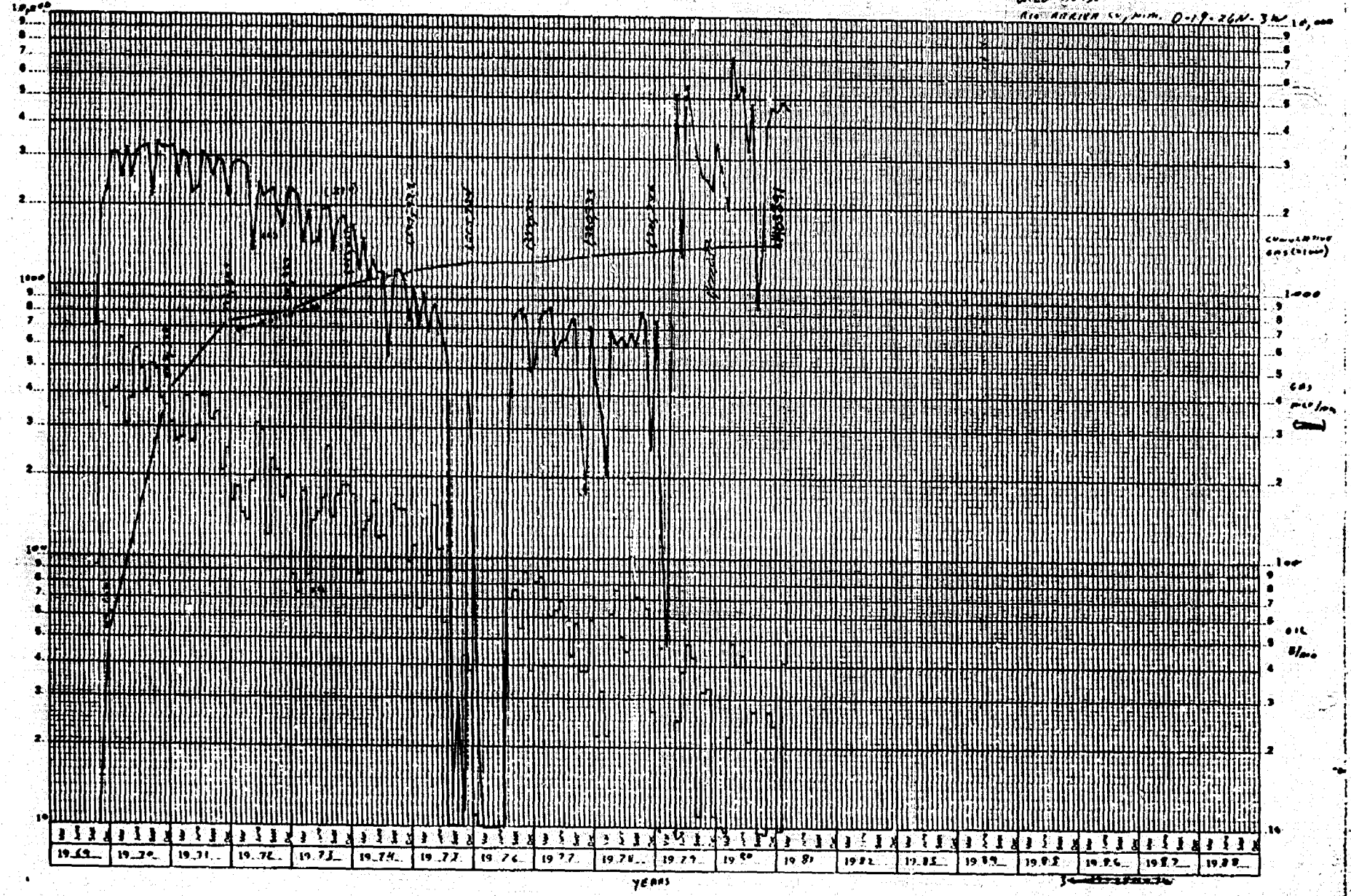


47 6840

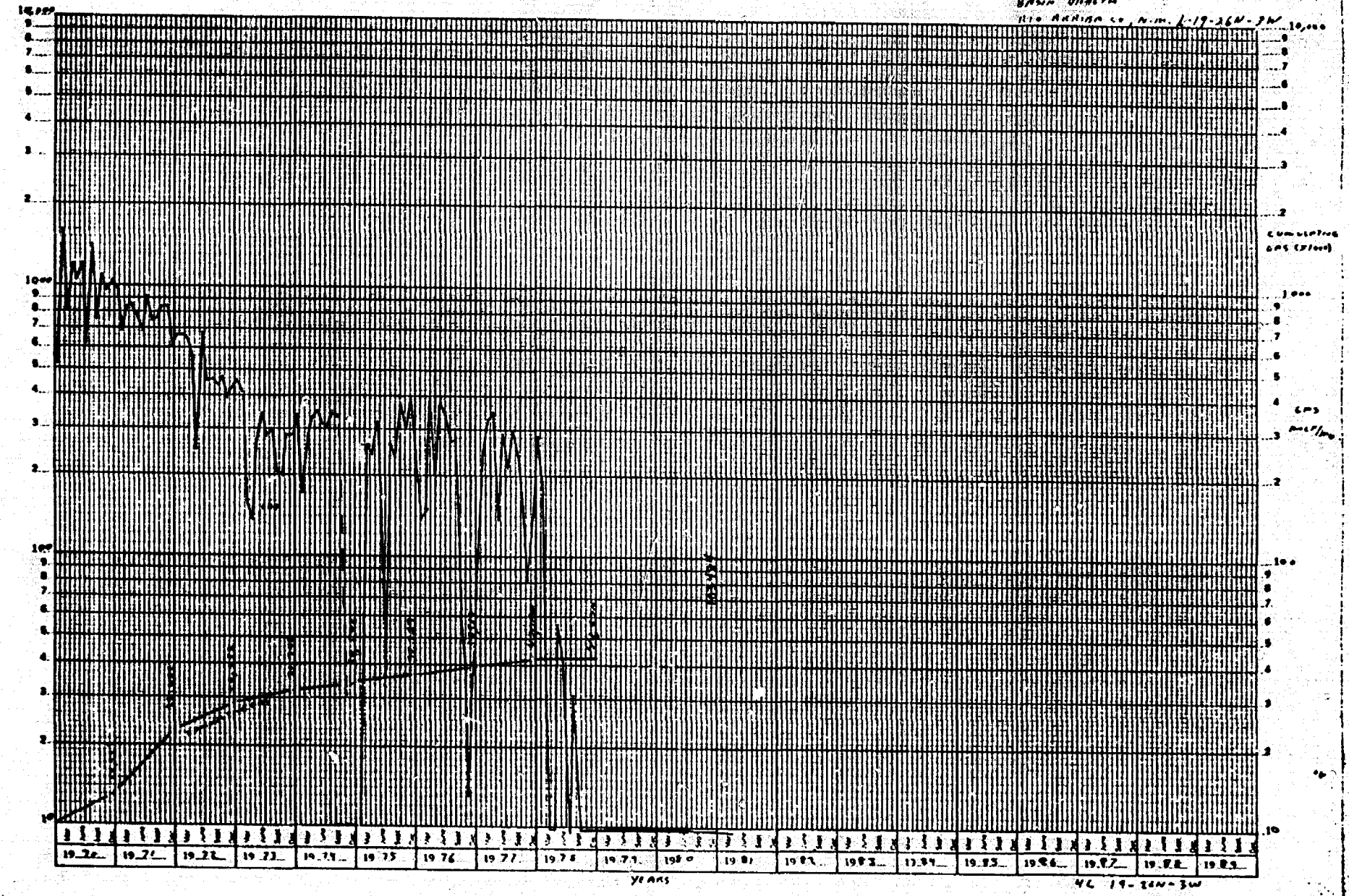
K+E 10 YEARS BY MONTHS X 3 LOG CYCLES
MADE IN U.S.A.

30 19-26W-3W

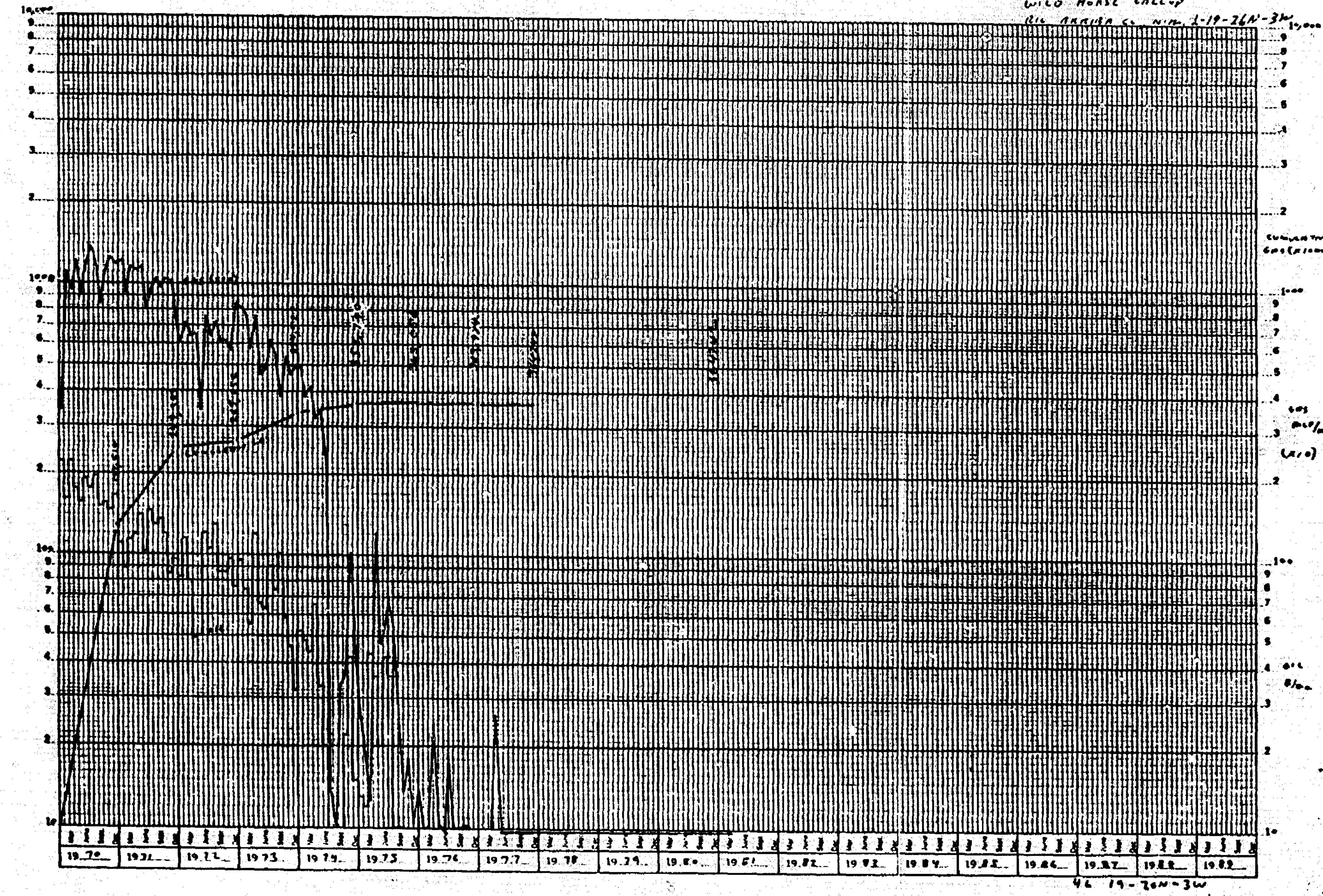
JEROME P. McHUGH
APACHE WELL No 3
WILD HORSE CALLOP
RIO ARRIBA CO., N.M. O-19-26N-3W



JEROME P. McHUGH
APACHE WELL NO 4
BASIN DAKOTA
RIO ARRIBA CO, N.M. L-19-26N-3W



Jerome P. McHugh
Apache Well No. 4
Wild Horse Gallup
Rio Arriba Co. N.M. 1-19-26N-3W

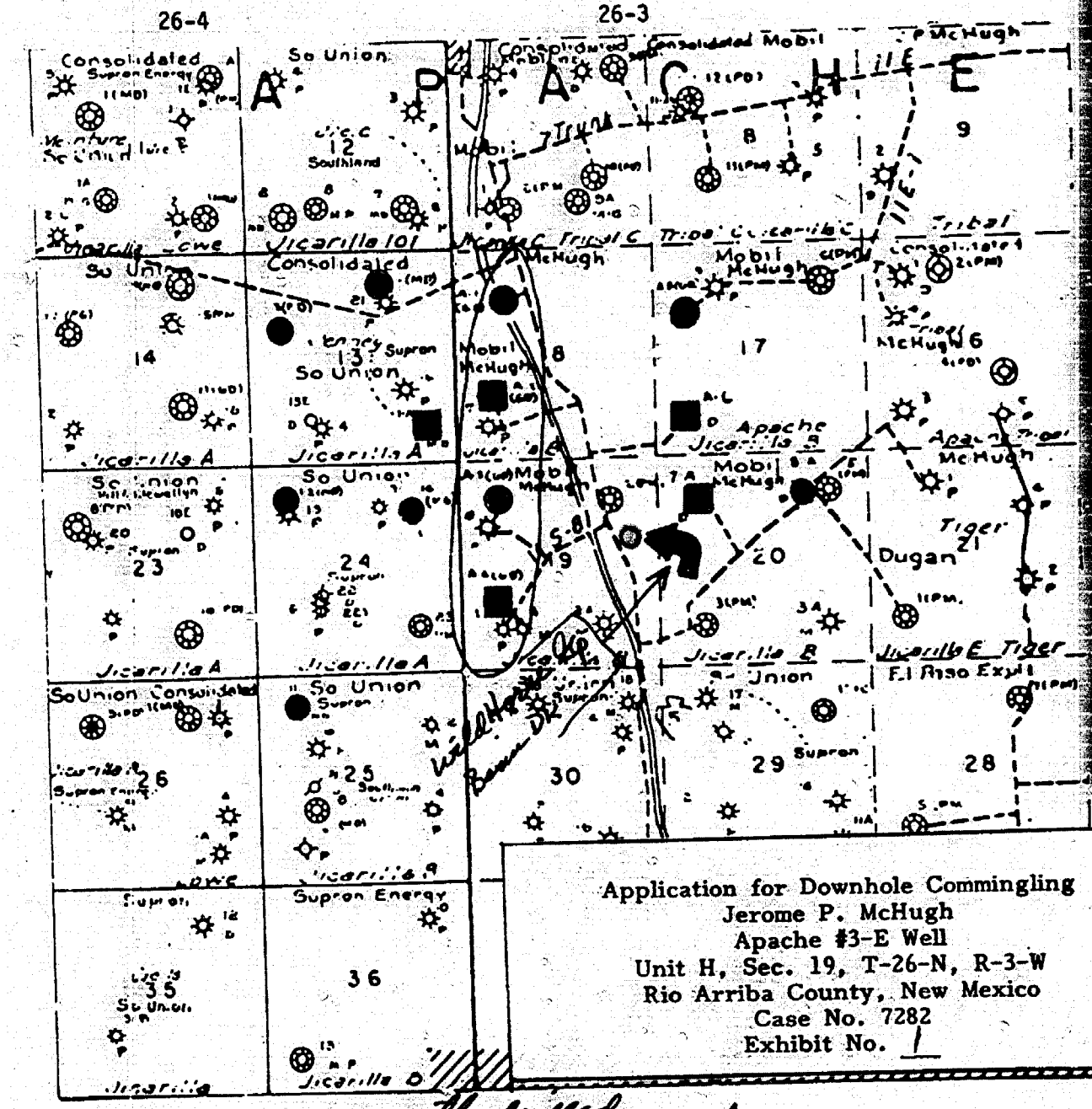


JEROME P. McHUGH - Apache #3E

SURROUNDING PRODUCTION

		Cumulative	1980	
BASIN DAKOTA				
T26N R4W				
Consolidated Oil & Gas Co.				
Sec 13 (B) Jenney #1 ●	gas	924980	46655	
	oil	20348	456	
(P) Jenney #1M ■	gas	77113	42779	
	oil	2067	904	
Southern Union Exploration Co.				
Sec 13 (E) Jicarilla A #13 ●	gas	435793	24372	
	oil	8465	661	
Sec 24 (D) Jicarilla A #12 ●	gas	373887	31578	
	oil	17471	773	
Sec 25 (D) Jicarilla B #11 ●	gas	83478	53243	
	oil	2202	1486	
T26N R3W				
Jerome P. McHugh				
Sec 17 (E) Apache #5 ●	gas	424436	20890	
	oil	8980	349	
Sec 17 (M) Apache #6 ■	gas	510170	35072	
	oil	28197	1186	
Sec 18 (D) Apache #1 ●	gas	435098	27272	
	oil	2481	--	
Sec 18 (L) Apache #2 ■	gas	338219	14325	
	oil	5635	134	
Sec 19 (D) Apache #3 ●	gas	265286	(Last production	
	oil	3171	(12/74	
Sec 19 (L) Apache #4 ■	gas	103484	[Last Production	
	oil	1329	[8/78	
Sec 20 (B) Apache #8 ●	gas	880	(Last production	
	oil	539	(prior to 6/73	
Sec 20 (D) Apache #7 ■	gas	262576	10989	
	oil	14177	257	
WILD HORSE GALLUP				
T26N R4W				
Southern Union Exploration Co.				
Sec 24 (A) Jicarilla A #14 ●	gas	512997	16634	
	oil	2891	--	
Sec 24 (D) Jicarilla A #12 ●	gas	1880638	55841	
	oil	7842	232	
T26N R3W				
Jerome P. McHugh				
Sec 18 (D) Apache #1 ●	gas	135197	5467	
	oil	7187	365	
(L) Apache #2 ■	gas	51966	S	
	oil	937	S	
Sec 19 (D) Apache #3 ●	gas	1463891	41854	
	oil	16081	275	

(Continued on reverse)



Application for Downhole Commingling
Jerome P. McHugh
Apache #3-E Well
Unit H, Sec. 19, T-26-N, R-3-W
Rio Arriba County, New Mexico
Case No. 7282
Exhibit No. 1

WILD HORSE GALLUP (Continued)		Cumulative	1980
T26N R3W			
Jerome P. McHugh			
Sec 19 (L) Apache #4[redacted]	gas	264242	S
	oil	5166	S

OFF-SET OPERATORS AND LEASES

T26N R4W

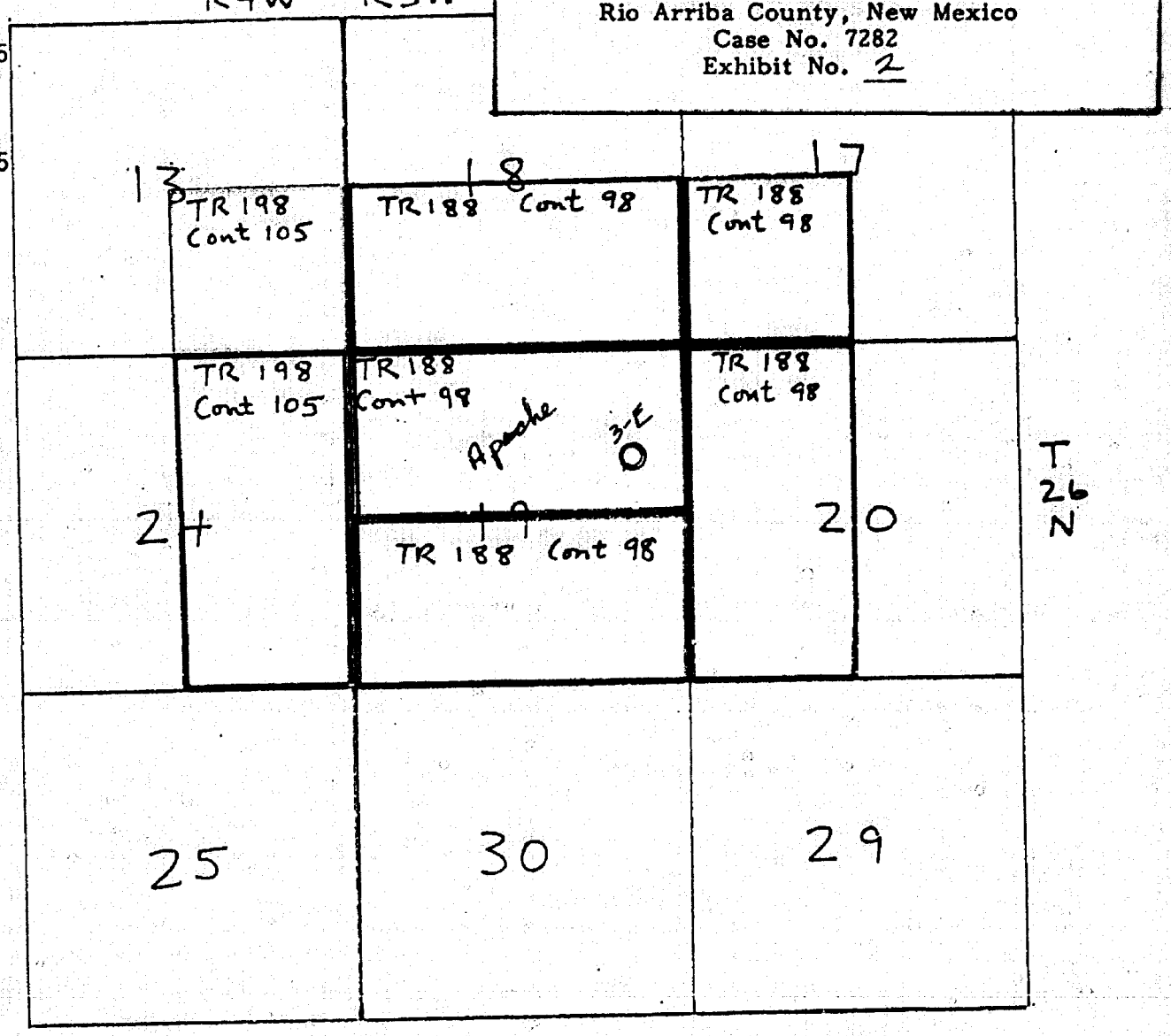
Sec 13 SE/4
Consolidated Oil & Gas Co.
Tract #198-Jicarilla Contract 105

Sec 24 E/2
Southern Union Production Co.
Tract #198-Jicarilla Contract 105

T26N R3W

Sec 18 S/2, Sec 19 S/2, Sec 17 SW/4, Sec 20 W/2
Jerome P. McHugh
Tract #188-Jicarilla Contract 98

Application for Downhole Commingling
Jerome P. McHugh
Apache #3-E Well
Unit H, Sec. 19, T-26-N, R-3-W
Rio Arriba County, New Mexico
Case No. 7282
Exhibit No. 2



JEROME P. McHUGH
Apache #3E
TR 188 - Con 98
N/2 Sec 19 T26N R3W

INDUCTION ELECTRIC LOG

COMPANY JEROME P. McHUGH

WELL APACHE #3E

FIELD BASIN DAKOTA

COUNTY Rio ARRIBA STATE NEW MEXICO

Other Services: CDL

Location: 1710' FNL / 1120' FEL

Sec. 19 Twp. 26N Rge. 3W

Permanent Datum GROUND LEVEL Elev. 7013 — Elev.: K.B. 7025'

Log Measured From KELLY BUSHING, 12 Ft. Above Perm. Datum — D.F. —

Drilling Measured From KELLY BUSHING — G.L. 7013

Date	5-11-81		
Run No.	ONE		
Depth—Driller	8197'		
Depth—Welex	8191'		
Btm. Log Inter.	8189'		
Top Log Inter.	2350'		
Casing—Driller	8 5/8" @ 252'	@	@
Casing—Welex	2350'		
Bit Size	7 7/8"		
Type Fluid in Hole	LCND		
Dens. / Visc.	9.2 / 63	/	/
pH / Fluid Loss	8.0 / 5.4 ml	/ ml	/ ml
Source of Sample	MUD PIT		
R_m @ Meas. Temp.	2.87 @ 70 °F	@ °F	@ °F
R_{mf} @ Meas. Temp.	2.5 @ 67 °F	@ °F	@ °F
R_{mc} @ Meas. Temp.	4.0 @ 63 °F	@ °F	@ °F
Source R_{mf} / R_{mc}	MEAS. / MEAS.	/	/
R_m @ BHT	1.18 @ 170 °F	@ °F	@ °F
R_{mf} @ BHT	0.98 @ 170 °F	@ °F	@ °F
R_{mc} @ BHT	1.48 @ 170 °F	@ °F	@ °F
Time Since Circ.	2 HOURS	@ °F	@ °F
Max. Rec. Temp.	170 °F @ TD	°F @	°F @
Equip. / Location	2892 / FARM	/	/

Here

Service Ticket No. 082813 Remarks:

Change in Mud Type or Additional Samples

Date	Sample No.		
Depth—Driller			
Type Fluid in Hole			
Dens. / Visc.	9.2 / 63	/	
pH / Fluid Loss	8.0 / 5.4 ml	/ ml	
Source of Sample	MUD PIT		
R_m @ Meas. Temp.	2.87 @ 70 °F	@ °F	
R_{mf} @ Meas. Temp.	2.5 @ 67 °F	@ °F	
R_{mc} @ Meas. Temp.	4.0 @ 63 °F	@ °F	
Source R_{mf} / R_{mc}	MEAS. / MEAS.	/	
R_m @ BHT	1.18 @ 170 °F	@ °F	
R_{mf} @ BHT	0.98 @ 170 °F	@ °F	
R_{mc} @ BHT	1.48 @ 170 °F	@ °F	

SCALE CHANGES NONE

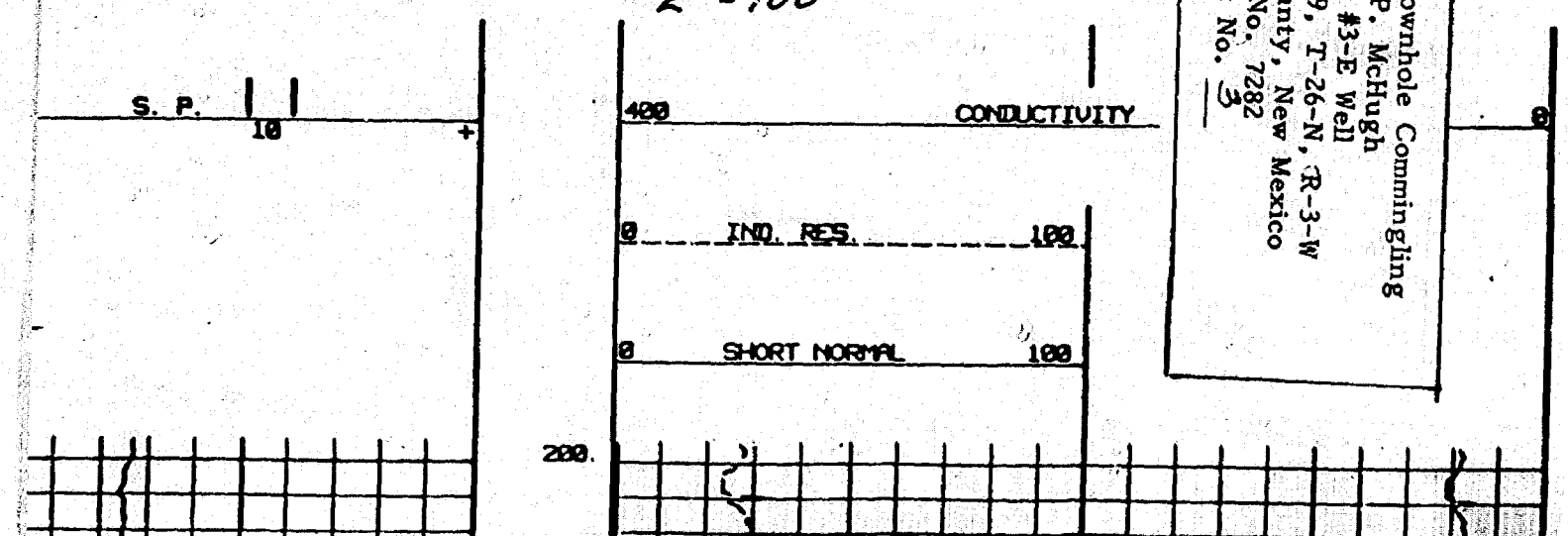
Type Log	Depth	Scale Up Hole	Scale Down Hole
TEL			

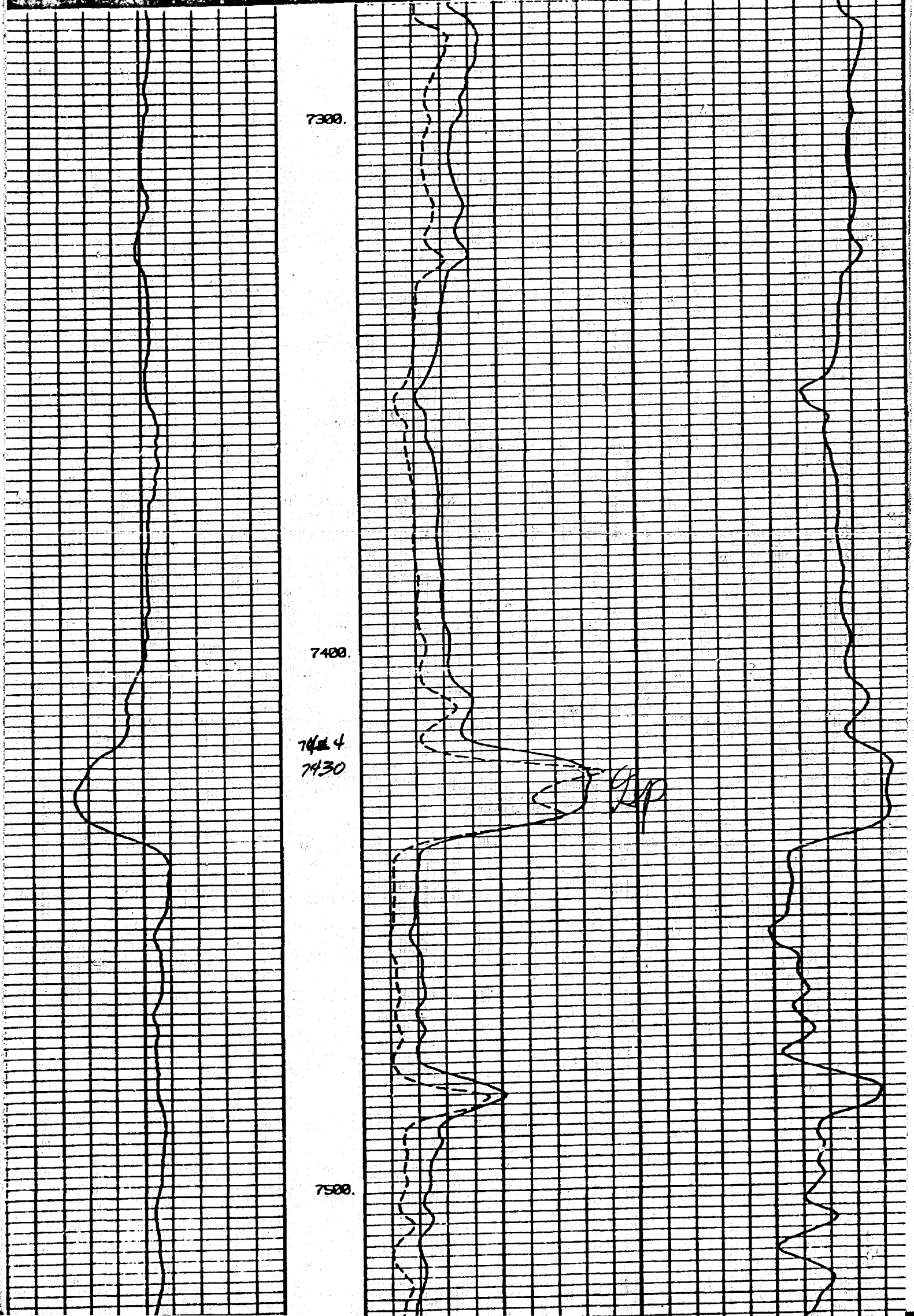
EQUIPMENT DATA

Run No.	Tool Type and No.	Pad Type	Tool Position	Other
ONE	280 # 28609		FREE	

Application for Downhole Commingling
Jerome P. McHugh
Apache #3-E Well
Unit H, Sec. 19, T-26-N, R-3-W
Rio Arriba County, New Mexico
Case No. 7282
Exhibit No. 3

2" = 100'




7300.
7400.
7430
7500.

8000.

8100.

DK

16" NORMAL

Induction Resistivity

IND. CONDUCTIVITY

SP

T.D.

LOGGED

0 SHORT NORMAL 100

0 IND. RES. 100

400 CONDUCTIVITY 0

S. P. 10 +

Dresser Atlas — Induction Electrolog

FILE NO.	COMPANY Jerome P. McHugh
Tops Marked on 5"	WELL Jicarilla A-1
	FIELD Basin Dakota Perfs
	COUNTY Rio Arriba STATE New Mexico

LOCATION: 1190 FNL & 1190 FWL

SEC 18 TWP 26N RGE 3W

Other Services: GDC

Permanent Datum G.L. Elev. 6912

Log Measured from K.B. 13 Ft. Above Permanent Datum

Drilling Measured from K.B.

Elevations: KB 6925 DF GL 6912

Date	6-9-69			
Run No.	ONE			
Depth—Driller	8031			
Depth—Logger	8035			
Bottom Logged Interval	8029			
Top Logged Interval	213			
Casing—Driller	8 5/8 @ 212	@	@	@
Casing—Logger	213			
Bit Size	7 7/8			
Type Fluid in Hole	Chem Gel			
Density and Viscosity	9.3 72			
pH and Fluid Loss	9.0 6.8 cc	cc	cc	cc
Source of Sample	Circ			
Rm @ Meas. Temp.	2.2 @ 82 °F	@ °F	@ °F	@ °F
Rmf @ Meas. Temp.	1.8 @ 78 °F	@ °F	@ °F	@ °F
Rmc @ Meas. Temp.	2.4 @ 78 °F	@ °F	@ °F	@ °F
Source of Rmf and Rmc	Meas Meas			
Rm @ BHT	1.1 @ 165 °F	@ °F	@ °F	@ °F
Time Since Circ.	3 hrs			
Max. Rec. Temp. Deg. F.	165 °F	°F	°F	°F
Equip. No. and Location	HL 1210 Far			
Recorded By	Roth			
Witnessed by	W. M'Cium			

FOLD HERE

THIS HEADING AND LOG CONFORMS TO API RECOMMENDED STANDARD PRACTICE RP-31

REMARKS

Changes in Mud Type or Additional Samples

Date | Sample No.		
Depth-Driller		
Type Fluid in Hole		
Dens. | Visc.		
pH | Fluid Loss	cc	cc
Source of Sample		
Rm @ Meas. Temp.	@ °F	@ °F
Rmf @ Meas. Temp.	@ °F	@ °F
Rmc @ Meas. Temp.	@ °F	@ °F
Source Rmf | Rmc		
Rm @ BHT	@ °F	@ °F
Rmf @ BHT	@ °F	@ °F
Rmc @ BHT	@ °F	@ °F

Scale Changes

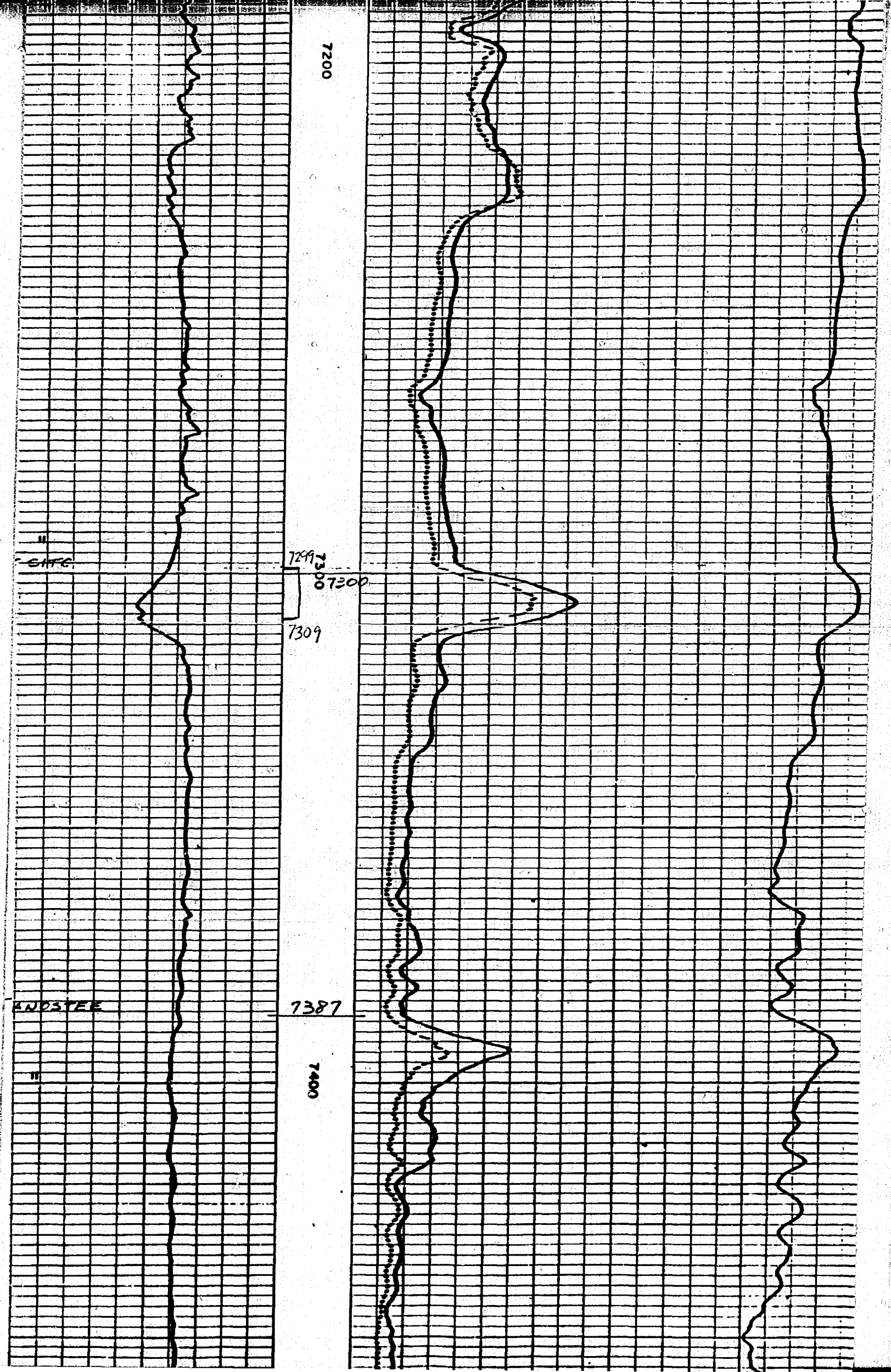
Type Log	Depth	Scale Up Hole	Scale Down Hole

Equipment Data

Run No.	Tool Type	Pad Type	Tool Position	Other
1	805		1½ SO	

Application for Downhole Commingling
Jerome P. McHugh
Apache #3-E Well
Unit H, Sec. 19, T-26-N, R-3-W
Rio Arriba County, New Mexico
Case No. 7282
Exhibit No. 4

SPONTANEOUS POTENTIAL Millivolts	DEPTH	CONDUCTIVITY Millimhos/m
− |←10→| +		INDUCTION CONDUCTIVI[TY] 40" SPACING: 400 — 200; 800 — 600
		RESISTIVITY Ohms m²/m — 16" NORMAL: 0 — 100


7200
7299
7300
7309
7387
7400

7792

7800

DAKOTA

7872

7876

7882

7900

7912

7916

7920

7926

7948

7958

8035

Log T.D.

$\frac{165}{23 \times 1} = 7.17$

$\frac{37}{16 \times .1} = 4.75$

37

36

$\frac{36}{38 \times .1} = 9.47$

32

$\frac{32}{30 \times .1} = 10.6$

42

$\frac{42}{39 \times .1} = 7.7$

Dresser Atlas — Induction Electrolog

Application for Downhole Commingling
Jerome P. McHugh
Apache #3-E Well
Unit H, Sec. 19, T-26-N, R-3-W
Rio Arriba County, New Mexico
Case No. 7282
Exhibit No. 5

FILE NO.

COMPANY Jerome P. McHugh

WELL Jicarilla A 2 Pass

FIELD Basin Dakota

COUNTY Rio Arriba STATE

LOCATION: 1650'FSL & 790'FWL

SEC 18 TWP 26N RGE 3W

Other Services: GDC

Permanent Datum G.L. Elev. 6939

Log Measured from K.B. 13 Ft. Above Permanent Datum

Drilling Measured from K.B.

Elevations: KB 6952 DF GL 6939

Date	5-1-69			
Run No.	ONE			
Depth—Driller	8127			
Depth—Logger	8118			
Bottom Logged Interval	8112			
Top Logged Interval	210			
Casing—Driller	8 5/8 @ 211'	@	@	@
Casing—Logger	210			
Bit Size	7 7/8"			
Type Fluid in Hole	Chem Gel			
Density and Viscosity	9.2 78			
pH and Fluid-Loss	9.0 3.2 cc	cc	cc	cc
Source of Sample	Pit			
Rm @ Meas. Temp.	2.2 @ 70 °F	@ °F	@ °F	@ °F
Rmf @ Meas. Temp.	2.0 @ 70 °F	@ °F	@ °F	@ °F
Rmc @ Meas. Temp.	2.6 @ 70 °F	@ °F	@ °F	@ °F
Source of Rmf and Rmc	Measured			
Rm @ BHT	0.9 @ 167 °F	@ °F	@ °F	@ °F
Time Since Circ.	4 hrs.			
Max. Rec. Temp. Deg. F.	167 °F	°F	°F	°F
Equip. No. and Location	11+1240 Farm.			
Recorded By	Dickerman			
Witnessed By	Jacobs			

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REMARKS

Scale Changes: Scale Up Hole / Scale Down Hole

Equipment Data: Pad Type/Tool Position Eccentered / Other

Changes in Mud Type or Additional Samples

Date	Sample No.	Type Log	Depth	Tool Type	Run No.	Dens.	Visc.	pH	Fluid Loss	Source of Sample	Rm @ Meas. Temp.	Rmf @ Meas. Temp.	Rmc @ Meas. Temp.	Source Rmf / Rmc	Rm @ BHT	Rmf @ BHT	Rmc @ BHT
				Bos	1				cc		@ °F	@ °F	@ °F	—	@ °F	@ °F	@ °F
				SN. 2													

CONDUCTIVITY Millimhos/m

INDUCTION CONDUCTION 40" SPACING

400

RESISTIVITY Ohms m²/m

16" NORMAL

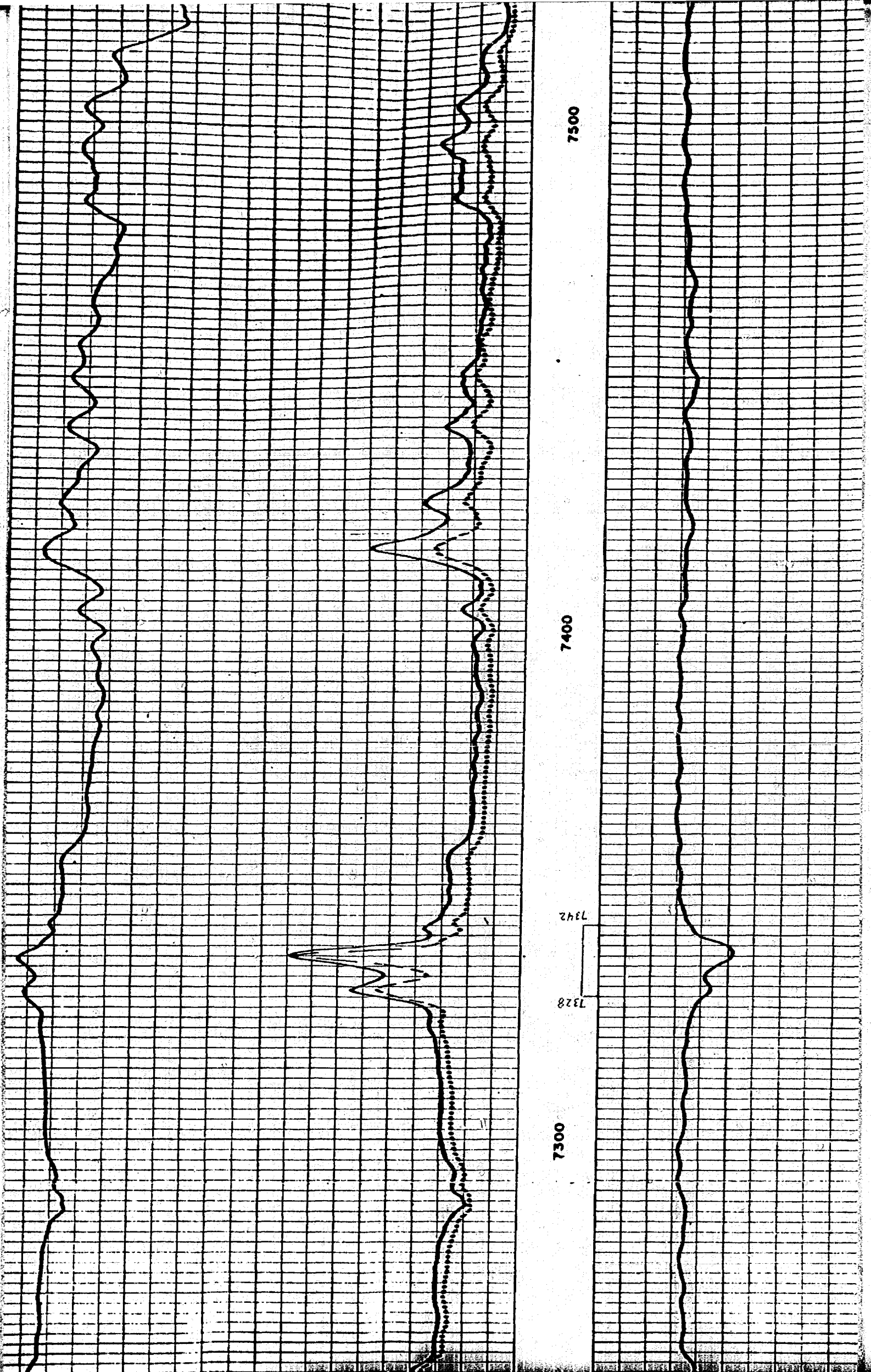
0 100

DEPTH

SPONTANEOUS POTENTIAL Millivolts

10

− +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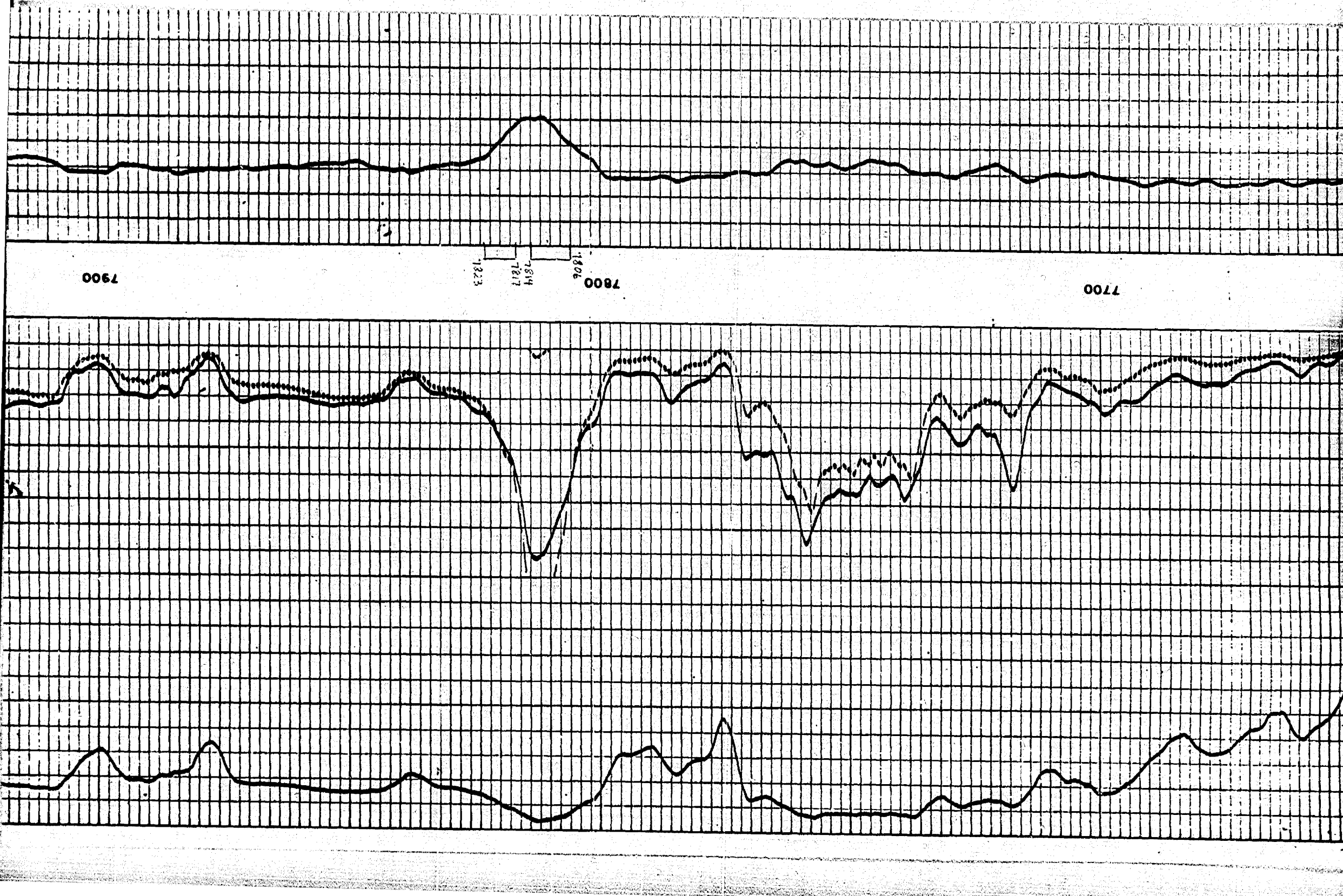
7400
7342
7328
7300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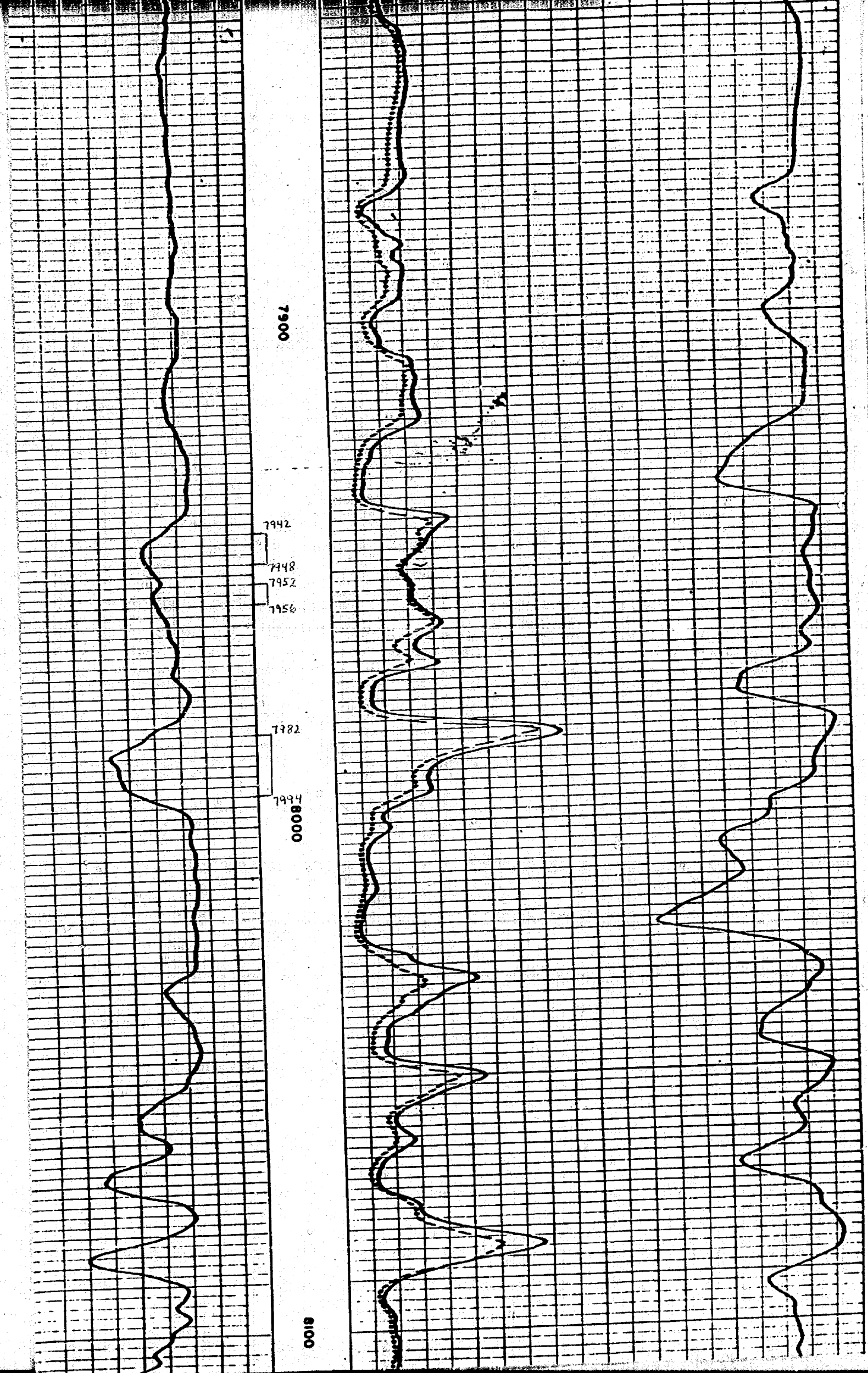

7900
7942
7948
7952
7956
7982
7994
8000
8100

SCHLUMBERGER — INDUCTION-ELECTRICAL LOG

COMPANY JEROME P. McHUGH

TOPS MEASURED ON 5'

WELL JICARILLA A3 Perfs

FIELD BASIN DAKOTA

COUNTY RIO ARRIBA STATE NEW MEXICO

LOCATION 990' FNL, 990' FWL

Sec. 19 Twp. 26N Rge. 3W

COUNTY

FIELD or LOCATION

WELL

COMPANY

Other Services: FDC-GR BHC

Elev.: K.B. 7020 D.F. 7019 G.L. 7007

Permanent Datum: GL Elev. 7007'

Log Measured From KB 13 Ft. Above Perm. Datum

Drilling Measured From KB

Date	5-20-69		
Run No.	ONE		
Depth—Driller	8100		
Depth—Logger	8086		
Btm. Log Interval	8085		
Top Log Interval	212		
Casing—Driller	8 5/8@211	@	@
Casing—Logger	211		
Bit Size	7 7/8		
Type Fluid in Hole	FGM		
Dens.	9.3		
Visc.	70		
pH	9		
Fluid Loss	8.8 ml	ml	ml
Source of Sample	Flowline		
Rm @ Meas. Temp.	3.65@68°F	@ °F	@ °F
Rmf @ Meas. Temp.	2.97@68°F	@ °F	@ °F
Rmc @ Meas. Temp.	- @ - °F	@ °F	@ °F
Source: Rmf Rmc	M -		
Rm @ BHT	1.60 @155°F	@ °F	@ °F
Time Since Circ.	3 HRS		
Max. Rec. Temp.	155 °F	°F	°F
Equip. Location	1070 FARM		

The well name, location and borehole reference data were furnished by the customer.

REMARKS

Changes in Mud Type or Additional Samples

Sample No.			
Type—Driller			
Type Fluid in Hole			
Dens. / Visc.			
pH / Fluid Loss		ml	
Source of Sample			
Rm @ Meas. Temp.	@ °F	@ °F	
Rmf @ Meas. Temp.	@ °F	@ °F	
Rmc @ Meas. Temp.	@ °F	@ °F	
Source: Rmf / Rmc			
Rm @ BHT	1.60 @155°F	@ °F	
Rmf @ BHT	1.30 @155°F	@ °F	
Rmc @ BHT	@ °F	@ °F	

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down Hole

Equipment Data

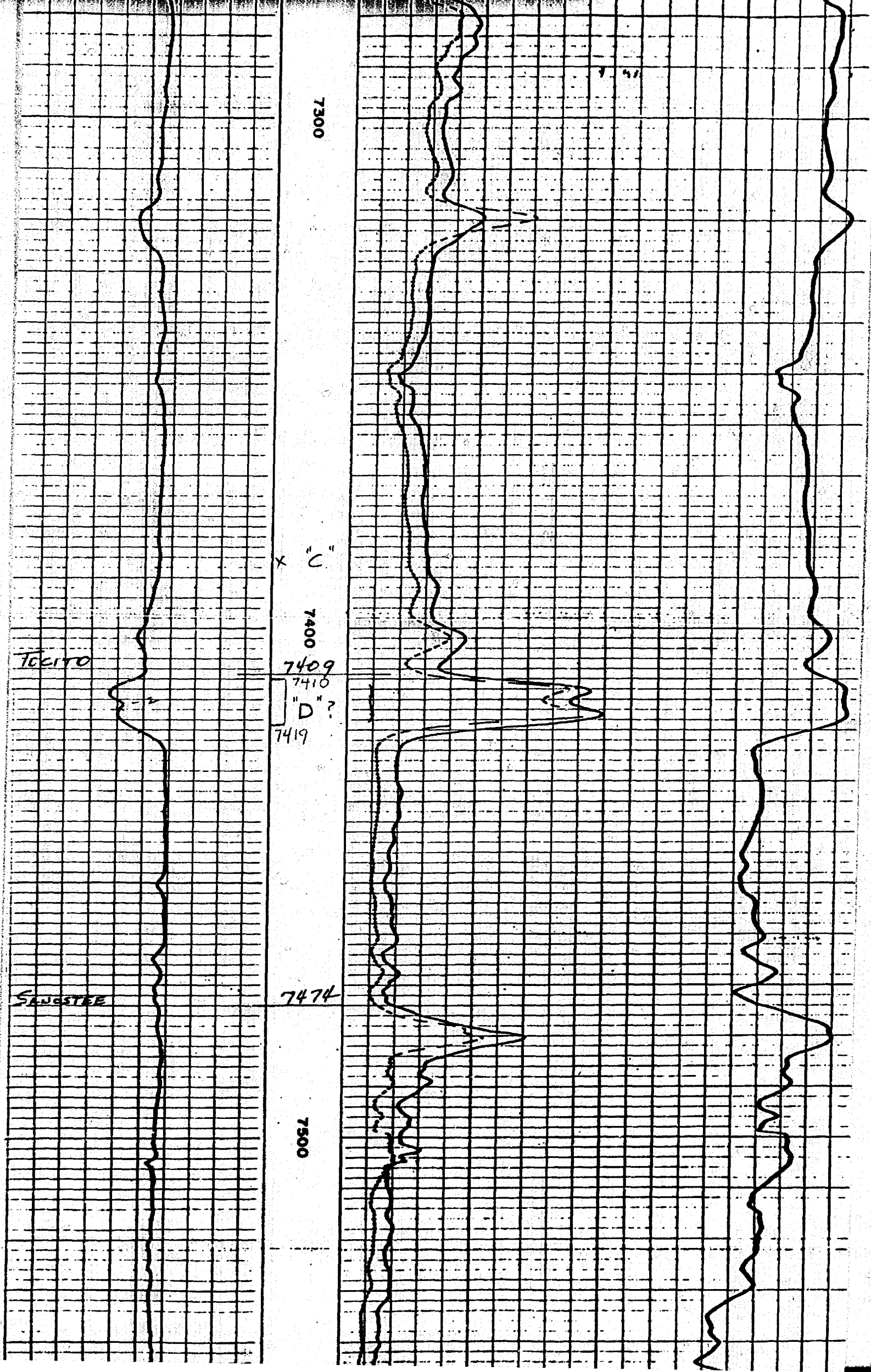
Run No.	Tool Type	Tool Position	Other

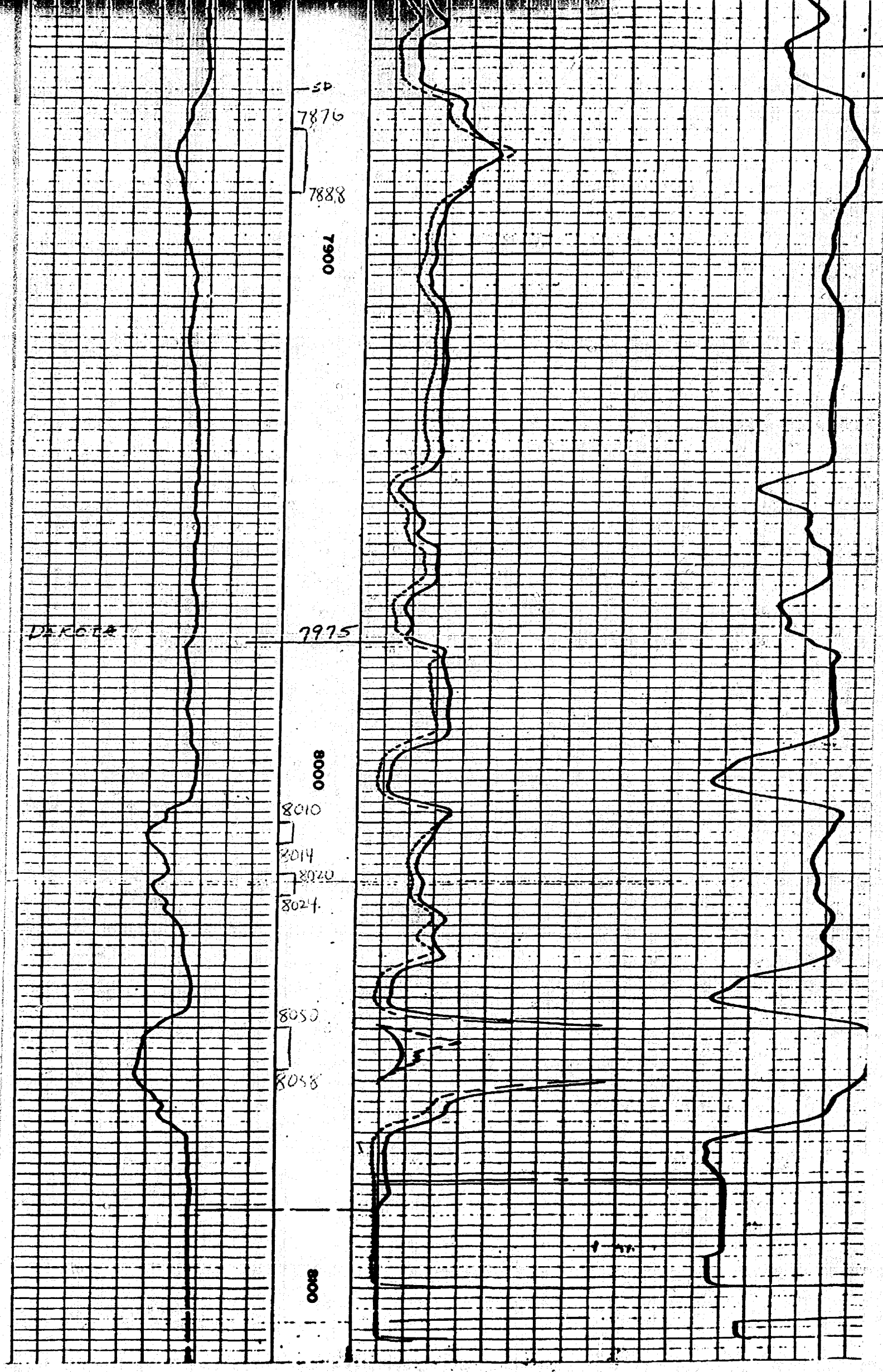
Run No.: ONE
C.D.: USED
S.O.: 1.5 INCHES
Rm. PANEL No.: IRP-H-422
Rm: CART. No.: IRC-F-390
SONDE No.: IRS-M-737
IAP No.: MIAP-B-238
S.B.R.: 4

Check one, filling in blanks where applicable:
- [x] Surface determined sonde errors used for 6FF
- [ ] 6FF40 sonde error corrected for borehole signal at Rm =
- [ ] 6FF40 zero set in hole at depth of

Application for Downhole Commingling
Jerome P. McHugh
Apache #3-E Well
Unit H, Sec. 19, T-26-N, R-3-W
Rio Arriba County, New Mexico
Case No. 7282
Exhibit No. 6

SPONTANEOUS-POTENTIAL millivolts	DEPTHS	CONDUCTIVITY millimhos/m = 1000 / ohms. m²/m
10 — +		6FF40 INDUCTION 400 200 0 600 400


7300
"C"
7400
7409
7410
"D"?
7419
TOCITO
SANDSTEE
7474
7500


SD
7876
7888
7900
DAKOTA
7975
8000
8010
8014
8020
8024
8050
8058
8100

COMPANY J.P. McHugh

WELL Jicarilla "A" #4

FIELD Basin Dakota

County Rio Arriba State N. Mex

Welex

INDUCTION • ELECTRIC LOG

COMPANY Jerome P. McHugh

Perfs

WELL Jicarilla A #4

FIELD Basin Dakota

COUNTY Rio Arriba STATE New Mexico

Location 1650' FSL & 990' FWL

Other Services: Gamma Density Caliper

Sec. 19 Twp 26-N Rge 3-W

Permanent Datum Ground Level Elev. 7192'

Log Measured From Kelly Bushing 13 Ft. Above Perm. Datum

Drilling Measured From Kelly Bushing

Elev.: K.B. 7205, D.F. 7204, G.L. 7192

Date	8-5-69		
Run No.	ONE		
Depth—Driller	8220'		
Depth—Welex	8220		
Btm. Log Inter.	8264		
Top Log Inter.	surf		
Casing—Driller	8 5/8 @ 240'	@	@
Casing—Welex			
Bit Size	7 7/8		
Type Fluid in Hole	Mud-Gel		
Dens. | Visc.	9.6 | 44	|	|
pH | Fluid Loss	— | — ml	| ml	| ml
Source of Sample	Pit		
R_m @ Meas. Temp.	2.70 @ 82 °F	@ °F	@ °F
R_{mf} @ Meas. Temp.	2.00 @ 84 °F	@ °F	@ °F
R_{mc} @ Meas. Temp.	2.74 @ 86 °F	@ °F	@ °F
Source R_{mf} | R_{mc}	Press | Press	|	|
R_m @ BHT	1.55 @ 158 °F	@ °F	@ °F
Time Since Circ.	3 hours		
Max. Rec. Temp.	158 °F @ BH	°F @	°F @
Equip. | Location	7757 | Farm	|	|
Recorded By	[illegible]		

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Service Ticket No. W-32854 Remarks:

Change in Mud Type or Additional Samples		
Date | Sample No.	|	|
Depth—Driller		
Type Fluid in Hole		
Dens. | Visc.	|	|
ph | Fluid Loss	| ml	|
Source of Sample		
R_m @ Meas. Temp.	2.70 @ 82 °F	@ °F
R_{mf} @ Meas. Temp.	2.00 @ 84 °F	@ °F
R_{mc} @ Meas. Temp.	2.74 @ 86 °F	@ °F
Source: R_{mf} | R_{mc}	|	|
R_m @ BHT	1.55 @ 158 °F	@ °F
R_{mf} BHT	1.18 @ 155 °F	@ °F
R_{mc} BHT	1.60 @ 158 °F	@ °F

SCALE CHANGES

Type Log	Depth	Scale Up Hole	Scale Down Hole

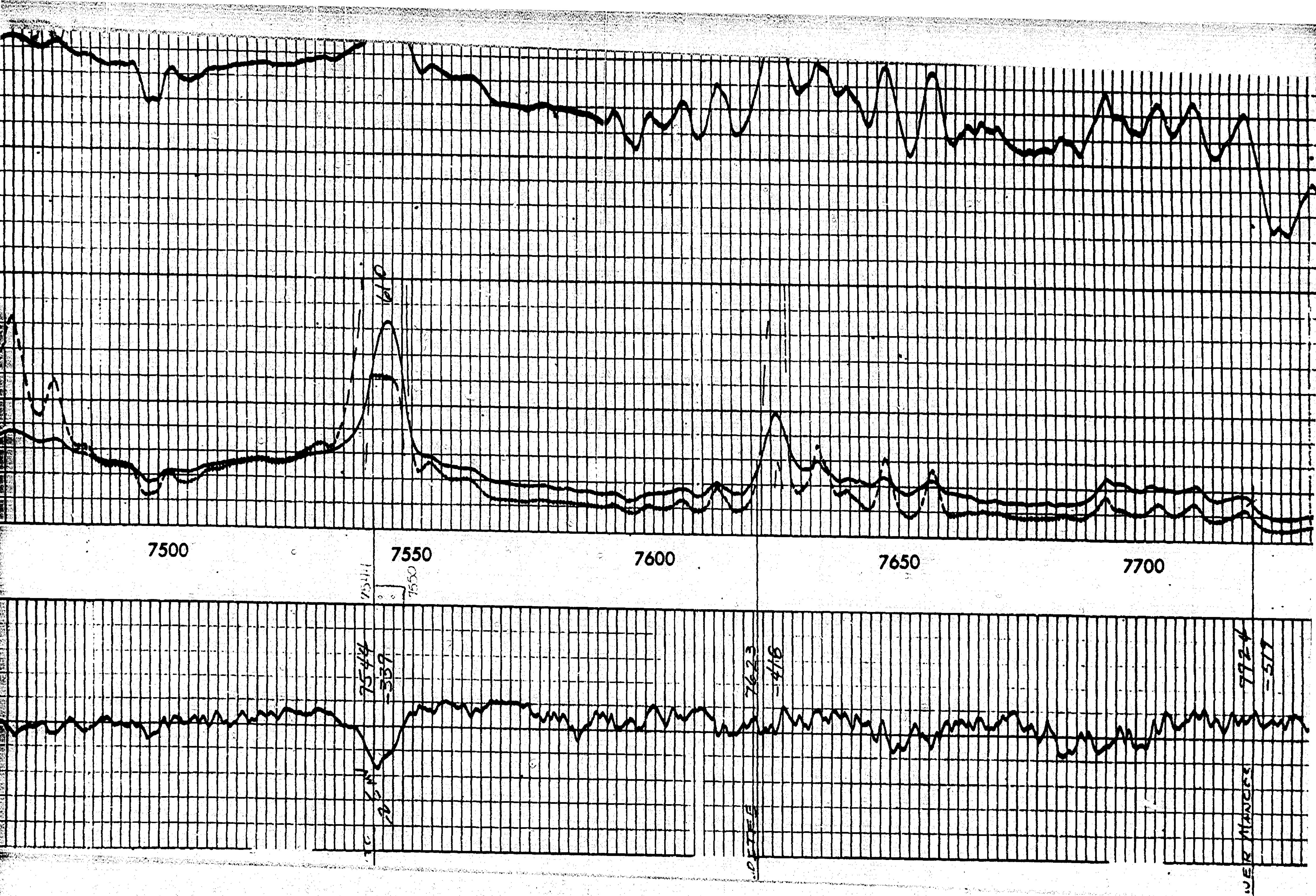
EQUIPMENT DATA

Run No.	Tool Type and No.	Pad Type	Tool Position	Other
ONE	Mod 42-13939		Free	

Application for Downhole Commingling
Jerome P. McHugh
Apache #3-E Well
Unit H, Sec. 19, T-26-N, R-3-W
Rio Arriba County, New Mexico
Case No. 7282
Exhibit No. 7

2" = 100'

POTENTIAL MILLIVOLTS	RESISTIVITY OHMS M²/M	CONDU… M
— 10 +	18" Normal	
	0 100	250 0
Rmf 1.18 at 158 °F.	0 1000	500 250
	Induction	RESISTIVITY OHMS M²/M
	0 100	



7500
7550
7600
7650
7700
610
7544
-337
7623
-418
7724
-517

8250 8200 8150 8100 8050 8000

dugan production corp.

Application for Downhole Commingling
Jerome P. McHugh
Apache #3-E Well
Unit H, Sec. 19, T-26-N, R-3-W
Rio Arriba County, New Mexico
Case No. 7282
Exhibit No. 8

J. P. MC HUGH
Apache #3E
1710' FNL - 1120' FEL
Sec 19 T26N R3W
Rio Arriba County, NM

MORNING REPORT

4-24-81 M.I. & R.U. Four Corners rig #10. Spudded 12-1/4" hole at 12:00 noon, 4-23-81. Drilled to 260'. Ran 6 jts. 8-5/8" O.D., 24#, K 55, 8 Rd. St & c csg. T.E. 240.86' set at 253' RKB. Cemented w/ 170 sks class "B" plus 2% CA Cl_2. P.O.B. @ 5:15 PM 4-23-81. Cemented. Circulated. Nippled up B.O.P. Press tested csg. and B.O.P. w/ 500 psi. Held O.K. Present operation drilling at 680' w/ wtr. 1/2° at 260'.

5 - M.I. & R.U.
1 - Drill Rat & Mouse holes
1/4 - Circulate
2-1/2 - Drilling
1/2 - Run csg.
1-1/4 - Rig up cementer and cement
12 - W.O.C.
1 - Drill cement and Press test

4-25-81 2718' Drlg. wt 8.8 Vis. 29 W.L. 8.0 . 3/4° at 1034', 1-1/4° at 1440', 1/2° at 2019', 1/2° at 2431'.

3 - Trip
19-1/2 - Drilling
1/2 - Rig service
1/2 - Survey
1/2 - Wash to btm

4-26-81 3529' Drlg. w.t. 8.8 Vis. 34 W.L. 8.0
3/4° at 2997', 1-1/4° at 3072, 1° at 3508'

2-1/2 - Trip
19-1/4 - Drilling
3/4 - Rig Service
1/2 - Survey
1 - Wash to btm.

4-27-81 4050' Drlg. Wt. 8.9 Vis. 34 W.L. 8.0
3/4° at 4030'

2-1/4 - Trip
16-3/4 - Drilling
3/4 - Rig Service
1/4 - Survey
2-1/2 - Lost circulation at 3780'
1/2 - Wash to btm

4-28-81 4500' Drlg. Wt. 8.9 Vis. 40 W.L. 8 12% LCN

20 - Drilling
3/4 - Rig Service
3-1/4 - Lost circulation at 4260'

4-29-81 4890' Drilling. Wt. 9.0 Vis 40 W.L. 8.5 Tr. LCM
1° at 4501'

23 - Drilling
3/4 - Rig Service
1/4 - Survey

4-30-81 5205' Drlg. Wt. 9.0 Vis 40 W.L. 7.5
1-1/4° at 4896'

4-3/4 hrs - Trip
17-1/2 hrs - Drilling
3/4 hr - Rig Service
3/4 hr - Cut drilling line
1/4 hr - Wash to btm

5-1-81 5675' - Drilling Wt. 9.0 Vis 40 W.L. 6.0
1° at 5399'

23 hrs - drilling
3/4 hr - rig service
1/4 hr - survey

Lost 100 bbls mud at 5337'.

5-2-81 5878' - Mixing mud and L.C.M. Wt. 8.6 Vis 45 W.L. 7.2
25% L.C.M.

10-1/2 hrs - drilling
1/4 hr - rig service
13-1/4 hrs - lost circ. (lost 1000 bbls.)

5-3-81 6019' - Lost circulation Wt. 8.2 Vis 45 W.L. 7.2
30% L.C.M. 1¼° at 5900'; 1¼° at 6019'

6 hrs - drilling 1/4 hr survey
1/2 hr - rig service
12-1/4 hrs - lost circ. (lost 1000 bbls.)

5-4-81 6296' - Drilling Wt. 8.9 Vis 47 W.L. 7.0 30% L.C.M.

16 hrs - drilling
3/4 hr - rig service
7-1/4 hrs - lost. circ.

5-5-81 6697' Wt. 8.9 Vis 45 W.L. 6.8 30% L.C.M.
1° at 6544'

23 hrs - drilling
3/4 hr - rig service
1/4 hr - survey

5-6-81 7070' - Drilling Wt. 9.0 Vis 43 W.L. 6.0 30% L.C.M.

23-1/4 hrs - drilling
3/4 hr - rig service

5-7-81 7420' - Trip Wt. 9.0 Vis 42 W.L. 7.0 12% L.C.M.

3/4 hr - trip
22-1/2 hrs - drilling
3/4 hr - rig service

5-8-81 7637' - drilling Wt. 9.0 Vis 44 W.L. 4.6 20% LCM

7-1/4 hrs - trip
13 hrs - drilling
1/4 hr - rig service
3/4 hr - cut drilling line
2-3/4 hrs - lost circ.

5-9-81 7818' - Trip 1½° at 7818' Wt. 9.0 Vis 44 W.L. 6.4
20% LCM

6-1/2 hrs - trip
16-1/4 hrs - drilling
3/4 hr - rig service
1/2 hr - fill pipe and circ. at 5330'

5-10-81 7995' - Drilling Wt. 9.0 Vis 44 W.L. 8.0 10% LCM

1-1/4 hrs - trip
20-1/4 hrs - drilling
3/4 hr - rig service
3/4 hr - repair air line
1 hr - wash to btm.

5-11-81 8185' - Drilling Wt. 9.1 Vis 63 W.L. 7.4 10% LCM

21 hrs - drilling
2-1/4 hrs - reaming and drilling thru fracture
3/4 hr - rig service

5-12-81 8197' - Circ.

8 hrs - trips
1 hr - drilling
1/4 hr - rig service
4-3/4 hrs - circ.
9-1/2 hrs - logging
1/2 hr - wash to btm.

Ran IES & CDL logs by Welex. Trip in hole and circ. Prep to lay down drill pipe.

5-13-81 Rigging down rotary tools

1-1/4 hrs - circ.
5-1/4 hrs - lay down D.P.
1/2 hr - rig up csg. crew
5-1/4 hrs - run csg.
3/4 hr - rig up cementers & circ.
1 hr - cement first stage

P.O.B. at 8:00 p.m. Opened stage tool and circ. 3 hrs.
Cemented 2nd stage 1 hr. P.O.B. at 12:00 midnight.
Circ. 2 hrs. Cement 3rd stage 1 hr. P.O.B. at 3:00 a.m.
Set slips & cut off csg.
2 hrs - nipple down & prep to move.

Ran 35 jts. 4½" OD, 11.6# K-55, 8 Rd, ST&C csg. and 166 jts. 4½" OD, 10.5#, 8 Rd, ST&C csg. T.E. 8208.73' set at 8197' RKB. Cemented first stage w/ 10 bbls mud flush followed by 200 sx class "B" 8% gel followed by 150 sx class "B" w/ 7½# salt per sk. (Total slurry 565.5 cu.ft.) Good mud returns while cementing. Reciprocated csg. OK while cementing. Maximum cementing pressure 600 psi. Bumped plug w/ 1200 psi. Float held OK. POB at 8:00 p.m. 5-12-81. Opened stage tool at 6100'. Circulated three hrs w/ rig pump. Cemented second stage w/ 10 bbls. mud flush followed by 250 sx 65-35 plus 12% gel & ¼# flocele per sk. followed by 50 sx class "B" neat w/ ¼# flocele per sk. (Total cement slurry 714 cu.ft.). Good circ. throughout job. (Cont.)

5-13-81 (cont.) Closed stage tool w/ 2000 psi. Held OK. P.O.B. at 12:00 midnight. Opened stage tool at 3816'. Circ. 2 hrs w/ rig pump. Cemented 3rd stage w/ 10 bbls mud flush followed by 400 sx 65-35 plus 12% gel # ¼# flocele per sk followed by 50 sx class "B" w/ ¼# flocele per sk. (Total cement slurry 1107 cu.ft.) Good mud returns throughtout job. Maximum cementing pressure 900 psi. Closed stage tool w/ 2500 psi. Held OK. Estimated cement top 600'. Job complete at 3:00 a.m. 5-13-81. Set 4½" csg. slips. Cut off csg. and released rig at 5:00 a.m. 5-13-81.

SHUT-IN PRESSURES

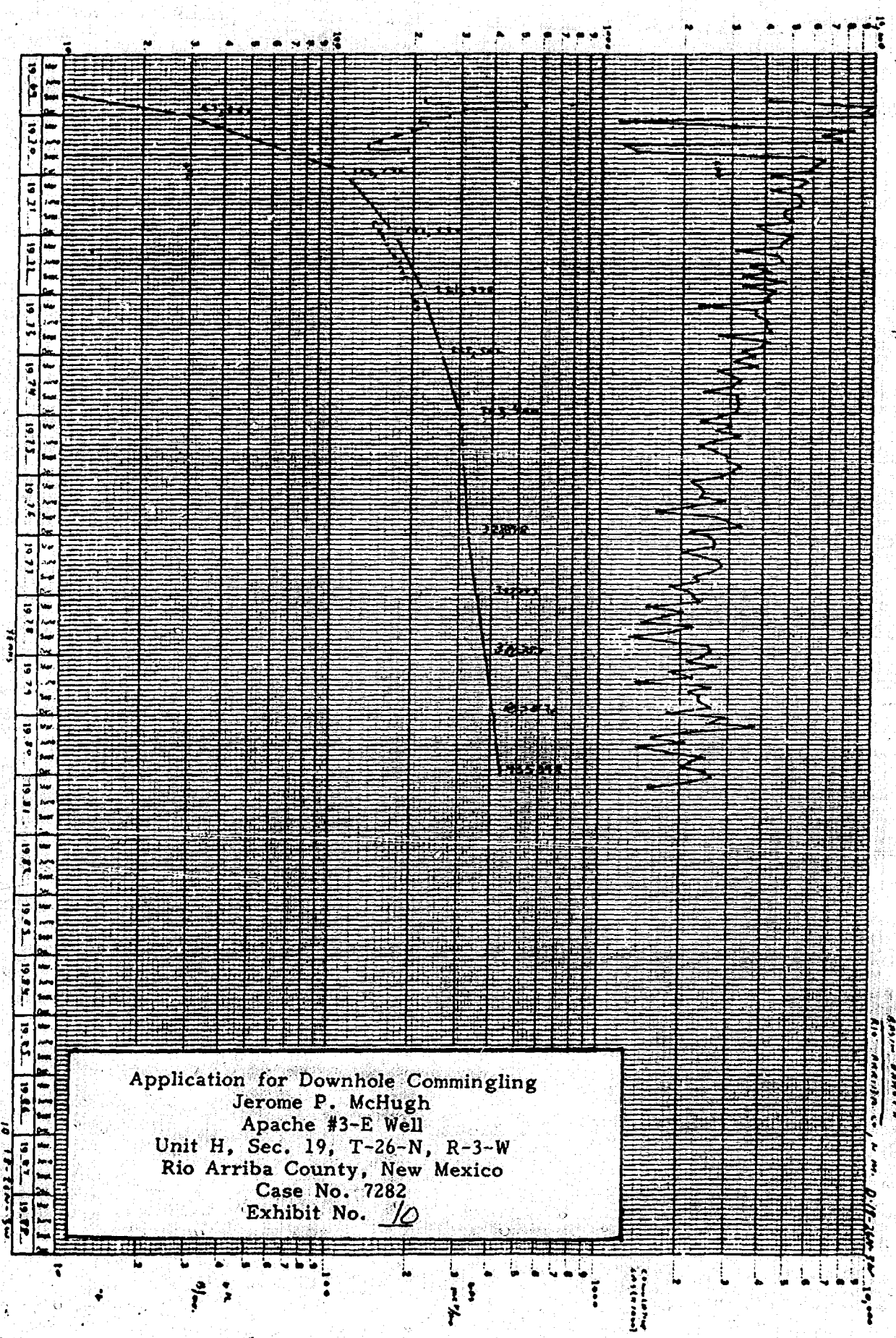
WELL	ZONE	INITIAL TEST	DATE	CURRENT TEST	DATE
Apache #1	Upper completion	1669 psig	9-2-69	300 psig	7-20-80
	Lower completion	2309 psig	9-2-69	510 psig	7-20-80
Apache #2	Upper completion	1514 psig	1-25-71	0	7-20-80
	Lower completion	1835 psig	1-25-71	510 psig	7-20-80
Apache #3	Upper completion	1357 psig	9-13-70	300 psig	7-2-80
	Lower completion	1496 psig	9-13-70	0	7-2-80
Apache #4	Upper completion	1330 psig	10-8-69	605 psig	5-27-78
	Lower completion	1345 psig	10-8-69	605 psig	2-20-78

dual completions
make about 10 bbls/million
50% gas } to each zone
50% oil

Application for Downhole Commingling
Jerome P. McHugh
Apache #3-E Well
Unit H, Sec. 19, T-26-N, R-3-W
Rio Arriba County, New Mexico
Case No. 7282
Exhibit No. 9

K-E 20 YEARS BY MONTHS X 3 LOG CYCLES

47 6840

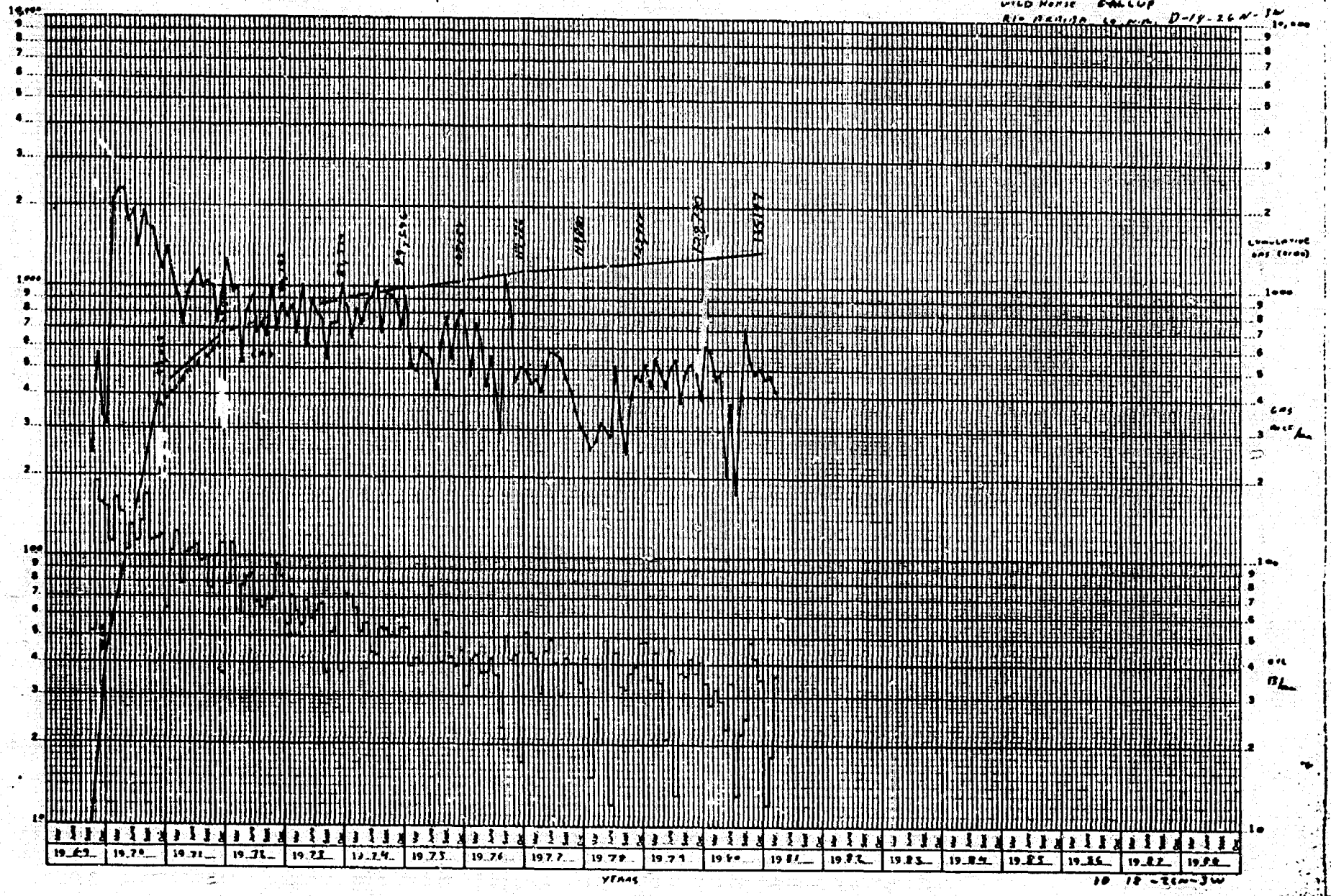


Application for Downhole Commingling
Jerome P. McHugh
Apache #3-E Well
Unit H, Sec. 19, T-26-N, R-3-W
Rio Arriba County, New Mexico
Case No. 7282
Exhibit No. 10

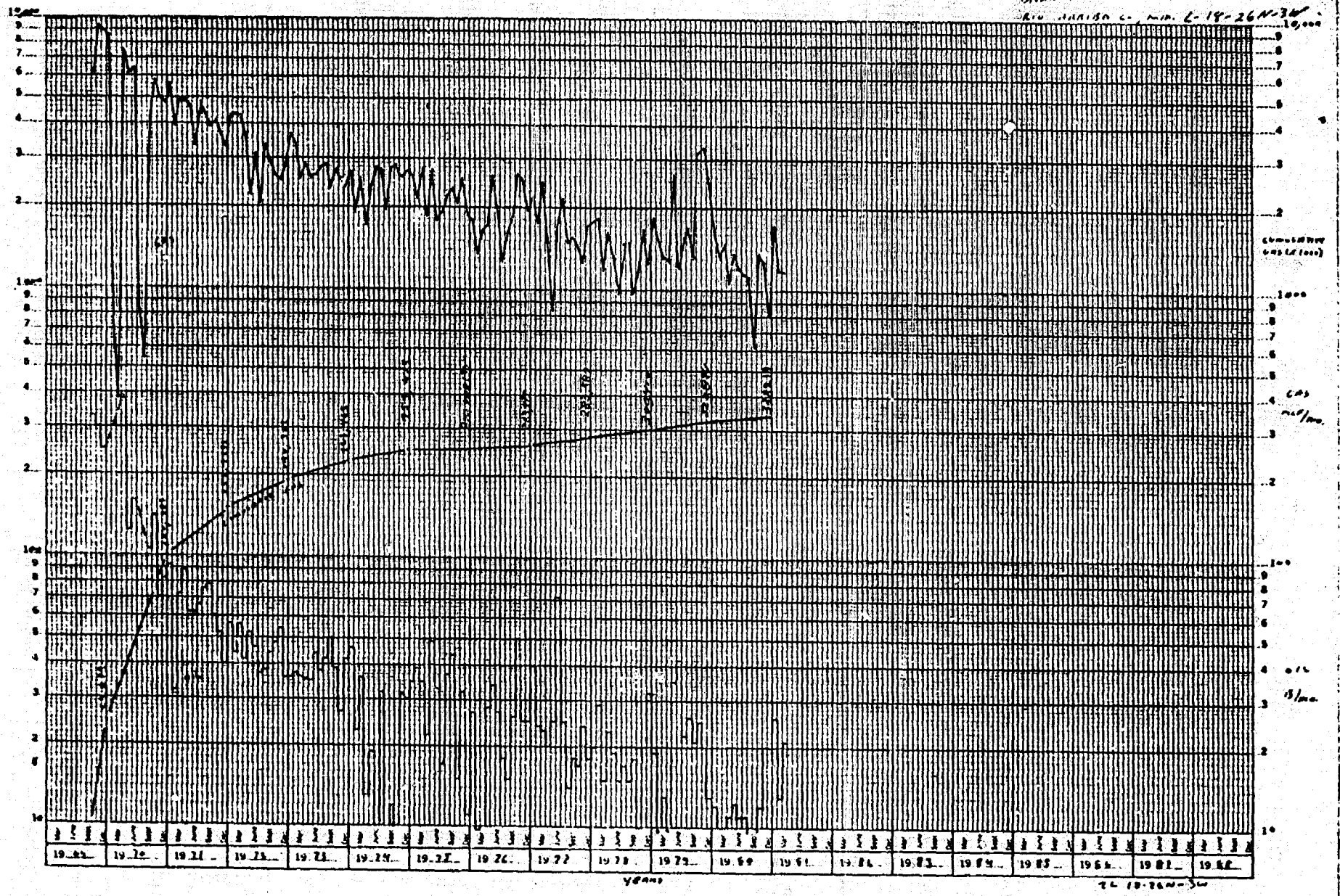
#1 PR

#1 Jsp

JEROME P. McHUGH
APACHE WELL No. 1
WILD HORSE GALLUP
RIO ARRIBA CO., N.M. D-19-26N-5W



~ DK

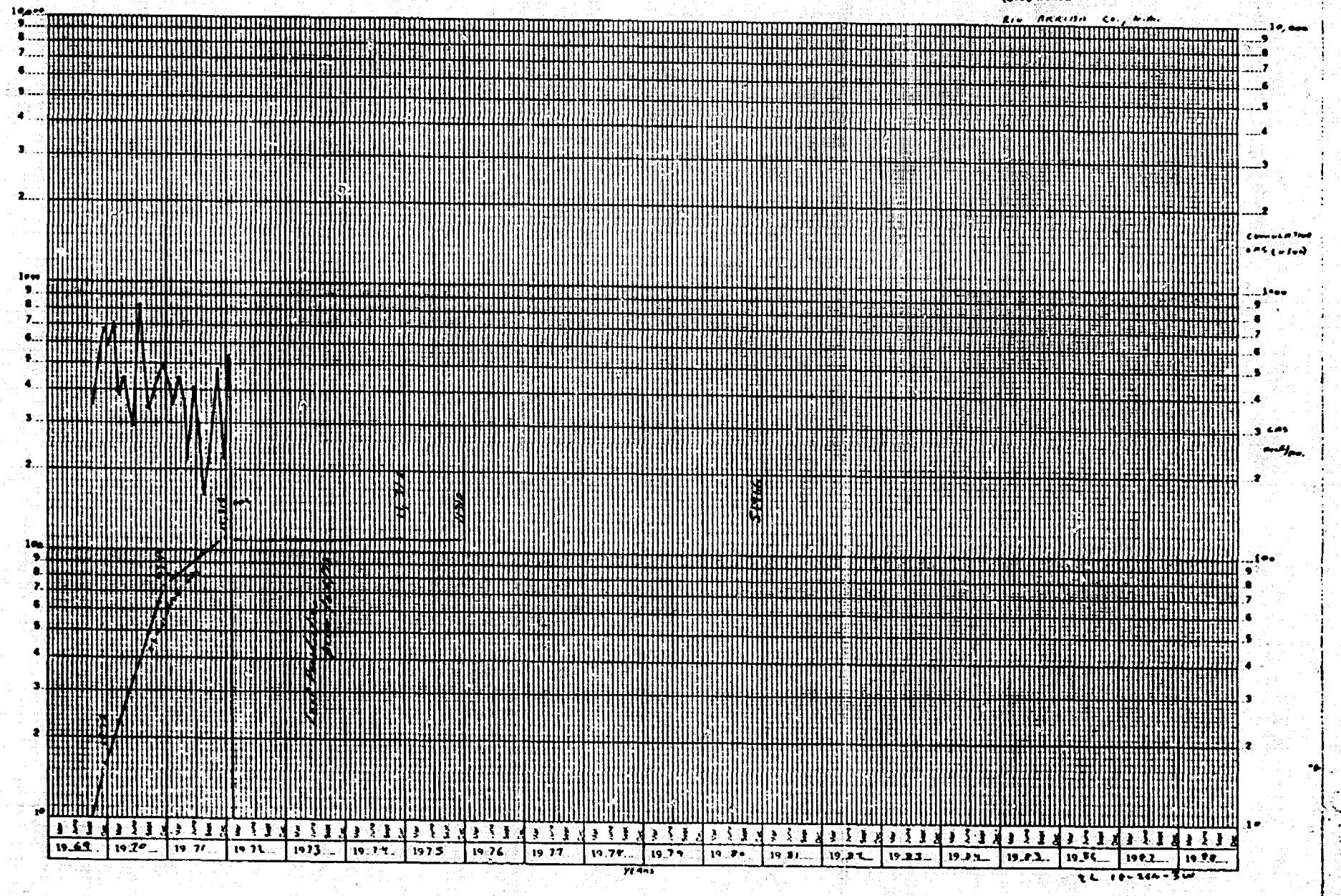


47 6840

K-E 10 YEARS BY MONTHS X 2 LOG CYCLES

#2 Dp

JEROME P. MCHUGH
APACHE WELL NO. 2
WILDCAT GALLUP
RIO ARRIBA CO., N.M.



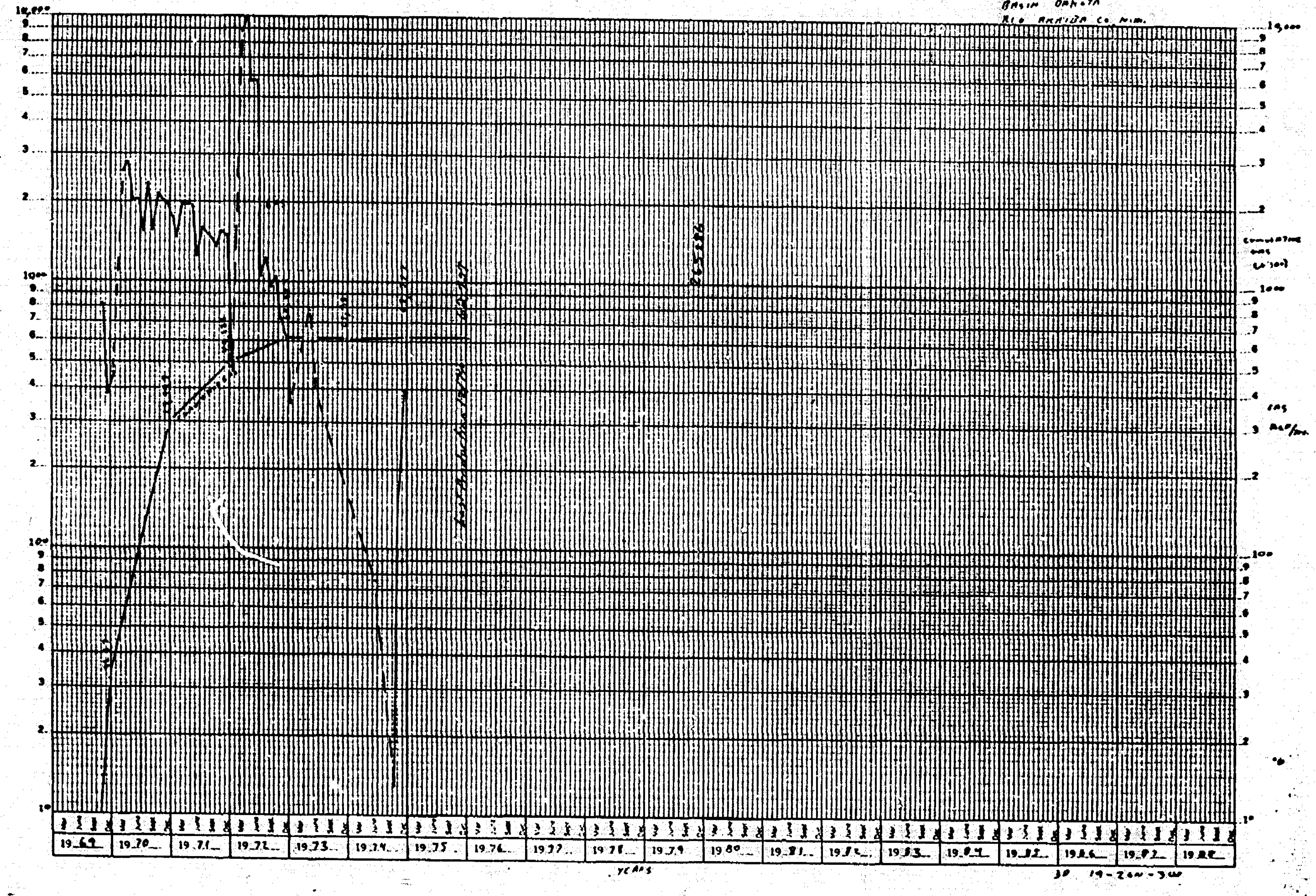
47 6840

K+E 20 YEARS BY MONTHS X 3 LOG CYCLES KEUFFEL & ESSER CO.

47 6840

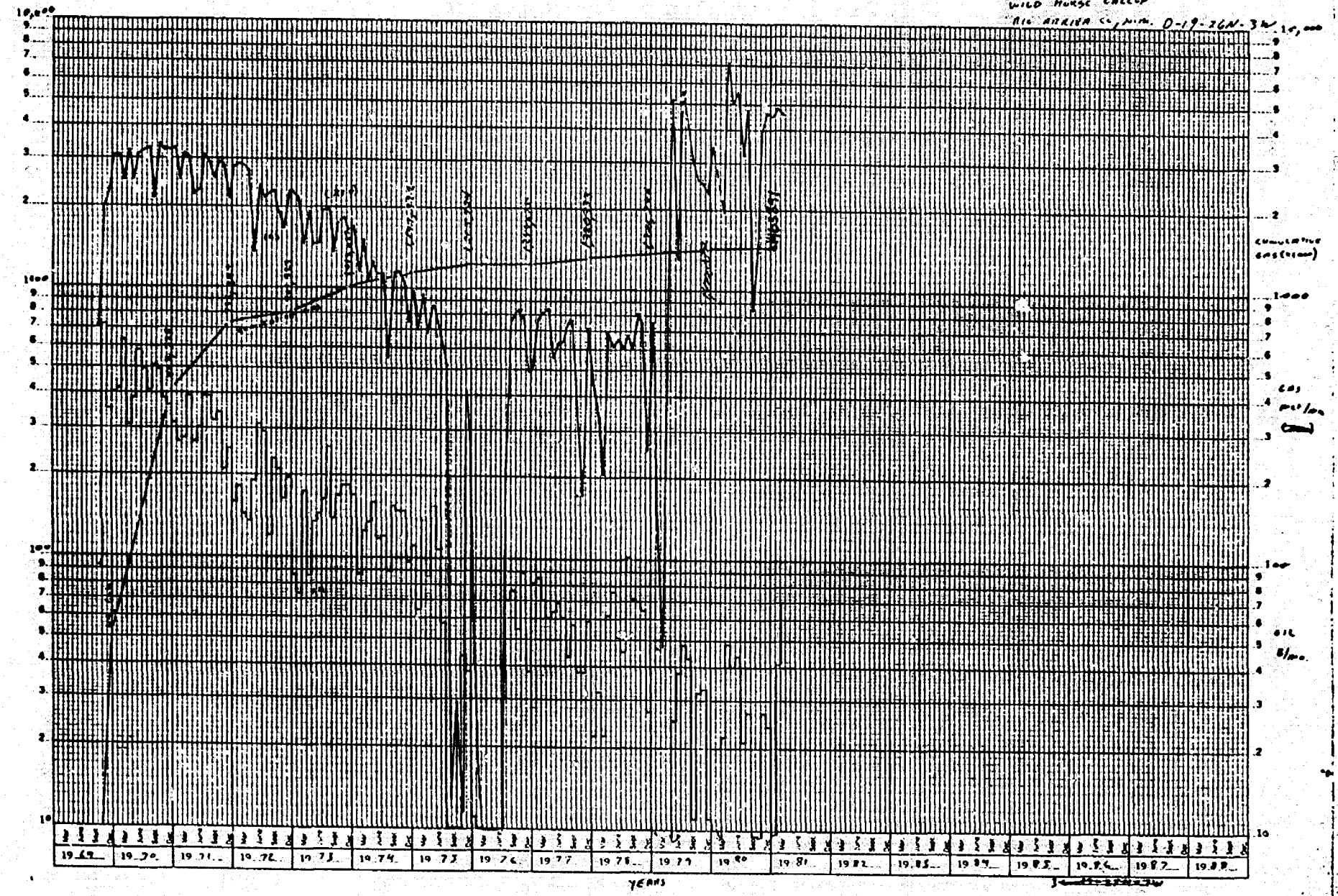
#3 D/C

Jerome P. McHugh
Apache Well No 5
Basin Dakota
Rio Arriba Co. N.M.



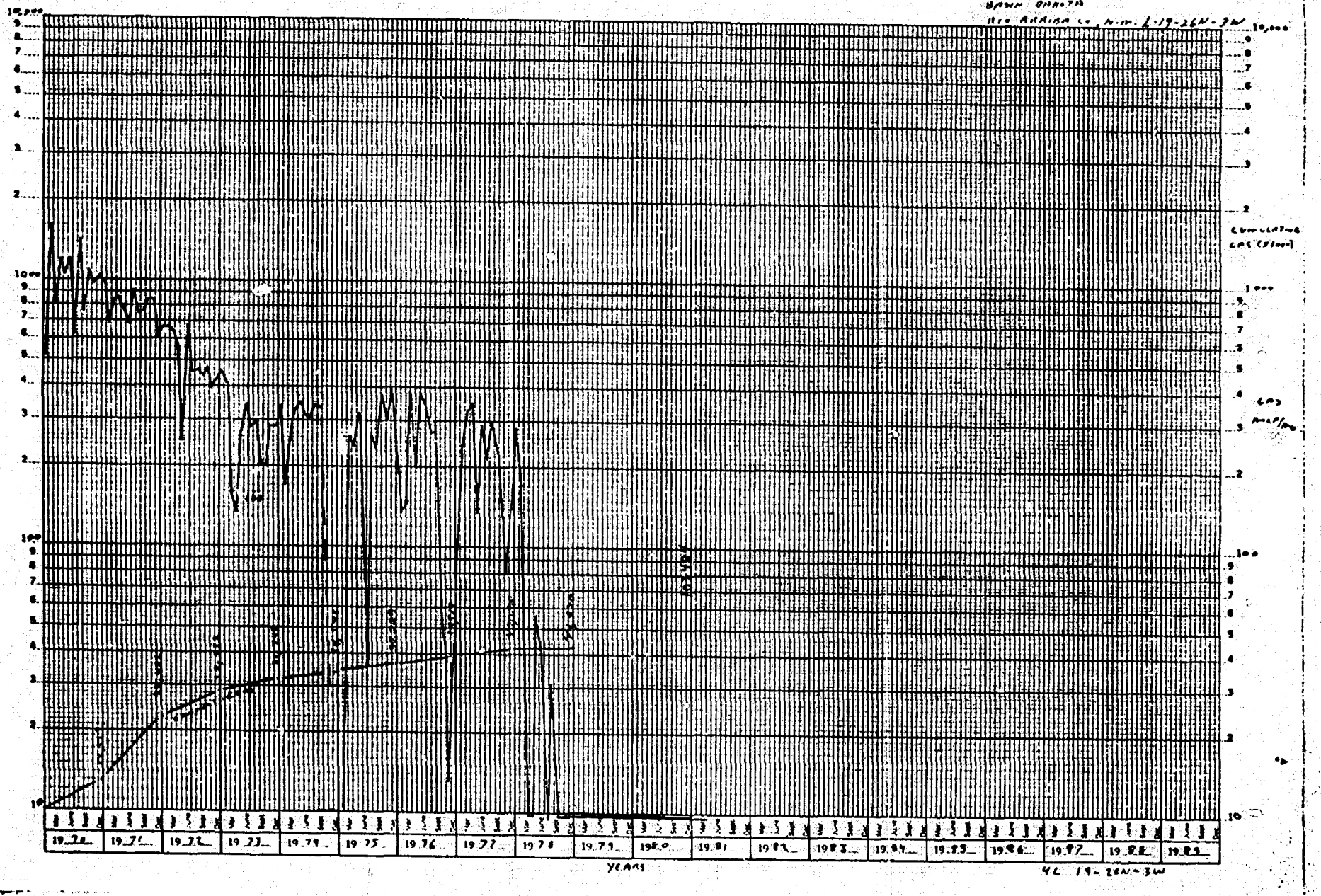
#3 Dsp

JEROME P. McHUGH
APACHE WELL No 3
WILD HORSE CALLUP
Rio ARRIBA Co, N.M. D-19-26N-3W



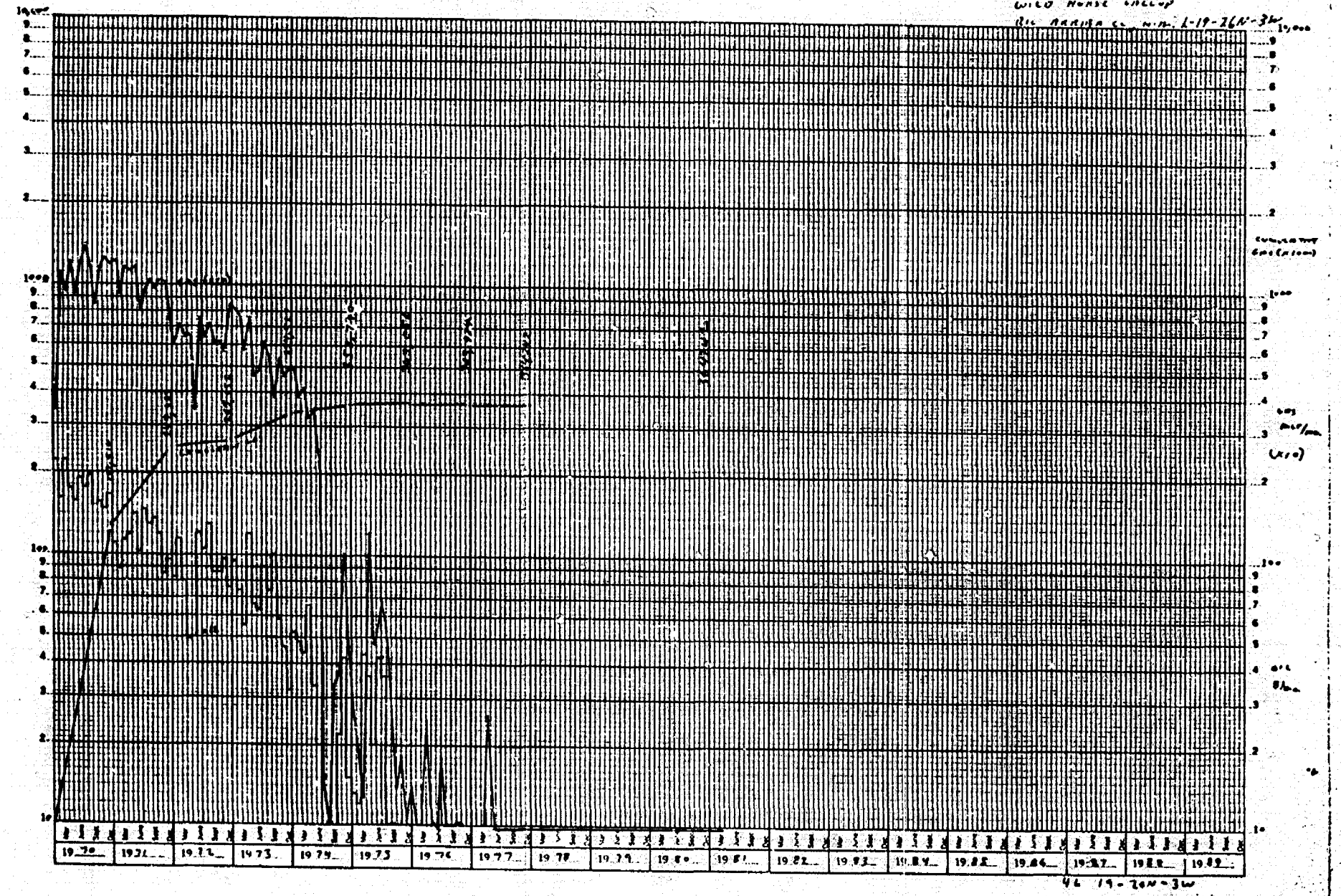
#4 DK

JEROME P. McHUGH
PIPELINE WELL NO. 4
BASIN DAKOTA
RIO ARRIBA CO., N.M. L-19-26N-3W



#4 Isp

Jerome P. McHugh
Apache Well No. 4
Wild Horse Wellup
Rio Arriba Co., N.M. L-19-26N-3W



4L 19-26N-3W

CASE 7279: Application of BCO, Inc. for downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Basin-Dakota and Lybrook-Gallup production in the wellbores of the following wells located in Township 23 North, Range 7 West: Dunn Well No. 3 located in Unit I of Section 3 and State H Wells Nos. 3 and 4, located in Units M and D, respectively, of Section 2.

CASE 7280: Application of Northwest Pipeline Corporation for a dual completion and downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks authority to dually complete its Rosa Unit Well No. 77 located in Unit L of Section 33, Township 31 North, Range 5 West, to produce gas from the Mesaverde formation and commingled Gallup and Dakota production through separate strings of tubing.

CASE 7281: Application of Dugan Production Corporation for downhole commingling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of undesignated Gallup and Basin-Dakota production in the wellbore of its Windfall Well No. 10 located in Unit F of Section 31, Township 26 North, Range 11 West.

CASE 7282: Application of Jerome P. McHugh for downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Wildhorse-Gallup and Basin-Dakota production in the wellbore of his Apache Well No. 3-E located in Unit H of Section 19, Township 26 North, Range 3 West.

CASE 7254: (Continued from May 20, 1981, Examiner Hearing)

Application of Mesa Petroleum Company for compulsory pooling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Mesaverde formation underlying the W/2 of Section 15, Township 30 North, Range 11 West, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7270: (Continued from June 3, 1981, Examiner Hearing)

Application of Southland Royalty Company for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Wolfcamp and Pennsylvanian formations underlying the N/2 of Section 21, Township 19 South, Range 27 East, to be dedicated to its Pecos River Federal 21-A Com Well No. 1 drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7250: (Continued from June 3, 1981, Examiner Hearing)

Application of Southland Royalty Company for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the N/2 of Section 22, Township 18 South, Range 29 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

Dockets Nos. 20-81 and 21-81 are tentatively set for July 2 and 15, 1981. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - JUNE 17, 1981

9 A.M. - OIL CONSERVATION DIVISION CONFERENCE ROOM,
STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

The following cases will be heard before Daniel S. Nutter, Examiner, or Richard L. Stamets, Alternate Examiner:

ALLOWABLE: (1) Consideration of the allowable production of gas for July, 1981, from fifteen prorated pools in Lea, Eddy, and Chaves Counties, New Mexico.

(2) Consideration of the allowable production of gas for July, 1981, from four prorated pools in San Juan, Rio Arriba, and Sandoval Counties, New Mexico.

CASE 7273: Application of Blanks Energy Corporation for an unorthodox oil well location and possible directional drilling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of a well to be drilled 330 feet from the South line and 900 feet from the East line of Section 16, Township 18 South, Range 35 East, South Vacuum-Devonian Pool, the S/2 SE/4 of said Section 16 to be dedicated to the well. If commercial production is not obtained at said location, applicant proposes to come back up the hole and directionally drill in a westerly direction and bottom the well in the Devonian formation at a standard location in the SW/4 SE/4 of said Section 16.

CASE 7274: Application of Bass Enterprises Production Company for directional drilling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to directionally drill its James Ranch Unit Well No. 13 from an unorthodox surface location 660 feet from the South line and 1340 feet from the East line of Section 36, Township 22 South, Range 30 East, in such a manner as to bottom said well in the Morrow formation at a standard location at least 660 feet from the South line and 1980 feet from the West line of Section 31, Township 22 South, Range 31 East, the S/2 of said Section 31 to be dedicated to the well.

CASE 7275: Application of S. P. Yates for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Wolfcamp-Pennsylvanian formations underlying the N/2 of Section 21, Township 19 South, Range 27 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7263: (Continued from June 3, 1981, Examiner Hearing)

Application of Yates Petroleum Corporation for amendment of Order No. R-5527, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Division Order No. R-5527, which approved an unorthodox Morrow location, to permit the recompletion of its Blevins "IK" Well No. 1 in Unit D of Section 35, Township 17 South, Range 26 East, as an unorthodox gas well location in all Wolfcamp and Pennsylvanian formations.

CASE 7276: Application of Mobil Producing Texas & New Mexico Inc. for the extension of the vertical limits of the Langlie Mattix Pool, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the contraction of the vertical limits of the Jalmat Pool and the upward extension of the vertical limits of the Langlie Mattix Pool to the following depths underlying the following 40-acre tracts in Township 25 South, Range 37 East: NE/4 SE/4 of Section 4: 3327 feet; NE/4 SW/4 of Section 3: 3215 feet; and NE/4 NW/4 of Section 15: 3206 feet.

CASE 7277: Application of Holly Energy, Inc. for an unorthodox oil well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its Beeson Well No. 2 to be drilled 1100 feet from the North line and 2300 feet from the West line of Section 29, Township 17 South, Range 30 East, Grayburg-Jackson Pool, the NE/4 NW/4 of said Section 29 to be dedicated to the well.

CASE 7278: Application of Pollution Control, Inc. for an oil treating plant permit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority for the construction and operation of an oil treating plant for the purpose of treating and reclaiming sediment oil at a site in the E/2 NW/4 of Section 18, Township 20 South, Range 33 East.

dugan production corp.

RECEIVED
JUN 05 1981
OIL CONSERVATION DIVISION
SANTA FE

June 2, 1981

Case 7282

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

Re: Application for Downhole Commingling
Apache #3-E Well (Basin Dakota Pool and
Wild Horse Gallup Pool)
Rio Arriba County, New Mexico

Dear Mr. Ramey:

Enclosed please find three copies of the above referenced Application.

I previously verbally requested this matter be placed on the June 17, 1981 Docket and was advised by the New Mexico Oil Conservation Division that this request would be honored. I was also advised that written application must be filed with the NMOCD on or before June 7, 1981.

Please advise if you need any further information.

Sincerely,

Tommy Roberts

Tommy Roberts
Attorney

nw

enc.

cc: Consolidated Oil & Gas Co.
Lincoln Tower Bldg.
1860 Lincoln St.
Denver, CO 80203

Southern Union Production Co.
10300 N. Central Expressway
Bldg. 5, 5th Floor
Dallas, TX 75231

709 BLOOMFIELD RD. • P. O. BOX 208 • FARMINGTON, NEW MEXICO 87401 • PHONE: 505-325-1821

OIL CONSERVATION DIVISION

STATE OF NEW MEXICO

IN THE Matter of the Application of Jerome P. McHugh for Downhole Commingling of the Apache #3-E Well in Rio Arriba County, New Mexico

Case 7282

APPLICATION

Pursuant to Rule 303 C of the Rules and Regulations of the State of New Mexico Oil Conservation Division, The Applicant, Jerome P. McHugh by and through its agent, Thomas A. Dugan, hereby makes application for approval of downhole commingling in the well bore of the Apache #3-E Well in Rio Arriba County, New Mexico.

The Applicant further states:

1. The Operator of the Apache #3-E Well will be the Applicant, Jerome P. McHugh, whose address is P.O. Box 208, Farmington, NM 87401.

2. The Apache #3-E Well will be located on Jicarilla Tribal Contract No. 98 insofar as said lease covers the following described lands:

Township 26 North, Range 3 West, NMPM
Section 19: SE/4 NE/4 (Basin Dakota Pool)
Section 19: SE/4 NE/4 (Wild Horse Gallup Pool)
Rio Arriba County, New Mexico

3. The legal location of the well will be as follows:

Township 26 North, Range 3 West, NMPM
Section 19: Unit Letter H
Rio Arriba County, New Mexico

4. The Apache #3-E Well is not currently dually completed in the Basin Dakota Pool and the Wild Horse Gallup Pool.

5. The Apache #3-E Well will be capable of only low marginal production from the Basin Dakota Pool, and will be capable of only low marginal production from the Wild Horse Gallup Pool.

6. The ownership of the above mentioned Pools is common.

7. The proposed commingling from the above Pools will result in recovery of additional hydrocarbons, the prevention of waste and the protection of correlative rights.

8. All operators of leases offsetting the dedicated acreage for this well, the U.S. Geological Survey and the Supervisor of the District III Office of the New Mexico Oil Conservation Division have been mailed a copy of this Application.

WHEREFORE, the Applicant requests this Application be set for hearing on June 17, 1981, and that after said hearing the New Mexico Oil Conservation Division grant this Application by giving approval to the downhole commingling of the Apache #3-E Well in Rio Arriba County, New Mexico.

Respectfully submitted,

Thomas A. Dugan

Thomas A. Dugan
Agent for Applicant
P.O. Box 208
Farmington, NM 87401

APACHE #3-E WELL

Application For Approval of Downhole Commingling
Jerome P. McHugh

OFFSET LEASES AND OPERATORS

1. Jicarilla Contract No. 105 - Tract No. 198
Township 26 North, Range 4 West, NMPM
Section 13: SE/4
Rio Arriba County, New Mexico

OPERATOR: Consolidated Oil & Gas Co.
Lincoln Tower Bldg.
1860 Lincoln St.
Denver, CO 80203

2. Jicarilla Contract No. 105 - Tract No. 198
Township 26 North, Range 4 West, NMPM
Section 24: E/2
Rio Arriba County, New Mexico

OPERATOR: Southern Union Production Co.
10300 N. Central Expressway
Bldg. 5, 5th Floor
Dallas, TX 75231

3. Jicarilla Contract No. 98 - Tract #188
Township 26 North, Range 3 West, NMPM
Section 18: S/2
Section 19: S/2
Section 17: SW/4
Section 20: W/2

OPERATOR: Jerome P. McHugh
P.O. Box 208
Farmington, NM 87401

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JUN 05 1981
OIL CONSERVATION DIVISION
SANTA FE

OIL CONSERVATION DIVISION

STATE OF NEW MEXICO

IN THE Matter of the Application of
Jerome P. McHugh for Downhole
Commingling of the Apache #3-E Well
in Rio Arriba County, New Mexico

Case 7282

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Section 19: SE/4 NE/4 (Wild Horse Gallup Pool)
Rio Arriba County, New Mexico

3. The legal location of the well will be as follows:

Township 26 North, Range 3 West, NMPM
Section 19: Unit Letter H
Rio Arriba County, New Mexico

4. The Apache #3-E Well is not currently dually completed in the Basin Dakota Pool and the Wild Horse Gallup Pool.

5. The Apache #3-E Well will be capable of only low marginal production from the Basin Dakota Pool, and will be capable of only low marginal production from the Wild Horse Gallup Pool.

6. The ownership of the above mentioned Pools is common.

7. The proposed commingling from the above Pools will result in recovery of additional hydrocarbons, the prevention of waste and the protection of correlative rights.

8. All operators of leases offsetting the dedicated acreage for this well, the U.S. Geolcgical Survey and the Supervisor of the District III Office of the New Mexico Oil Conservation Division have been mailed a copy of this Application.

WHEREFORE, the Applicant requests this Application be set for hearing on June 17, 1981, and that after said hearing the New Mexico Oil Conservation Division grant this Application by giving approval to the downhole commingling of the Apache #3-E Well in Rio Arriba County, New Mexico.

Respectfully submitted,

Thomas A. Dugan

Thomas A. Dugan
Agent for Applicant
P.O. Box 208
Farmington, NM 87401

APACHE #3-E WELL

Application For Approval of Downhole Commingling
Jerome P. McHugh

OFFSET LEASES AND OPERATORS

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Township 26 North, Range 4 West, NMPM
Section 13: SE/4
Rio Arriba County, New Mexico

OPERATOR: Consolidated Oil & Gas Co.
Lincoln Tower Bldg.
1860 Lincoln St.
Denver, CO 80203

2. Jicarilla Contract No. 105 - Tract No. 198
Township 26 North, Range 4 West, NMPM
Section 24: E/2
Rio Arriba County, New Mexico

OPERATOR: Southern Union Production Co.
10300 N. Central Expressway
Bldg. 5, 5th Floor
Dallas, TX 75231

3. Jicarilla Contract No. 98 - Tract #188
Township 26 North, Range 3 West, NMPM
Section 18: S/2
Section 19: S/2
Section 17: SW/4
Section 20: W/2

OPERATOR: Jerome P. McHugh
P.O. Box 208
Farmington, NM 87401

OIL CONSERVATION DIVISION

STATE OF NEW MEXICO

IN THE Matter of the Application of Jerome P. McHugh for Downhole Commingling of the Apache #3-E Well in Rio Arriba County, New Mexico

Case 7282

APPLICATION

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The Applicant further states:

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Section 19: SE/4 NE/4 (Wild Horse Gallup Pool)
Rio Arriba County, New Mexico

3. The legal location of the well will be as follows:

Township 26 North, Range 3 West, NMPM
Section 19: Unit Letter H
Rio Arriba County, New Mexico

4. The Apache #3-E Well is not currently dually completed in the Basin Dakota Pool and the Wild Horse Gallup Pool.

5. The Apache #3-E Well will be capable of only low marginal production from the Basin Dakota Pool, and will be capable of only low marginal production from the Wild Horse Gallup Pool.

6. The ownership of the above mentioned Pools is common.

7. The proposed commingling from the above Pools will result in recovery of additional hydrocarbons, the prevention of waste and the protection of correlative rights.

8. All operators of leases offsetting the dedicated acreage for this well, the U.S. Geological Survey and the Supervisor of the District III Office of the New Mexico Oil Conservation Division have been mailed a copy of this Application.

WHEREFORE, the Applicant requests this Application be set for hearing on June 17, 1981, and that after said hearing the New Mexico Oil Conservation Division grant this Application by giving approval to the downhole commingling of the Apache #3-E Well in Rio Arriba County, New Mexico.

Respectfully submitted,

Thomas A. Dugan

Thomas A. Dugan
Agent for Applicant
P.O. Box 208
Farmington, NM 87401

APACHE #3-E WELL

Application For Approval of Downhole Commingling
Jerome P. McHugh

OFFSET LEASES AND OPERATORS

1. Jicarilla Contract No. 105 - Tract No. 198
Township 26 North, Range 4 West, NMPM
Section 13: SE/4
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OPERATOR: Consolidated Oil & Gas Co.
Lincoln Tower Bldg.
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Township 26 North, Range 4 West, NMPM
Section 24: E/2
Rio Arriba County, New Mexico

OPERATOR: Southern Union Production Co.
10300 N. Central Expressway
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Dallas, TX 75231

3. Jicarilla Contract No. 98 - Tract #188
Township 26 North, Range 3 West, NMPM
Section 18: S/2
Section 19: S/2
Section 17: SW/4
Section 20: W/2

OPERATOR: Jerome P. McHugh
P.O. Box 208
Farmington, NM 87401

Memo

June 17th Hearing

From

FLORENE DAVIDSON
ADMINISTRATIVE SECRETARY

To

Called in by Tommy Roberts
5/22/81

Jerome P. McHugh
Wellhead Commingling

Wildhorse - Gallup and
Basin - Dakota

Apache #3-E, Unit H

19-26N-3W

Rio Arriba County

OIL CONSERVATION COMMISSION-SANTA FE

dr/

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 7282

Order No. R-6221

APPLICATION OF JEROME P. McHUGH

FOR DOWNHOLE COMMINGLING, RIO ARRIBA

COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on June 17, 19 81, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this _____ day of June, 19 81, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Jerome P. McHugh, is the owner and operator of the Apache Well No. 3-E, located in Unit H of Section 19, Township 26 North, Range 3 West, NMPM, Rio Arriba County, New Mexico.

(3) That the applicant seeks authority to commingle Wildhorse-Gallup and Basin-Dakota production within the wellbore of the above-described well.

(4) That from the Wildhorse-Gallup zone, the subject well is expected to be capable of low marginal production only.

(5) That from the Basin-Dakota zone, the subject well is expected to be capable of low marginal production only.

(6) That the proposed commingling may result in the recovery of additional hydrocarbons from each of the subject pools, thereby preventing waste, and will not violate correlative rights.

(7) That the reservoir characteristics of each of the subject zones are such that underground waste would not be caused by the proposed commingling provided that the well is not shut-in for an extended period.

(8) That to afford the Division the opportunity to assess the potential for waste and to expeditiously order appropriate remedial action, the operator should notify the Aztec district office of the Division any time the subject well is shut-in for 7 consecutive days.

(9) That in order to allocate the commingled production to each of the commingled zones in the subject well, 50 percent of the commingled oil and gas production should be allocated to the Wildhorse-Gallup zone, and 50 percent ~~of the commingled production~~ to the Basin-Dakota zone.

~~(ALTERNATE)~~

~~(9) That in order to allocate the commingled production to each of the commingled zones in the wells, applicant should consult with the supervisor of the Aztec district office of the Division and determine an allocation formula for each of the production zones.~~

IT IS THEREFORE ORDERED:

(1) That the applicant, Jerome P. McHugh, is hereby authorized to commingle Wildhorse-Gallup and Basin-Dakota production within the wellbore of the Apache Well No. 3-E, located in Unit H of Section 19, Township 26 North, Range 3 West, NMPM, Rio Arriba County, New Mexico.

~~(2) That the applicant shall consult with the supervisor of the Aztec district office of the Division and determine an allocation formula for the allocation of production to each zone in each of the subject wells.~~

~~(ALTERNATE)~~

(2) That 50 percent of the commingled oil and gas production shall be allocated to the Wildhorse-Gallup zone and 50 percent ~~of the commingled production shall be allocated~~ to the Basin-Dakota zone.

(3) That the operator of the subject well shall immediately notify the Division's Aztec district office any time the well has been shut-in for 7 consecutive days and shall concurrently present, to the Division, a plan for remedial action.

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.