Case No
7412

Large Exhibits

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Welex
DIGITAL LOGGING SYSTEM

COMPENSATED DENSITY DUAL SPACED NEUTRON LOG

COMPANY Gulf Oil Exploration & Production
WELL Lea "ZD" State # 1
FIELD Airstrip
County Lea State N.M.

COMPANY GULF OIL EXPLORATION & PRODUCTION CO.
WELL LEA "ZD" STATE # 1
FIELD AIRSTRIP BONESPRINGS
COUNTY LEA STATE NEW MEXICO
Location 990' FSL & 330' FWL
Other Services: Guard-Forxo
Sec. 30 Twp. 18-S Rge 35-E

Permanent Datum Ground Level Elev. 3954'
Log Measured From K. B. - 16.5 Ft. Above Perm. Datum
Drilling Measured From Kelly Bushing
Elev.: K. B. 3970.5' D. F. 3969.5' G. L. 3954'

Date	5-23-81
Run No.	- One -
Depth—Driller	9450
Depth—Welex	9448
Btm. Log. Inter	9447
Top Log Inter.	Surface
Casing—Driller	8-5/8" @ 3475
Casing—Welex	3528
Bit Size	7-7/8"
Type Fluid in Hole	Salt Base Mud
Dens. I Visc.	9.2 | 28
pH I Fluid Loss	8.5 | ml
Source of Sample	Pit
R_m @ Meas. Temp.	.08 @ 72 °F
R_{mf} @ Meas. Temp	.07 @ 64 °F
R_{mc} @ Meas. Temp.	@ °F
Source R_{mf} R_{mc}	Measured
R_m @ BHT	.05 @ 138 °F
Time Since Circ.	10 Hours
Max. Rec. Temp.	138 °F @ B.H.
Equip. I Location	2919 Hobbs
Recorded By	Chapman
Witnessed By	Mr. Carson

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
EXHIBIT NO.
CASE NO.
Submitted by
Hearing Date

EXHIBIT 10
CASE #7412
November 19, 1981

Fold Here

EQUIPMENT DATA

GAMMA		ACOUSTIC		DENSITY		NEUTRON	
Run No.	- One -	Run No.		Run No.	- One -	Run No.	- One -
Tool Model No.	260	Tool Model No.		Log Type	Density	Log Type	N - N
Diameter	3-3/8"	Serial No.		Tool Model No.	127B	Tool Model No.	260
Detector Model No.	102A			Diameter	4"	Diameter	3-3/8"
Type	Scint.	Run No.		Detector Model No.	127B	Detector Model	259
Length	4"	Tool Model No.		Type	GM/Scint.	Type	He 3
Distance to Source	14.5'	Serial No.		Length		Length	
Tool Serial No.	9811			Source Model No.	DCS	Source Model	10 CU

CALIBRATE FIXTURES			DENSITY		NEUTRON	
Log Type	Ser. No.	Value	Serial No.	DCS 112	Serial No.	T 650
			Spacing		Spacing	
Gamma	F 2	103 API	Type	Cs 137	Type	AmBe
Density	412	2-559, -.214	Strength	500 Mc	Strength	2.0x10⁷ N/S
Neutron	T 472	500 Mc	Tool Serial No.	98118	Tool Serial No.	98118

LOGGING DATA

GENERAL				GAMMA			DENSITY			NEUTRON		
Run No.	Depths From	Depths To	Speed Ft/Min.	T.C. Sec.	Scale		T.C. Sec.	Scale	Matrix	T.C. Sec.	Scale	Matrix
-1-	0	9447'	30	4	0-100		4	30%-10%	LIME	4	30%-10%	LIME

R_m @ BHT .050 @ 138 °F
R_{mf} BHT .045 @ 138 °F
R_{mc} BHT @ °F

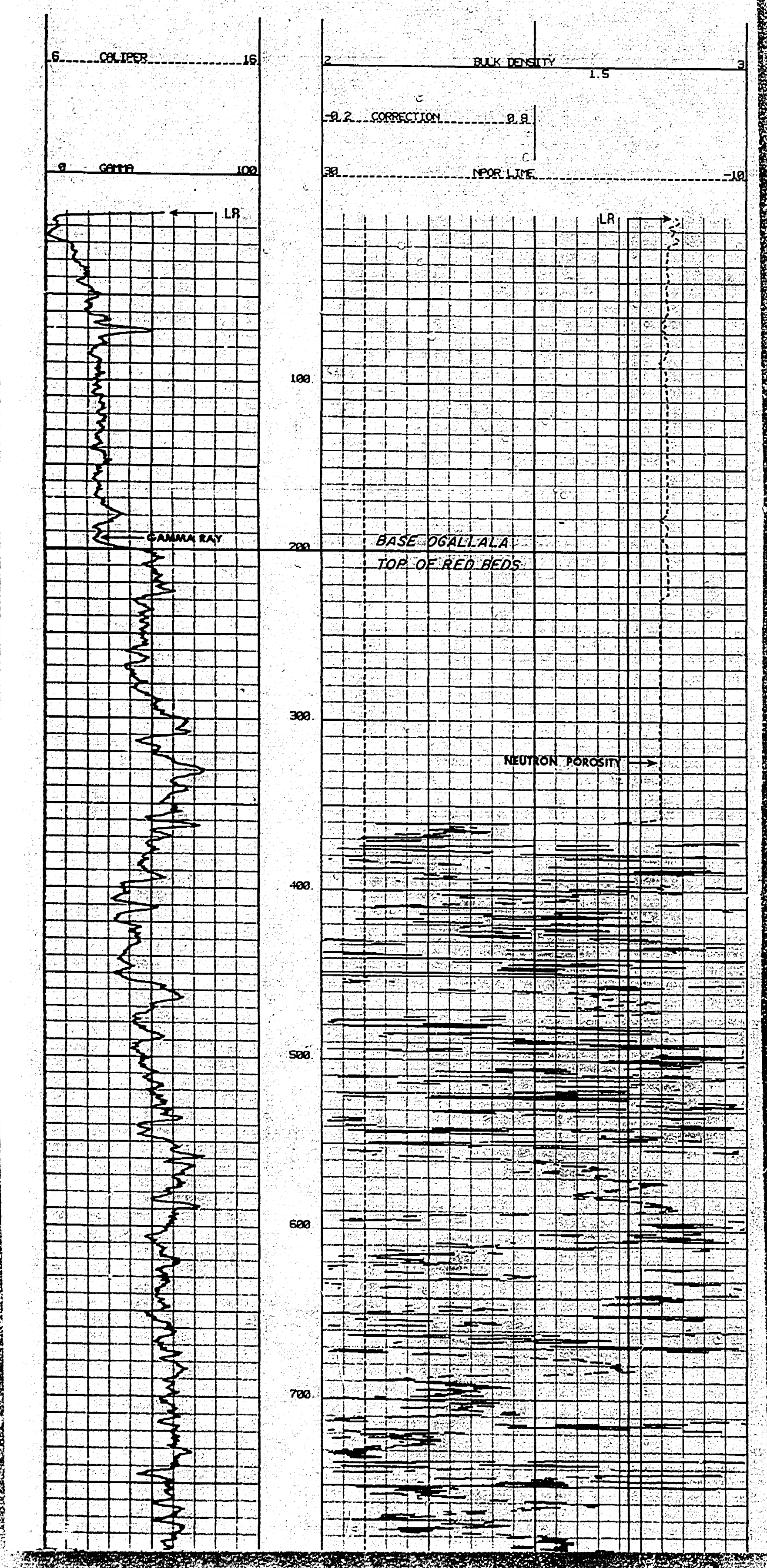
Remarks: NPOR is not cased hole corrected.

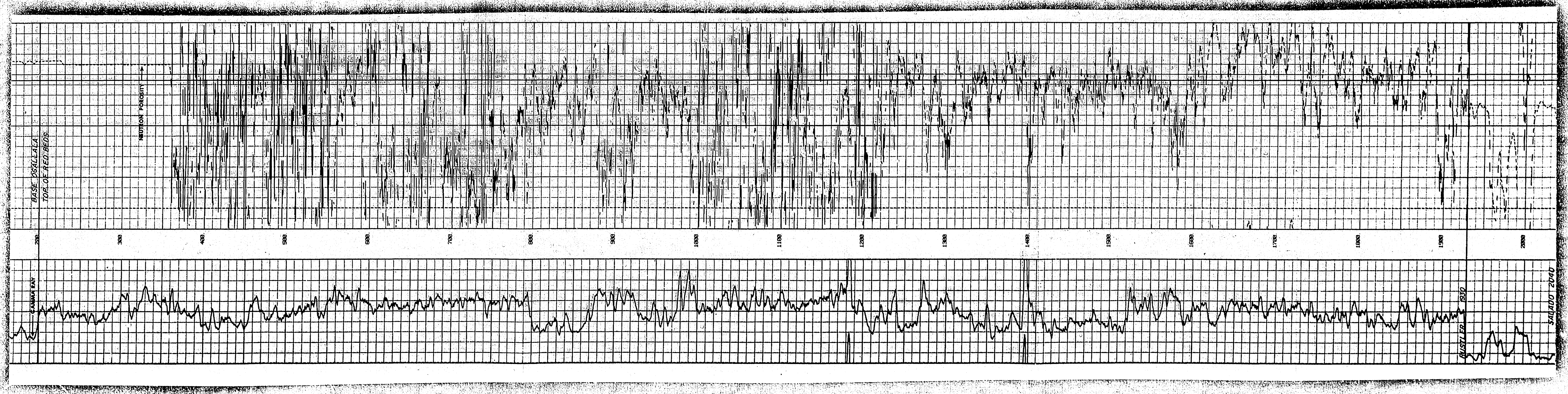
Service Ticket No. 091821

Reference Literature:

Welex does not guarantee the accuracy of any interpretation of log data, conversion of log data to physical rock parameters, or recommendations which may be given by Welex personnel or which may appear on the log or in any other form. Any user of such data, interpretations, conversions, or recommendations agrees that Welex is not responsible, except where due to gross negligence or wilful misconduct, for any loss, damages, or expenses resulting from the use thereof.

2" = 100'





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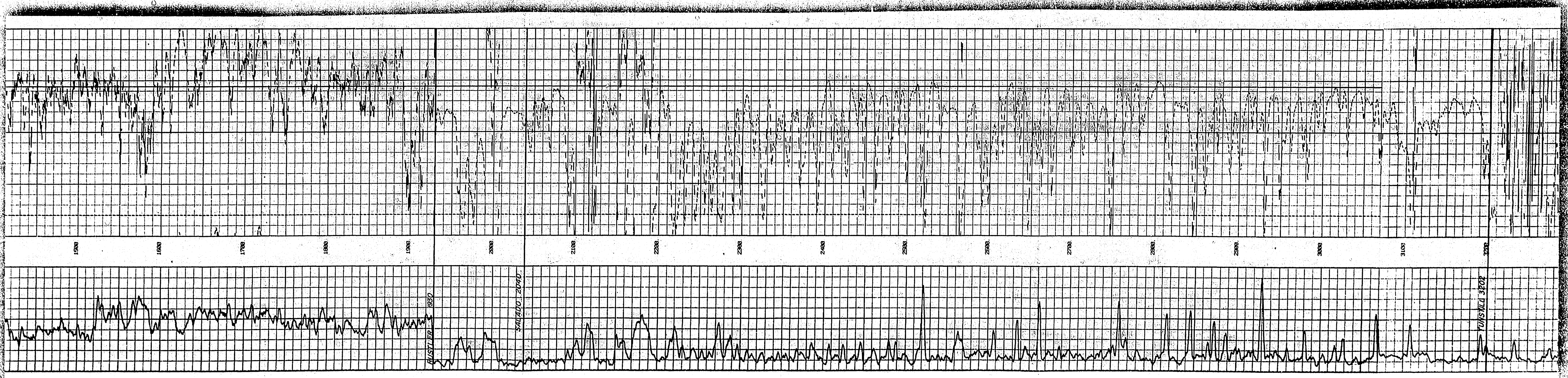

[illegible] MICROGRAPHICS

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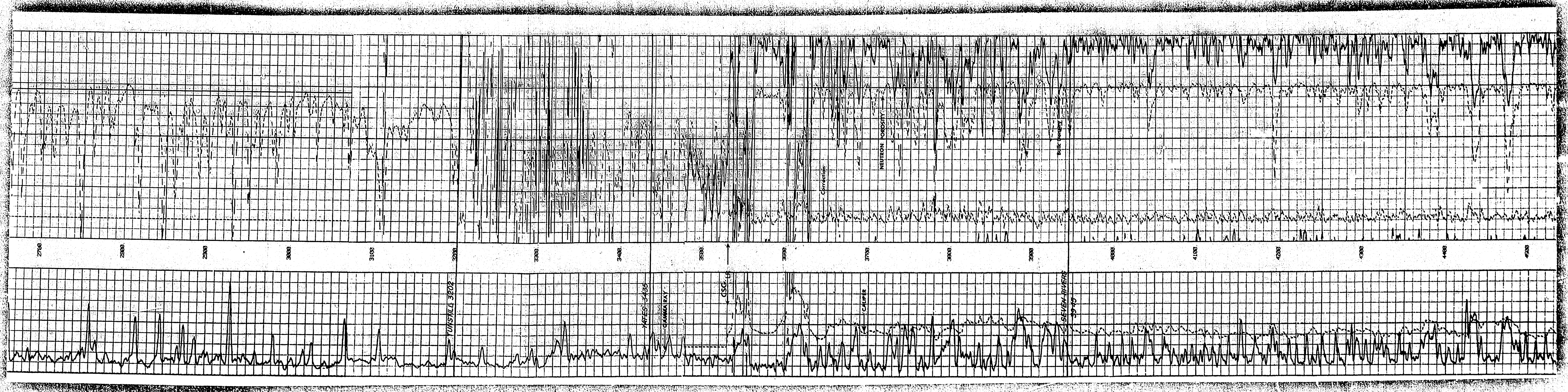
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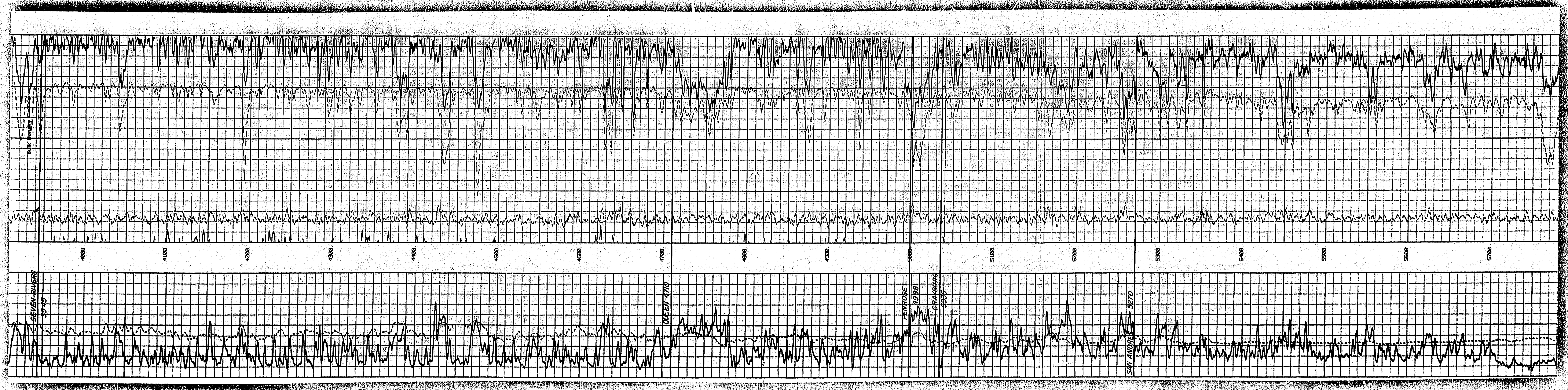
2900
3000
3100
3200
3300
3400
3500
3600
3700
3800
3900
4000
4100
4200
4300
4400
4500
Correction
NEUTRON POROSITY
Bulk Density
TUNSTILL 3202
YATES 3435
GAMMA RAY
CSG
CALIPER
SEVEN RIVERS
3945



V.E.R.C.F. MICROGRAPHICS
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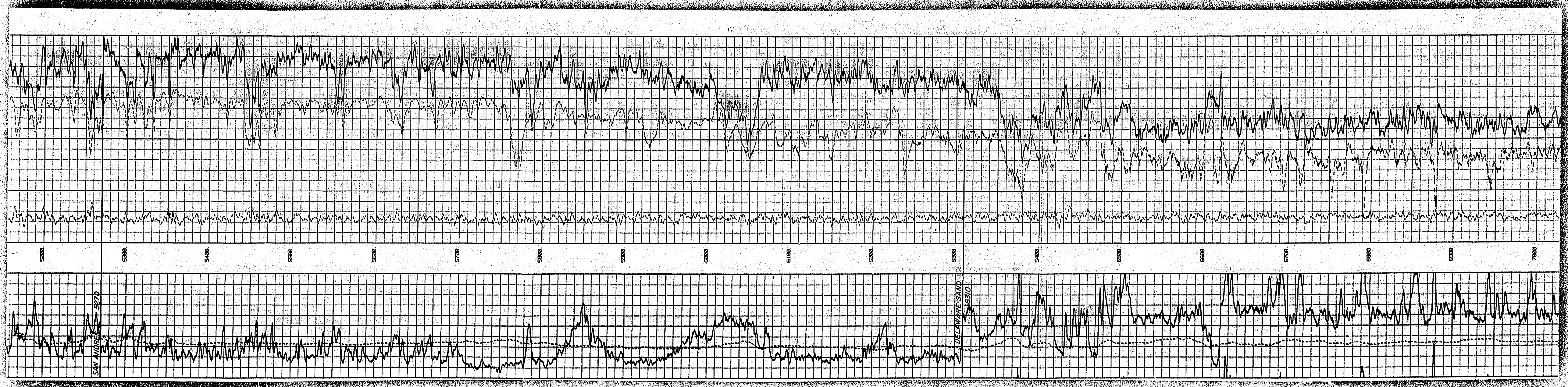

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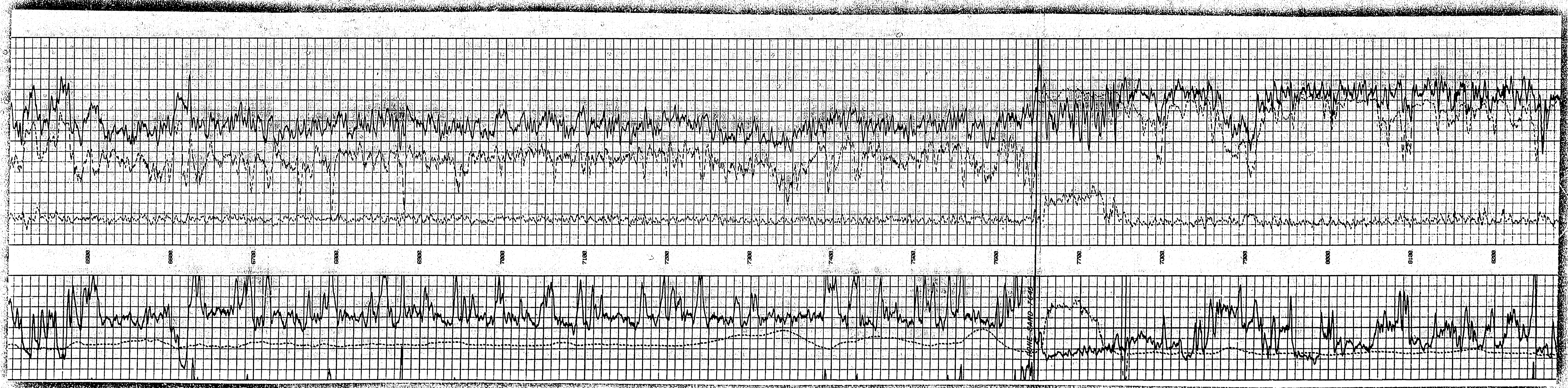

V.E.R.C.F. MICROGRAPHICS

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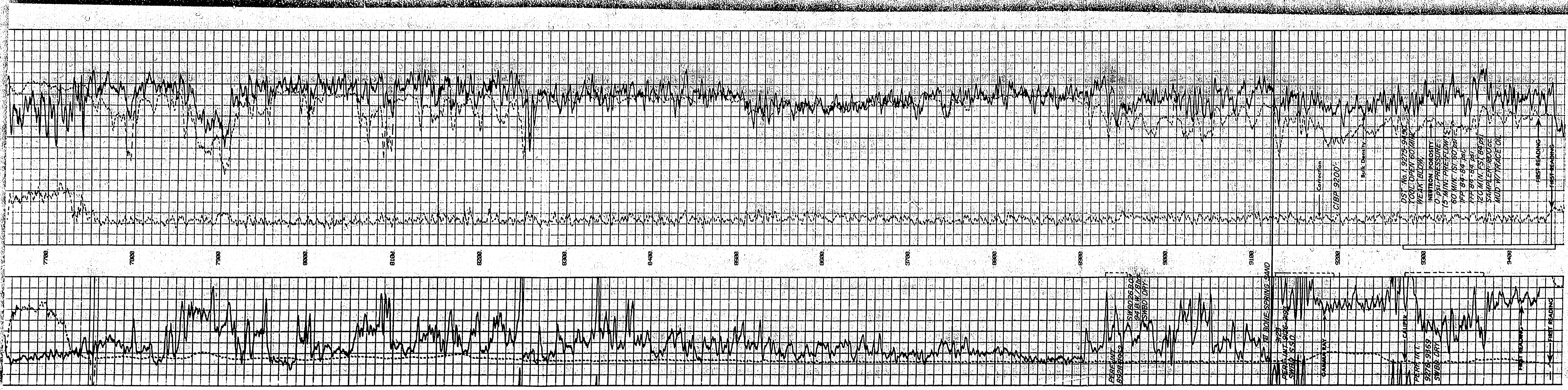
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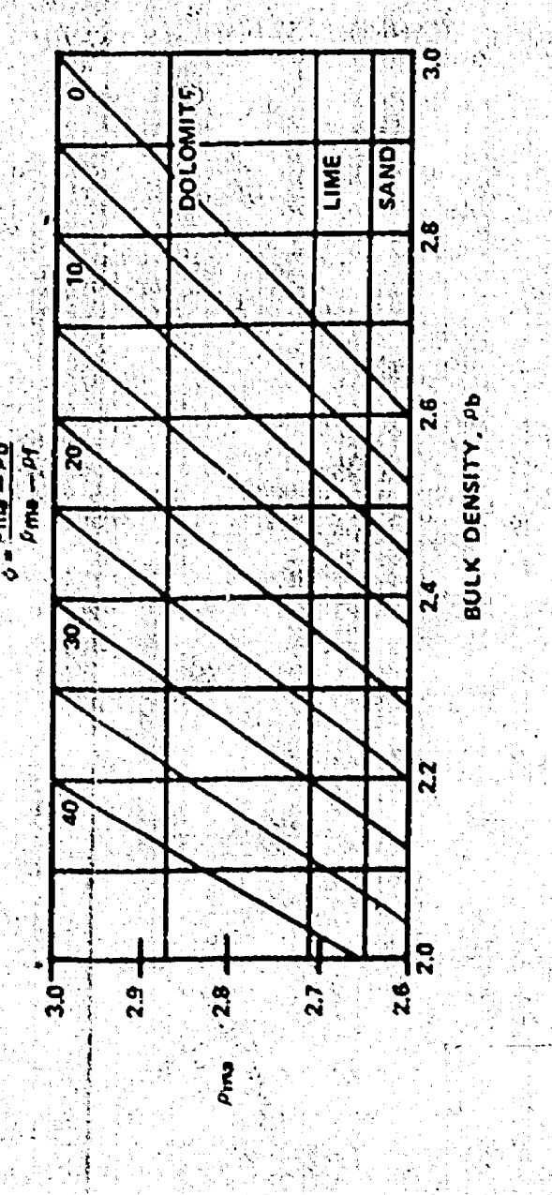
7800
7900
8000
8100
8200
8300
8400
8500
8600
8700
8800
8900
9000
9100
9200
9300
9400
PERF. INT. 8928-8952
SWBD 26 B.O. 94 B.W./8 hrs
SWBD DRY
BONE SPRING SAND
9128
PERF. INT. 9126-9193
SWBD S.S.O.
GAMMA RAY
CALIPER
PERF. INT.
9278-9369
SWBD DRY
FIRST READING
FIRST READING
Correction
CIBP 9200'
Bulk Density
DST No.1 9275-9450
TOOL OPEN 60 MIN.
WEAK BLOW
NEUTRON POROSITY
0 PSI PRESSURE
(5 MIN. PRE-FLOW)
60 MIN. ISI 60 psi
IFP 84-84 psi
FF 84-84 psi
120 MIN. FSI 84 psi
SAMPLER 1800 CC
MUD W/TRACE OIL
FIRST READING
FIRST READING


DENSITY POROSITY (ρf = 1.0)
ϕ = (ρma − ρb)/(ρma − ρf)
0
10
20
30
40
DOLOMITE
LIME
SAND
3.0
2.9
2.8
2.7
2.6
ρma
2.0
2.2
2.4
2.6
2.8
3.0
BULK DENSITY, ρb