

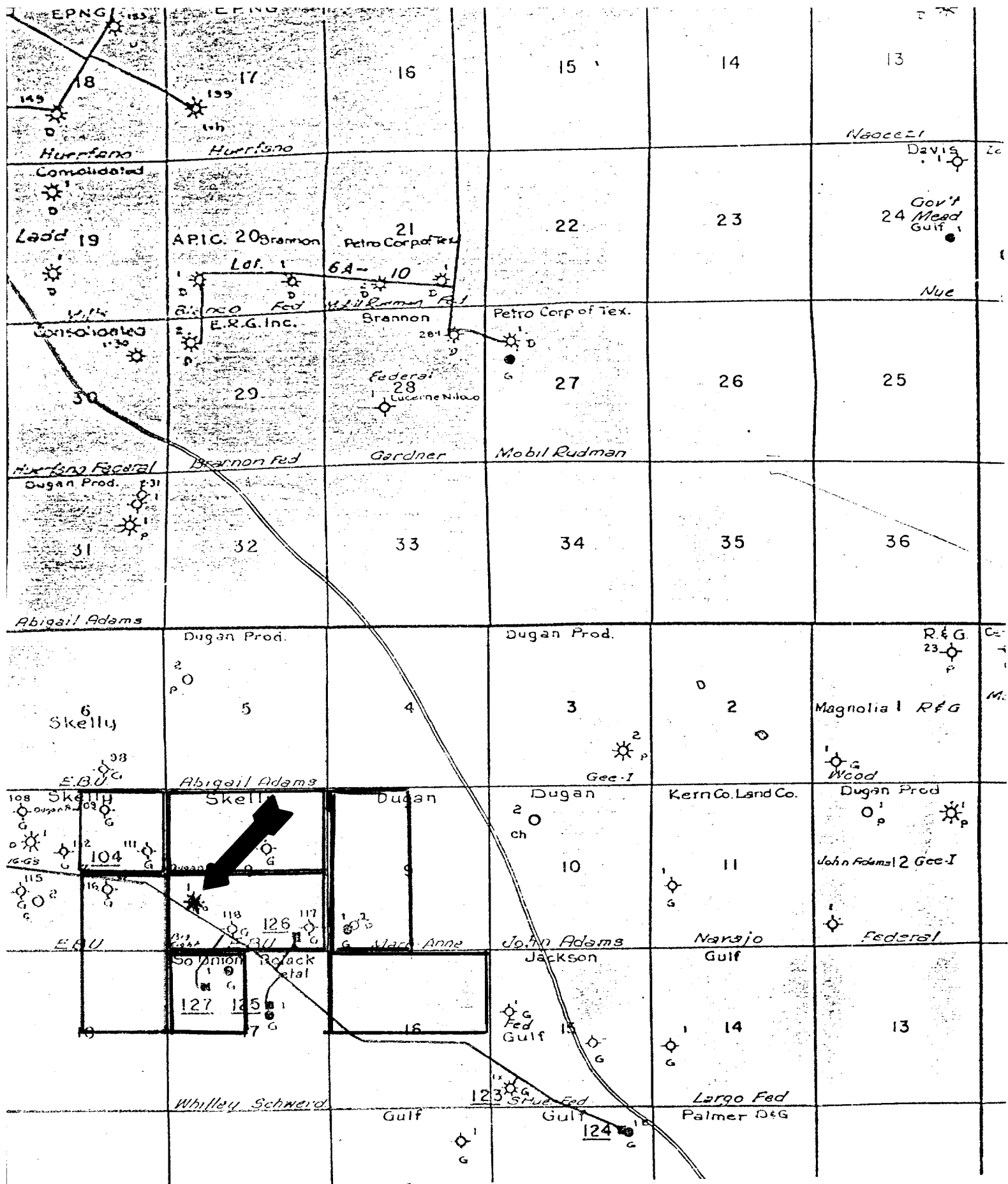
APPLICATION FOR DOWNHOLE COMMINGLING

by DUGAN PRODUCTION CORP. for

Big Eight #1 Well  
San Juan County, New Mexico

CASE NO. 6147

EXHIBIT NO. 1



Township 24 North, Range 9 West, NMPM

Big Eight #1  
Well

L-8-24N-9W

Offsetting Leases and Operators

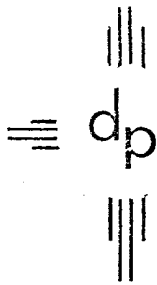
- |                                                                                                                                                                                                               |                                                                                                                                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>A.  USA NM 25540<br/>Dugan Production Corp.</p> <p>B.  USA NM 25433<br/>Dugan Production Corp.</p> <p>C.  USA NM 25441<br/>Texaco Inc.</p> <p>D.  Unleased Federal Acreage<br/>U. S. Geological Survey</p> | <p>E.  USA NM 25432<br/>Texaco Inc.</p> <p>F.  State of NM E-6644-12<br/>Amoco Production Co.</p> <p>G.  USA NM 10089<br/>Dugan Production Corp.</p> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|

\* Well Location

T-24-N, R-9-W

RESUME OF WELL COMPLETION HISTORY

1-Northwest Pipeline 1-File



dugan production corp.

Dugan Production Corp.  
Big 8 #1  
1530' FSL - 840' FWL  
Sec 8, T24N, R9W  
San Juan County, New Mexico  
Elevation - 6771' GR

MORNING REPORT

1-19-76	Moved in L & B Speed Drill and spudded 12-1/4" hole, drilled to 90'.			
1-20-76	Finished drilling 12-1/4" hole to 190' GR. Ran 6 jts 8-5/8" OD 24# 8R ST&C csg, TE 188' set @ 199' RKB, cemented by Woodco w/115 sx Class "B" w/2% CaCl. POB 3:30 PM 2-19-76.			
	WAITING ON ROTARY TOOLS			
3-7-76	Moved in and rigged up Young Drilling Company. Drilled to 15--something feet (report by Herman Walters).			
3-8-76	Trip for Bit #3 @ 2633'. WT 9.0 VIS 36 WL 7.0			
3-9-76	Drilling @ 3322' w/Bit #5 WT 8.9+ VIS 36 WL 6.0 PH 9.5			
3-10-76	Trip @ 3833' for Bit #6 WT 9.0+ VIS 40 WL 6.0 PH 9.5			
3-11-76	Drilling @ 4370' w/Bit #8 WT 9.1 VIS 37 WL 7.0 DEV 1-3/4° @ 4274'			
3-12-76	Trip @ 4775' for Bit #8. WT 9.2 VIS 34 WL 8 PH 9.5 DEV 1-3/4° @ 4719'			
3-13-76	Trip @ 5075 for Bit #10 WT 9.1 VIS 37 WL 6.0 PH 9.5			
3-14-76	Drilling @ 5412' w/Bit #11 WT 9.2 VIS 38 WL 6.6 PH 9.0 DEV 1-1/2° @ 5393'			
3-15-76	Drilling @ 5745' w/Bit #12 WT 9.2 VIS 38 WL 5.6 PH 8.8 DEV 2-1/4° @ 5680'			
3-16-76	Drilling @ 6170' w/Bit #13 WT 9.2 VIS 38 WL 5.2 PH 8.5 DEV 2° @ 6084'			

709 BLOOMFIELD RD. • P. O. BOX 234 • FARMINGT

APPLICATION FOR DOWNHOLE COMMINGLING

by DUGAN PRODUCTION CORP. for

Big Eight #1 Well  
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EXHIBIT NO. 2

MORNING REPORT (Cont'd)

3-17-76 Drilling @ 6372'  
WT 9.2 VIS 38 WL 5.4 PH 9

3-18-76 TD 6392'. Conditioned hole, made short trip, attempted to run logs, hit bridge @ 265'. Made short trip - 30 stands, circulated hole, attempted to log, hit bridge @ 310'. Ran 6 stands, drilled out bridges. Go International ran IES and density-gamma ray logs.

3-19-76 TD 6392'. Laid down drill pipe. Ran 204 jts 4-1/2" OD 10.5# K-55 8R ST&C CF&I csg set @ 6392'. Had trouble breaking circulation. Cemented first stage w/300 sx 4% gel (456 cu ft) 1/4# cello-flake/sk, good mud returns while cementing. Max cementing press 600 psi, worked csg while cementing. POB 10:30 PM 3-18-76. Opened Baker stage tool @ 4430', circulated hole 4 hrs thru stage tool. Cemented second stage w/525 sx 65-35 plus 12% gel plus 1/2# cello-flake/sk (slurry volume 1328 cu ft). Good mud returns while cementing. Max cementing press 1000 psi. POB 3:15 AM 3-18-76. Had approx one bbl cement to surface. Released rig.

WAITING ON COMPLETION RIG

DAILY REPORT

4-16-76 Moved in Farmington Well Service Rig #6. Set csg pack off, welder trimmed and bevelled csg, installed tbg head and BOP. Went in hole with 3-7/8" bit on 2-3/8" OD tbg. Tagged stage collar @ 4430'.

4-17-76 Drilled stage collar, cleaned out 18' cement above float collar, cleaned out to 6375', circulated hole clean.

4-18-76 Shut down - Easter Sunday.

4-19-76 Western Company pressure tested csg and BOP to 4000 psi - held OK. Circulated hole. Spotted 300 gal 15% HCl. Pulled tbg. Go International ran gamma-ray correlation log, hit btm @ 6362'. Ran perf gun, unable to spud past 6362'. Ran bond log. Went in hole with 2-3/8" tbg, circulated out 13' of frac sand. *from 4-19-76?*

4-20-76 PBTD 6375'. Pressure tested csg and BOP to 4000 psi - held OK. Spotted 300 gal 15% HCl. Pulled tbg, went in hole w/perf gun, tagged up @ 6370'. Perforated one jet/ft 6353-69'. Broke down perf, pumped 100 bbls wtr, IR 32 B/M @ 3600 psi, ISDP 1800 psi. Perforated one jet/ft 6255-69' and 6278-90'. Western Company frac Dakota fm using 1628 bbls wtr, 58,700 lbs 20-40 sd, 2979 hp, 2 1/2# FR-2/1000 gal wtr, shut down after 50 bbls pad ISDP 1400 psi, IF 3000 psi, Max 3800 psi, Avg 3260 psi, Min 2900 psi, Final 3700 psi, Avg IR 37.4 B/M, ISDP 2200 psi. Made 2 ball drops of 15 balls each: first drop 200 psi increase; second drop w/300 gal 15% HCl 100 psi press increase. Shut well in 8 hrs. Opened well to pit overnight.

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Big 8 #1  
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DAILY REPORT (Cont'd)

- 4-21-76 Well flowing by head w/small amount of flammable gas, wtr slightly salty. Went in hole w/tbg, had 5' sand fill. Swabbed well 8 hrs, swabbing est 80 bbls wtr/hr. Wtr gas cut. Csg press 100 psi, fluid level 500'. Left tbg open overnight.
- 4-22-76 SI csg press 500 psi. Well had not flowed thru tbg overnight. Fluid level 500'. Made 2 swab runs. Checked sand fill-up, had 12' of sand in well bore. Circulated sand out of hole. Pulled tbg. Ran Baker Model "R" packer set @ 6330'. Swabbed perms 6353-69' thru tbg, swabbed 5 hrs, well making enough gas to blow wtr off swab but will not flow. Left tbg open overnight.
- 4-23-76 Well kicked off during night, flowing by heads, show of oil, est 500 MCFGPD (oil golden color). Moved packer up hole, set @ 6230'. All Dakota perms open below packer. Swabbed well, well kicked off making est 1000 MCFGPD w/heavy spray of wtr. Left well open overnight.
- 4-24-76 Well flowing est 1500 MCF w/heavy spray of oil and wtr (oil from all zones dark green color). Killed well, pulled tbg and packer, set Baker Model "D" packer on wire line @ 6200'. Perforated one jet/ft 6125-40' and 6154-66'. Ran Baker Model "R" packer on 2-3/8" OD tbg set @ 6077'. Swabbed tbg dry, no fluid entry, filled back side of tbg, pressured to 500 psi. Acidized Greenhorn fm using 1000 gal 15% HCl. Dropped 25 balls in acid. IF 3725 psi, Max 3725 psi, broke from 3600-3325' when acid hit, Avg 3300 psi, Final 3500 psi, Avg IR 2.2 B/M, Max IR 2.8 B/M. Small press increase when balls hit. ISDP 3000 psi, 5-Min SI 2975 psi. Swabbed well, recovered approx 1/4 of acid, well making est 50 MCF w/some light oil. Shut well in.
- 4-25-76 Sunday - did not work
- 4-26-76 Shut-in tbg press 200 psi. Swabbed well, had 1500' of oil, no wtr. Second run recovered 200' of oil, no wtr. Well making est 50 MCF. Loaded 2-3/8" tbg w/wtr, pulled Baker Model "R" packer. Ran 5 jts 1-1/4" OD 2.3# J-55 10R IJ tbg below seal assy and Baker Model "F" nipple above seal assy. 196 jts 2-3/8" OD 4.7# J-55 8R EUE tbg plus one 4' tbg sub placed first under donut. TE 6353.86' set @ 6365' RKB. Tbg stung into Baker Model "D" packer @ 6200'. Kicked well off with three swab runs. Well flowing to pit making est 1800 MCF w/heavy spray of wtr and oil. Let well flow to pit over night.
- 4-27-76 After flowing to pit 16 hrs well making est 1200 MCF w/heavy spray of oil and wtr, some slugs of wtr. Shut well in.
- 4-28-76 Blew well one hr, unloaded slug of oil and wtr, flowing strong and steady after one hr. Shut well in for test.

SHUT-IN FOR INITIAL POTENTIAL TEST

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EXHIBIT NO. 2

Dugan Production Corp.  
Big 8 #1  
Page 4

DAILY REPORT (Cont'd)

5-14-76      Opened well to atmosphere, did not unload after 5 hrs. Rigged up Farmington Well Service swabbing unit. Made 2 swab runs to 2500' and well kicked off. Left flowing to pit (fluid level @ 400' below surface on first swab run).

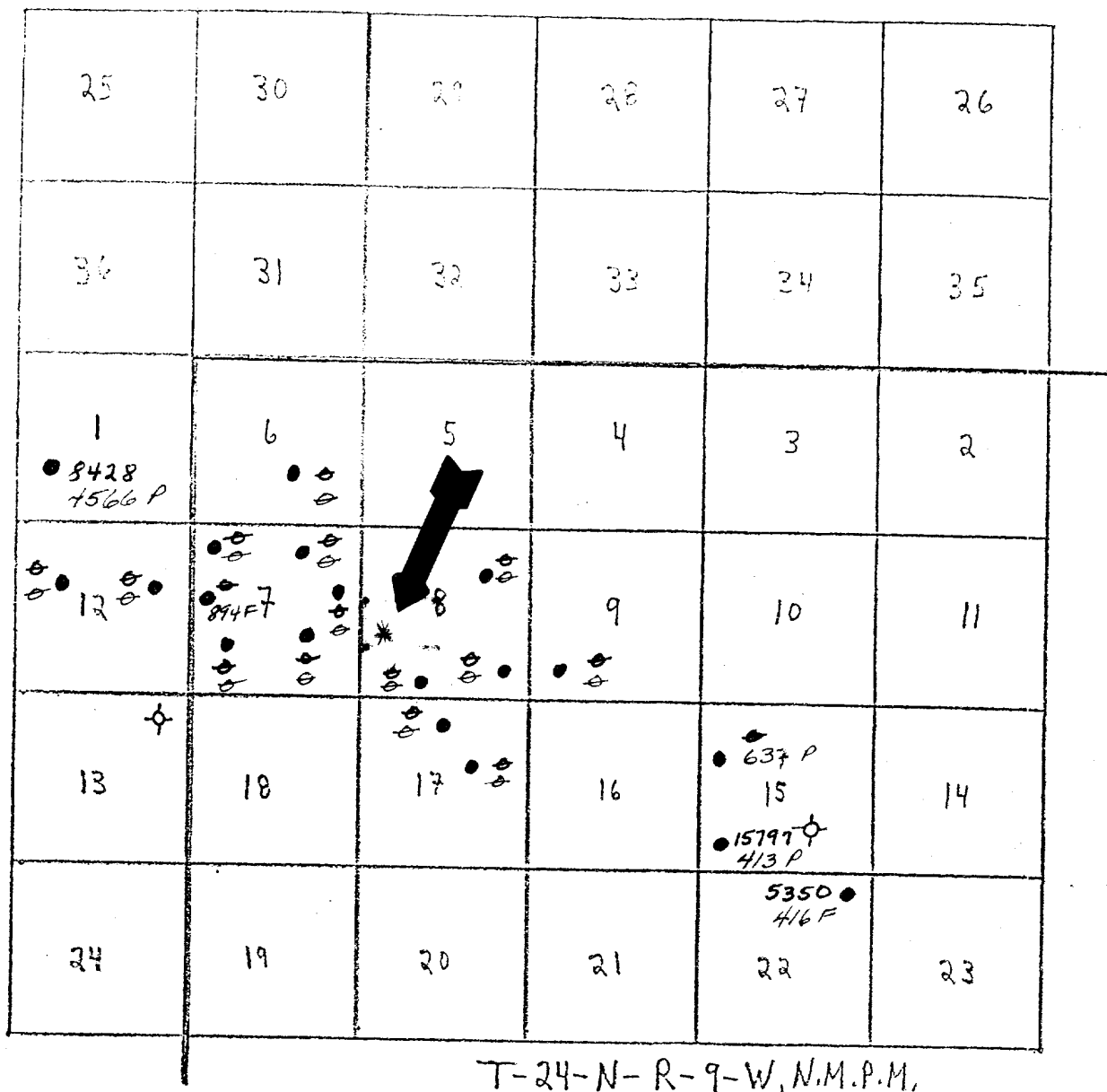
APPLICATION FOR DOWNHOLE COMMINGLING

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San Juan County, New Mexico




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EXHIBIT NO. 2



1976 PRODUCTION

Bisti Lower Gallup Pool Wells

 Well Location  
 Gas Production  
 Oil Production

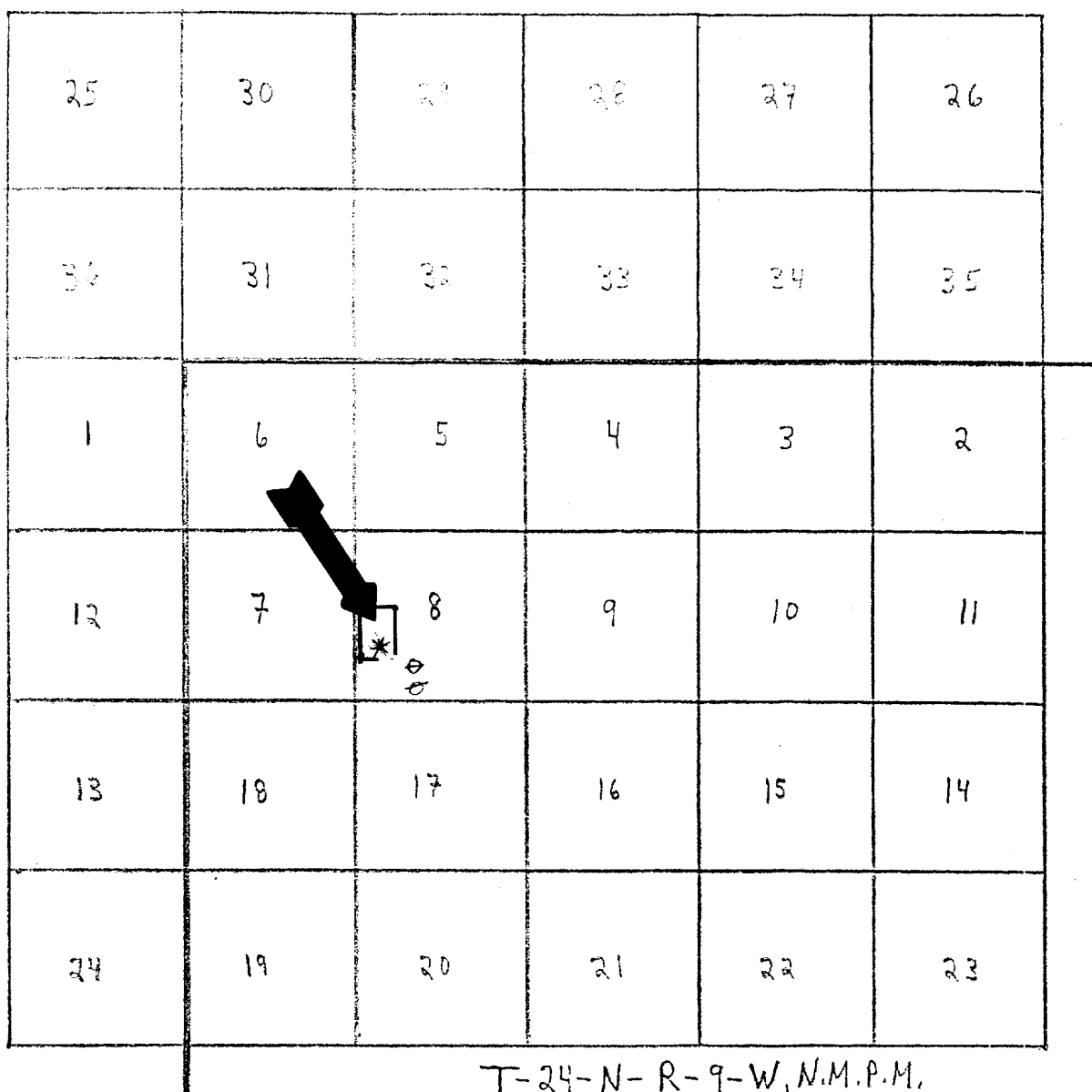
APPLICATION FOR DOWNHOLE COMMINGLING

by DUGAN PRODUCTION CORP. for

Big Eight #1 Well  
San Juan County, New Mexico




CASE NO. 6147

EXHIBIT NO. 3



# 1976 PRODUCTION

## Undesignated Greenhorn Pool Wells

-  Well Location
-  Gas Production
-  Oil Production

APPLICATION FOR DOWNHOLE COMMINGLING

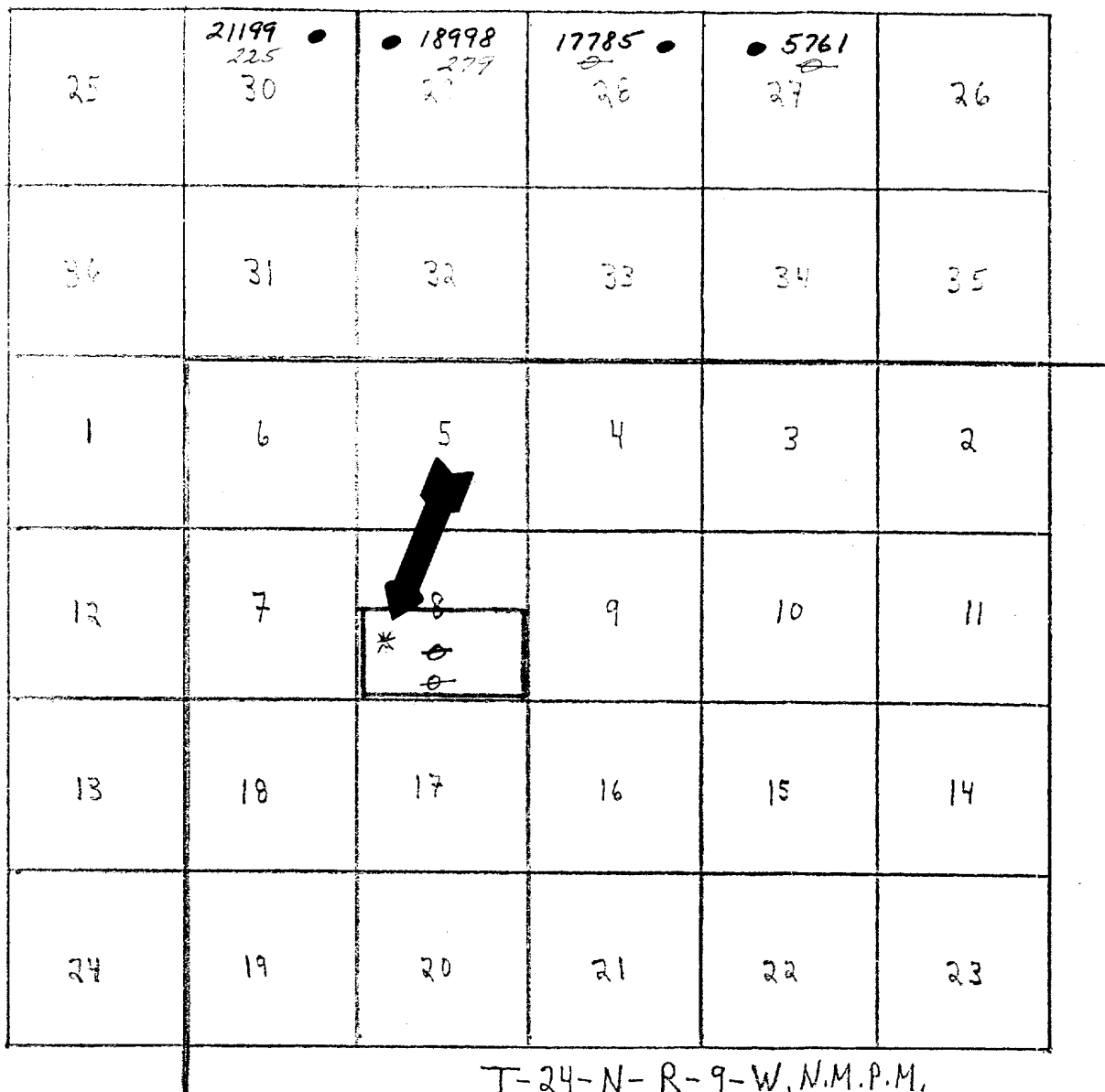
by DUGAN PRODUCTION CORP. for

Big Eight #1 Well  
San Juan County, New Mexico

CASE NO. 6147

EXHIBIT NO. 4





# 1976 PRODUCTION

## Basin Dakota Pool Wells

- \* Well Location
- Gas Production
- Oil Production

### APPLICATION FOR DOWNHOLE COMMINGLING

by DUGAN PRODUCTION CORP. for

Big Eight #1 Well  
San Juan County, New Mexico

CASE NO. 6147

EXHIBIT NO. 5

by DUGAN PRODUCTION CORP. for

CASE NO. 6147

EXHIBIT NO. 6



# COMPENSATED DENSITY LOG

FILING NO.

COMPANY DUGAN PRODUCTION CORP

WELL BIG EIGHT No. 1

FIELD WILDCAT

COUNTY SAN JUAN STATE NEW MEXICO

Location:

1530 FSL & 840 FWL

Sec. 8 Twp. 24N Rge. 9W

Other Services:

156

Permanent Datum: GROUND LEVEL; Elev.: 6771

Elev.: K.B. 6780

Log Measured From K3 11 Ft. Above Perm. Datum

D.F. 673

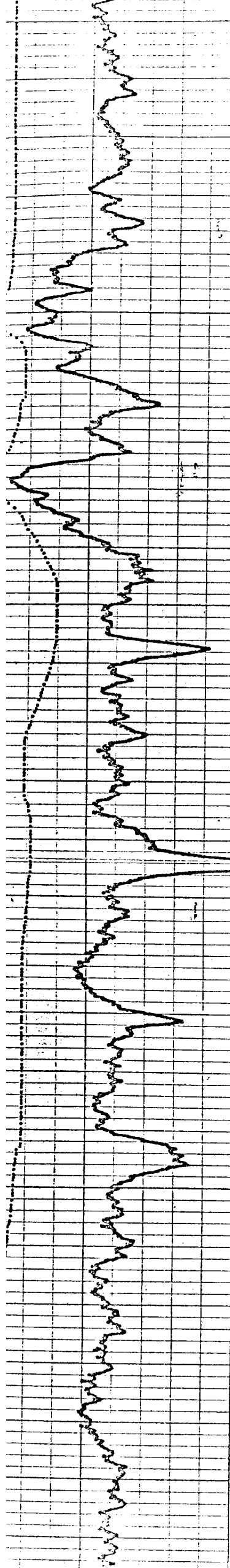
Drilling Measured From KB

G.L. 677

Date	18 MARCH 1976	
Run No.	ONE	
Type Log	GAMMA- GAMMA	
Depth—Driller	6372	
Depth—Logger	6479	
Bottom logged interval	6-178	
Top logged interval		*
Type fluid in hole	GEL	
Salinity, PPM-Cl.	Rm 3.1-2.0 M @ 79'	
Density	1.9.2	
Level	FULL	
Max rec. temp., deg F.	156	
Operating rig time	4 Hours	
Recorded by	DENTON- HAM	
Witnessed by	DUGAN	

# FIELD PRINT

[illegible]



5300

5342

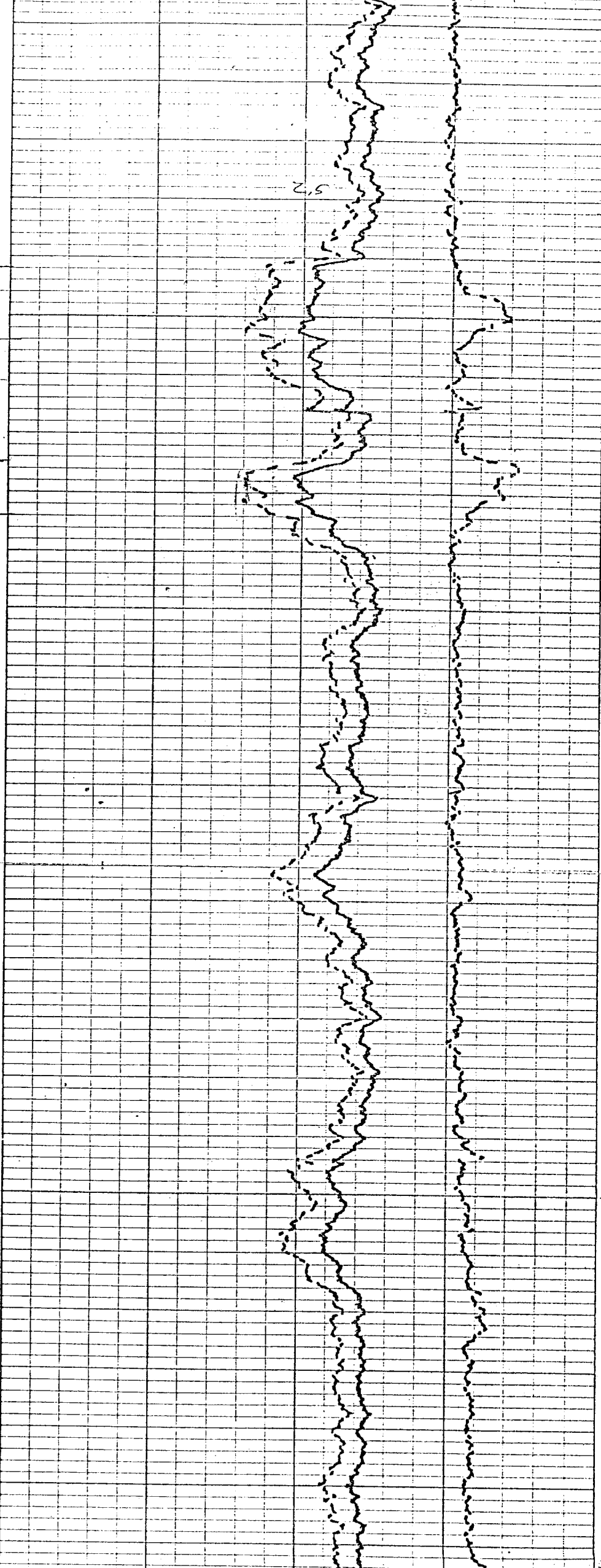
5354

5375

5384

5400

5500



by DUGAN PRODUCTION CORP. for

Big Eight #1 Well  
San Juan County, New MexicoCASE NO. 6147EXHIBIT NO. 6AINDUCTION  
ELECTRICAL LOG

FILING NO.

Perf. Mar. 64  
5  
0COMPANY DUGAN PRODUCTION CORP.WELL BIG EIGHT No. 1FIELD WILLOCATCOUNTY SAN JUAN STATE NEW MEXICO

LOCATION:

1530 FSL & 840 FWC

Other Services

CDL/G12SEC 8TWP 24N RGE 9WPermanent Datum GROUND LEVEL Elev. 6771Log Measured from KB, 11 Ft. Above Permanent DatumDrilling Measured from KB

Elevations:

KB 6782DF 6781GL 6771

Date	<u>17 MARCH 1976</u>	FIELD PRINT				
Run No.	<u>ONE</u>					
Depth--Driller	<u>6392</u>					
Depth--Logger	<u>6331</u>					
Bottom Logged Interval	<u>6330</u>					
Top Logged Interval	<u>197</u>					
Casing--Driller	<u>8 3/8 @ 191</u>					@
Casing--Logger	<u>197</u>					
Bit Size	<u>7 7/8</u>					
Type Fluid in Hole	<u>GEL</u>					
Density and Viscosity	<u>9.2 @ 130</u>	@	@	@	@	
pH and Fluid Loss	<u>11 4 cc</u>	cc	cc	cc	cc	
Source of Sample	<u>PIT</u>					
Rm @ Meas. Temp.	<u>3.1 @ 77 °F</u>	@ °F	@ °F	@ °F	@ °F	
Rmf @ Meas. Temp.	<u>3.9 @ 73 °F</u>	@ °F	@ °F	@ °F	@ °F	
Rmc @ Meas. Temp.	<u>3.0 @ 72 °F</u>	@ °F	@ °F	@ °F	@ °F	
Source of Rmf and Rmc	<u>M M</u>					
Rm @ BHT	<u>1.6 @ 154 °F</u>	@ °F	@ °F	@ °F	@ °F	
Time Since Circ.	<u>6 Hours</u>					
Max. Rec. Temp. Deg. F.	<u>154 °F</u>	°F	°F	°F	°F	
Equip. No. and Location	<u>7008 FARM</u>					
Recorded By	<u>DENTON HAMILTON</u>					
Witnessed By	<u>DUGAN</u>					

5300

5342

1

2

Pedestal

5351

0 10 20 30 40 50 60 70 80 90 100

5375

MOVABLE  
SW 30°

5384

5400

5500

by DUGAN PRODUCTION CORP. for

CASE NO. 6147

EXHIBIT NO. 7



# COMPENSATED DENSITY LOG

COMPANY DUGAN PRODUCTION CORP

WELL BIG EIGHT No. 1

FIELD WILDCAT

COUNTY SAN JUAN STATE NEW MEXICO

**Location:**

1530 FSL & 840 FWL

Sec. 8 Twp. 24N Rge. 9W

Other Services:

156

Permanent Datum: GROUND LEVEL; Elev.: 6771

Elev.: K.B. 6782

Log Measured From K3 11 Ft. Above Perm. Datum

D.F. 628

Drilling Measured From K8

G.L. 677

Date	18 MARCH 1976
Run No.	ONE
Type Log	GAMMA- GAMMA
Depth—Driller	6372
Depth—Logger	6479
Bottom logged interval	6478
Top logged interval	*
Type fluid in hole	GEL
Salinity, PPM Cl. Rm	3.1 g/m @ 79"
Density	1.9.2
Level	FULL
Max rec. temp., deg F.	156
Operating rig time	4 Hours
Recorded by	DENTON- HAM
Witnessed by	DUGAN

# FIELD PRINT

[illegible]



6100

6125

6140

6155

6166

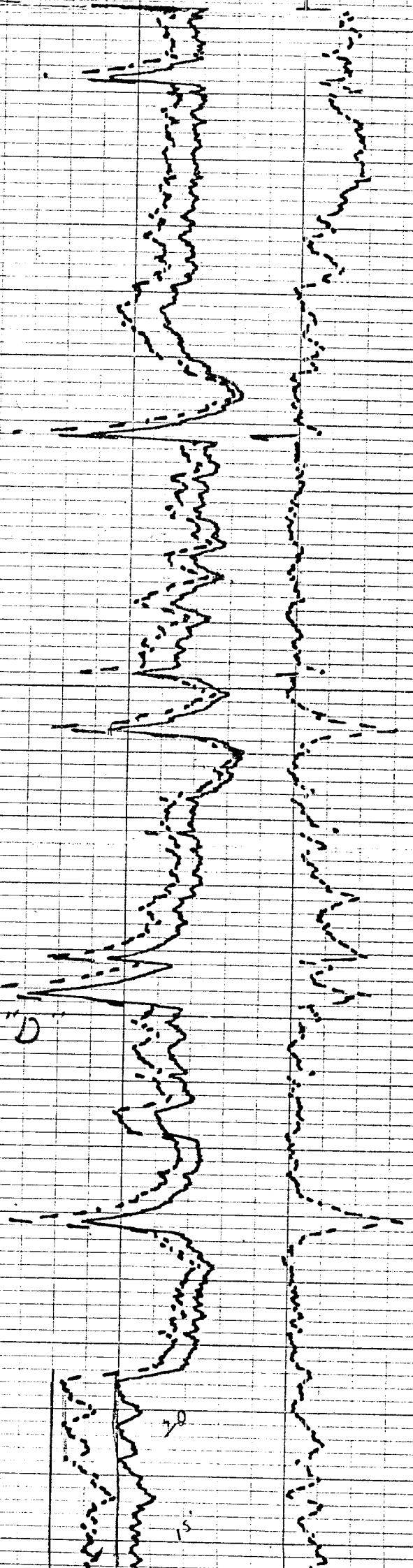
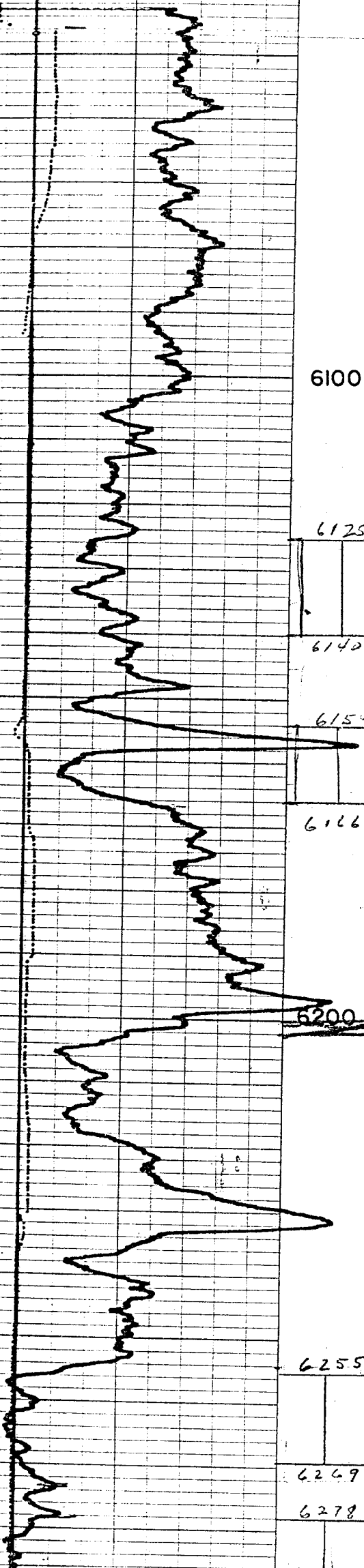
6200

Baker Model "D"

6255

6269

6278



6140

6151

6166

6200

Baker Model "D"

6255

6269

6278

6290

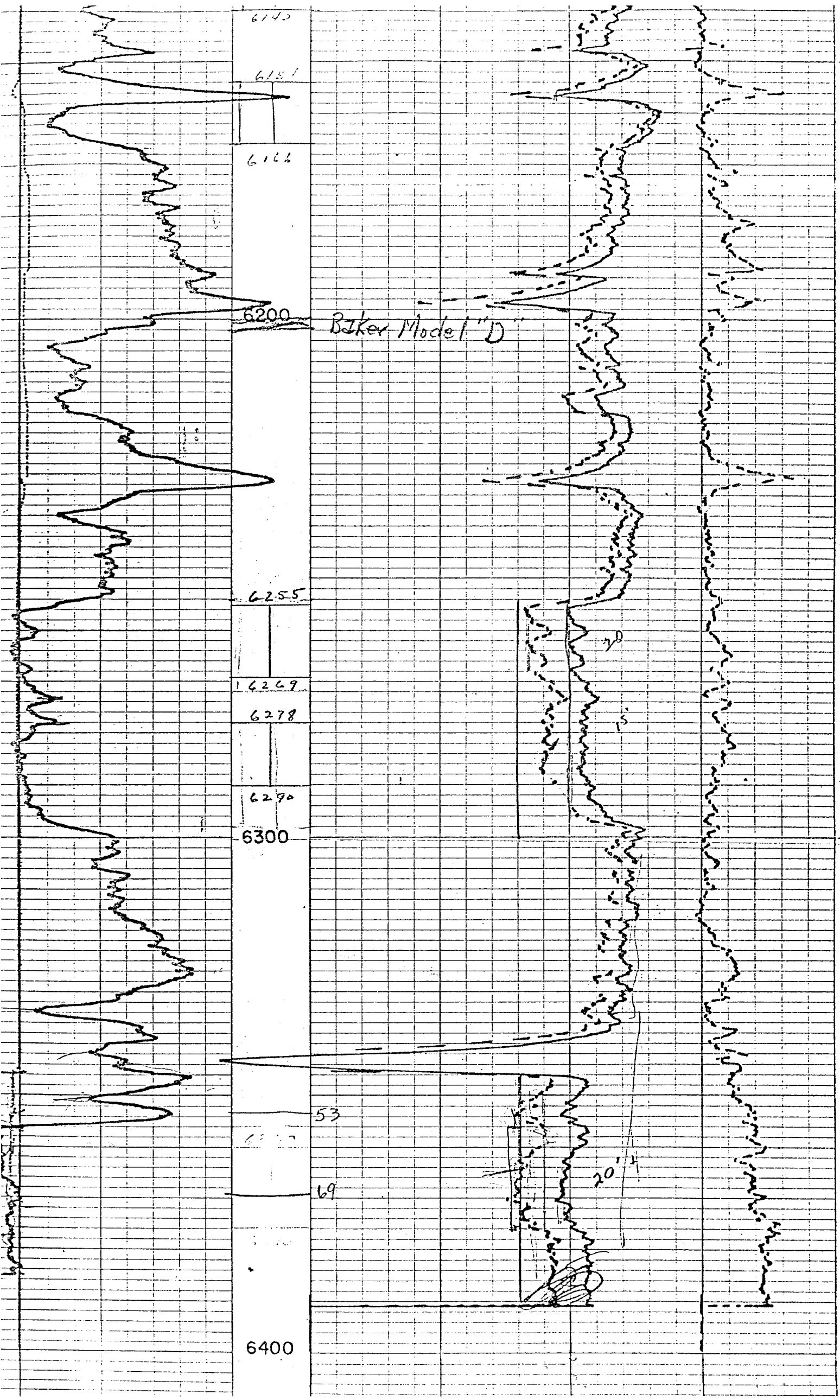
6300

53

6310

69

6400





## APPLICATION FOR DOWNHOLE COMMINGLING

by DUGAN PRODUCTION CORP. for

Big Eight #1 Well  
San Juan County, New MexicoCASE NO. 6147EXHIBIT NO. 7AINDUCTION  
ELECTRICAL LOG

FILING NO. 6782 6166 6166	COMPANY <u>DUGAN PRODUCTION CORP.</u>	
	WELL <u>BIG EIGHT No. 1</u>	
	FIELD <u>WILDCAT</u>	
	COUNTY <u>SAN JUAN</u> STATE <u>NEW MEXICO</u>	
LOCATION:		Other Services
<u>1500 FSL &amp; 840 FWC</u>		<u>CDL/G12</u>
SEC <u>8</u> TWP <u>24N</u> RGE <u>9W</u>		
Permanent Datum <u>GROUND LEVEL</u> Elev. <u>6771</u>		Elevations:
Log Measured from <u>KB</u> , <u>11</u> Ft. Above Permanent Datum		KB <u>6787</u>
Drilling Measured from <u>KB</u>		DF <u>6731</u>
		GL <u>6771</u>
Date	<u>17 MARCH 1976</u>	FIELD PRINT
Run No.	<u>ONE</u>	
Depth—Driller	<u>6392</u>	
Depth—Logger	<u>6331</u>	
Bottom Logged Interval	<u>6330</u>	
Top Logged Interval	<u>197</u>	
Casing—Driller	<u>8 5/8 @ 191</u>	
Casing—Logger	<u>197</u>	
Bit Size	<u>7 7/8</u>	
Type Fluid in Hole	<u>GEL</u>	
Density and Viscosity	<u>9.7</u> <u>130</u>	
pH and Fluid Loss	<u>11</u> <u>4</u> cc	
Source of Sample	<u>PIT</u>	
Rm @ Meas. Temp.	<u>3.1 @ 77 °F</u>	
Rmf @ Meas. Temp.	<u>3.9 @ 73 °F</u>	
Rmc @ Meas. Temp.	<u>3.0 @ 72 °F</u>	
Source of Rmf and Rmc	<u>M</u> <u>M</u>	
Rm @ BHT	<u>1.6 @ 154 °F</u>	
Time Since Circ.	<u>6 Hours</u>	
Max. Rec. Temp. Deg. F.	<u>154 °F</u>	
Equip. No. and Location	<u>7008 FARM</u>	
Recorded By	<u>DENTON-HAMILTON</u>	
Witnessed By	<u>DUGAN</u>	

6000

6100

6125

4

5

6140

6154

6

7

6166

6200

Baker  
Model "D" 6200

6166

6200

Baker  
Model "D" 6200

6255

8 100%

9 50%

6269

6278

10 68%

6290

6300

50 M.L.

11 40%

63

6400

DIAGRAMATIC SKETCH OF

OIL AND GAS COMPLETION

Big Eight #1 Well

8-5/8" OD Casing @ 199'  
Cemented to surface w/115 sx

Baker Stage Tool @4430'  
Cemented: First stage 300 sx  
Second stage 525 sx

Greenhorn Perfs  
6125'  
6166'

Baker Model "D" Packer  
@ 6200'

Dakota Perfs  
6252'  
6369'

2-3/8" Tbg @ 6365'  
6375 PBTD  
4-1/2" Csg @ 6392'  
TD 6392'

APPLICATION FOR DOWNHOLE COMMINGLING

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Big Eight #1 Well  
San Juan County, New Mexico

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EXHIBIT NO. 8