COUNTY MARION
FIELD or LOCATION 21-5S-2W
WELL WERNER 14-21
COMPANY REICHHOLD ENERGY

Schlumberger

FOUR – ARM HIGH RESOLUTION CONTINUOUS DIPMETER
(COMPUTED)

COMPANY REICHHOLD ENERGY CORPORATION

WELL WERNER 14-21

FIELD ST. LOUIS

COUNTY MARION **STATE** OREGON

LOCATION
604.5' NORTH & 627.5' EAST FROM
THE SOUTHWEST CORNER OF:

Other Services:
DIL
BHC

Sec. 21 **Twp.** 5S **Rge.** 2W

Permanent Datum: GL, **Elev.** 178.0'
Log Measured From KB, 11.4 **Ft. Above Perm. Datum**
Drilling Measured From KB

Elev.: K.B. 189.4'
D.F. N/A
G.L. 178.0'

Date	9 OCT 82			
Run No.	1			
Depth—Driller	3354.0'			
Depth—Logger	3348.0'			
Btm. Log Interval	3340.0'			
Top Log Interval	1206.0'			
Casing—Driller	7" @ 1206'	@	@	@
Casing—Logger	1206'			
Bit Size	6¼"			
Type Fluid in Hole	LIGNOSULFO- NATE			
Dens. | Visc.	9.4 | 52.0			
pH | Fluid Loss	9.5 | 4.6 ml	ml	ml	ml
Source of Sample	CIRCULATION			
R_m @ Meas. Temp.	2.05 @ 80 °F	@ °F	@ °F	@ °F
R_{mf} @ Meas. Temp.	3.06 @ 58 °F	@ °F	@ °F	@ °F
R_{mc} @ Meas. Temp.	1.77 @ 62 °F	@ °F	@ °F	@ °F
Source: R_{mf} | R_{mc}	M | M			
R_m @ BHT	1.68 @ 99 °F	@ °F	@ °F	@ °F
Time Since Circ.	0700			
Max. Rec. Temp.	99 °F	°F	°F	°F
Equip. | Location	8216 | SAC			
Recorded By	ANDERSEN			
Witnessed By	BRUER			

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

Changes in Mud Type or Additional Samples N/A		
Date | 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	@ °F	@ °F
R_{mf} @ BHT	@ °F	@ °F
R_{mc} @ BHT	@ °F	@ °F

Run No.	1	2	3	4
Tool Type	HDS-D			
HDM No.	1726			
Magnetic Declination	20° E			
Analog Panel No.	-			
Digital Panel No.	1891			
Correlated By	PCDCC			
Computed By	PCDCC			
Plotted By	PCDCC			

Remarks — SERVICE ORDER NO. 205819.

"Any directional computations made from the dipmeter log must be regarded as approximate only. This is because the dipmeter log indicates the orientation of the instrument itself, rather than the direction and amount of the wall drift. Therefore, we do not and cannot guarantee the accuracy of such directional computations, and we shall not, except in the case of willful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained that may result from any such computations."

TABLE OF VERTICAL DISPLACEMENT IN FEET CORRESPONDING TO VARIOUS HORIZONTAL DISTANCES AND ANGLES OF DIP

VERTICAL DISPLACEMENT FOR HORIZONTAL DISTANCES OF	VERTICAL DISPLACEMENT FOR HORIZONTAL DISTANCES OF

DIP ANGLES (degrees)	100′	1000′	1 mile (5280′)	DIP ANGLES (degrees)	100′	1000′	1 mile (5280′)
1	1.75	17.5	92.2	19	34.4	344.	1818.
2	3.5	35.	184.	20	36.4	364.	1922.
3	5.2	52.	277.	21	38.4	384.	2027.
4	7.0	70.	369.	22	40.4	404.	2133.
5	8.8	88.	462.	23	42.5	425.	2241.
6	10.5	105.	555.	24	44.5	445.	2351.
7	12.3	123.	648.	25	46.6	466.	2462.
8	14.1	141.	742.	30	57.7	577.	3048.
9	15.8	158.	836.	35	70.0	700.	3697.
10	17.6	176.	931.	40	83.9	839.	4430.
11	19.4	194.	1026.	45	100.0	1000.	5280.
12	21.3	213.	1122.	50	119.2	1192.	6293.
13	23.1	231.	1219.	55	142.8	1428.	7540.
14	24.9	249.	1316.	60	173.2	1732.	9145.
15	26.8	268.	1415.	65	214.4	2144.	11323.
16	28.7	287.	1514.	70	274.8	2748.	14507.
17	30.6	306.	1614.	75	373.2	3732.	19705.
18	32.5	325.	1716.	80	567.1	5671.	29945.

To obtain vertical displacements corresponding to multiples of hundreds feet, thousands of feet or miles, multiply the number found in the table by the number of hundreds, thousands or miles.

Example: The formation dip is 16 degrees. The vertical displacement occurring at a spot 660 feet away from the well is desired. The table shows 28.7 feet per 100 feet for 16° dip. Therefore 28.7 x 6.60 = 189.42, or 189. feet.

N

GRAPHIC PRESENTATION

CORRELATION CURVE	DEPTHS	TRUE DIP ANGLE AND DIRECTION	DRIFT & DIRECTION OF SONDE
		0° 10° 20° 30° 40° 50° 60° 70° 80° 90°	0°

REICHOLD ENERGY CORP.
WERNER 14-21
ST. LOUIS FIELD
MARION COUNTY.OREGON
RUN NO. ONE 09-OCT-82
P.C.C.C.

ARROW PLOT FROM CLUSTER PROGRAM

CORRELATION LENGTH 4 FT.
STEP LENGTH 2 FT.
SEARCH ANGLE 30 DEGREES X2
HDT-G CSU VAX 11/780

JOB 6775 00

POOLED ARROW PLOT

2 LEVELS POOLED WHEN WITHIN

3.5 DEGREES SOLID ANGLE

BLACK ARROWS ARE POOLED RESULTS

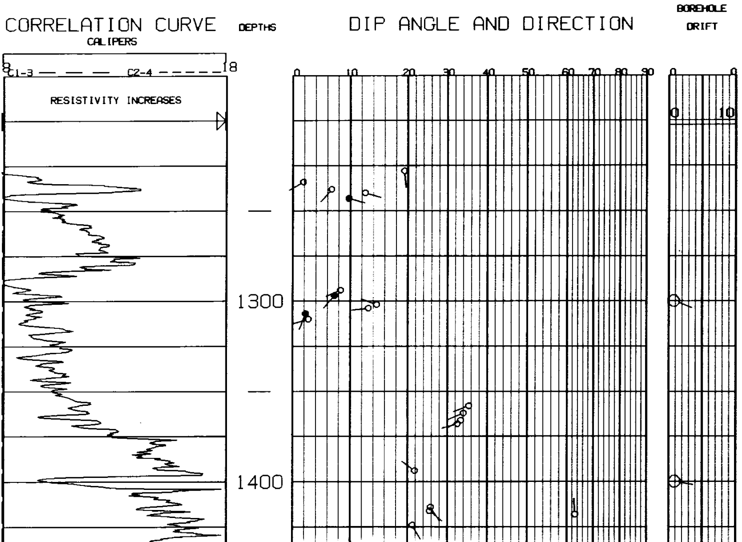
CORRELATION LENGTH 4 FT.

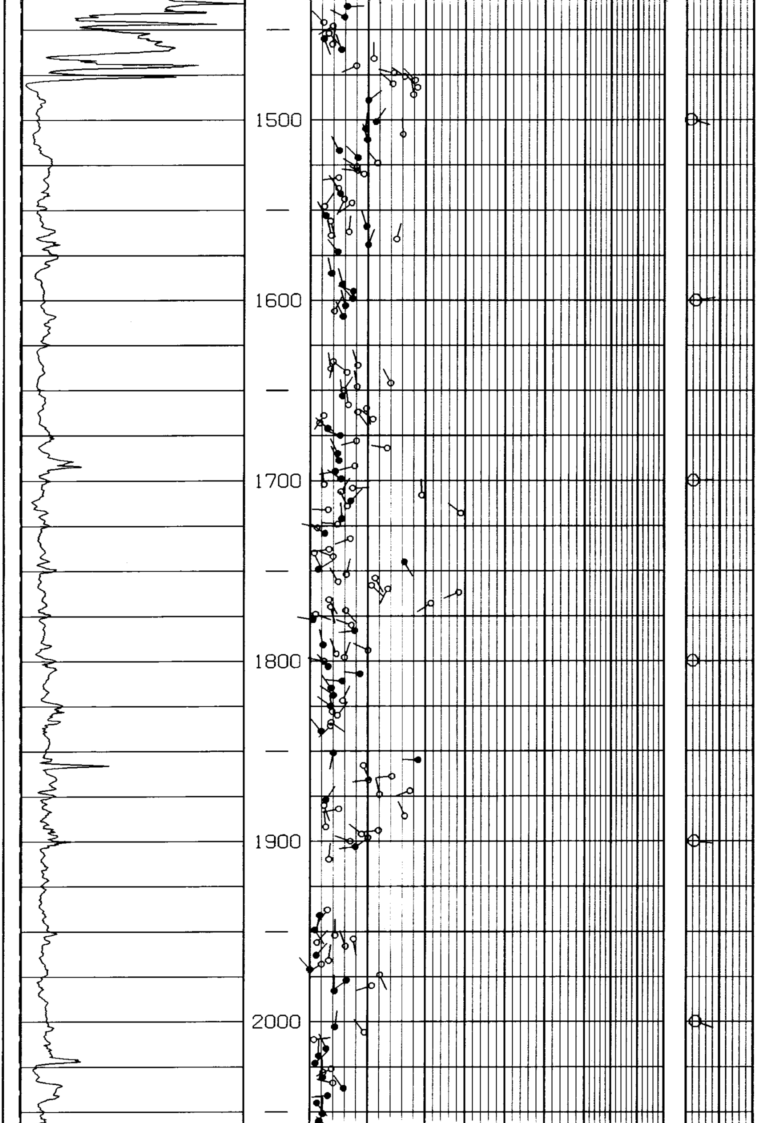
STEP LENGTH 2 FT.

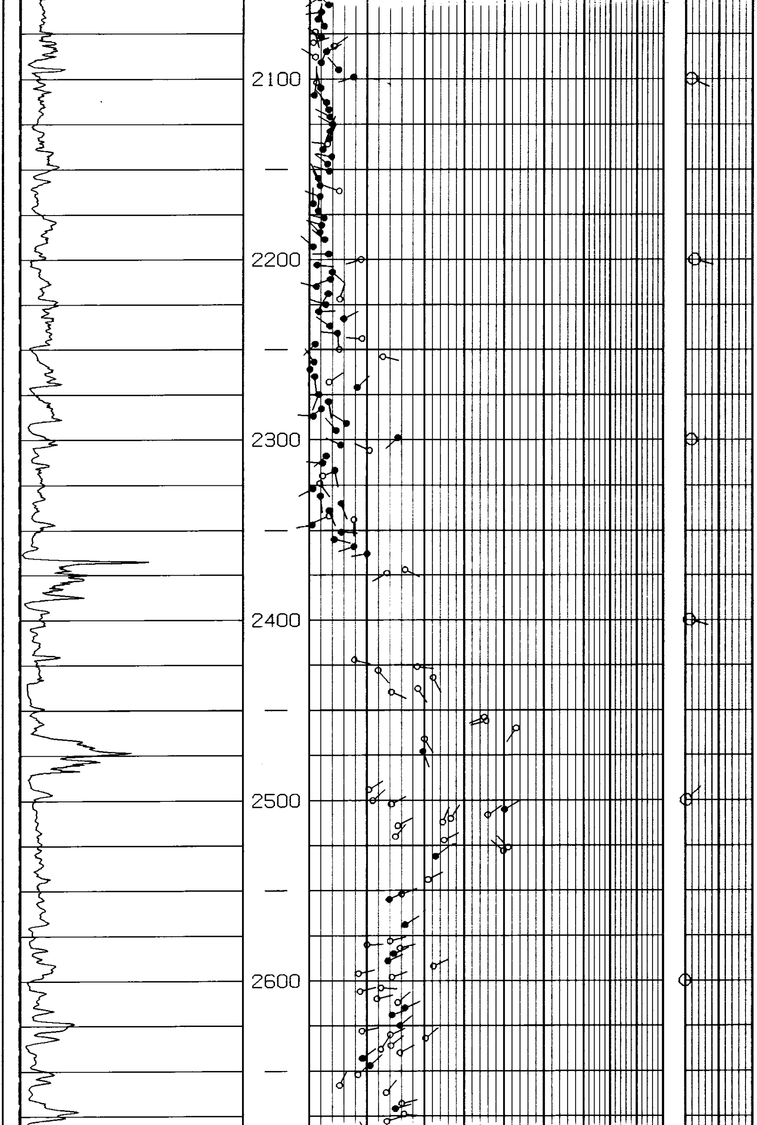
SEARCH ANGLE 30 DEGREES X2

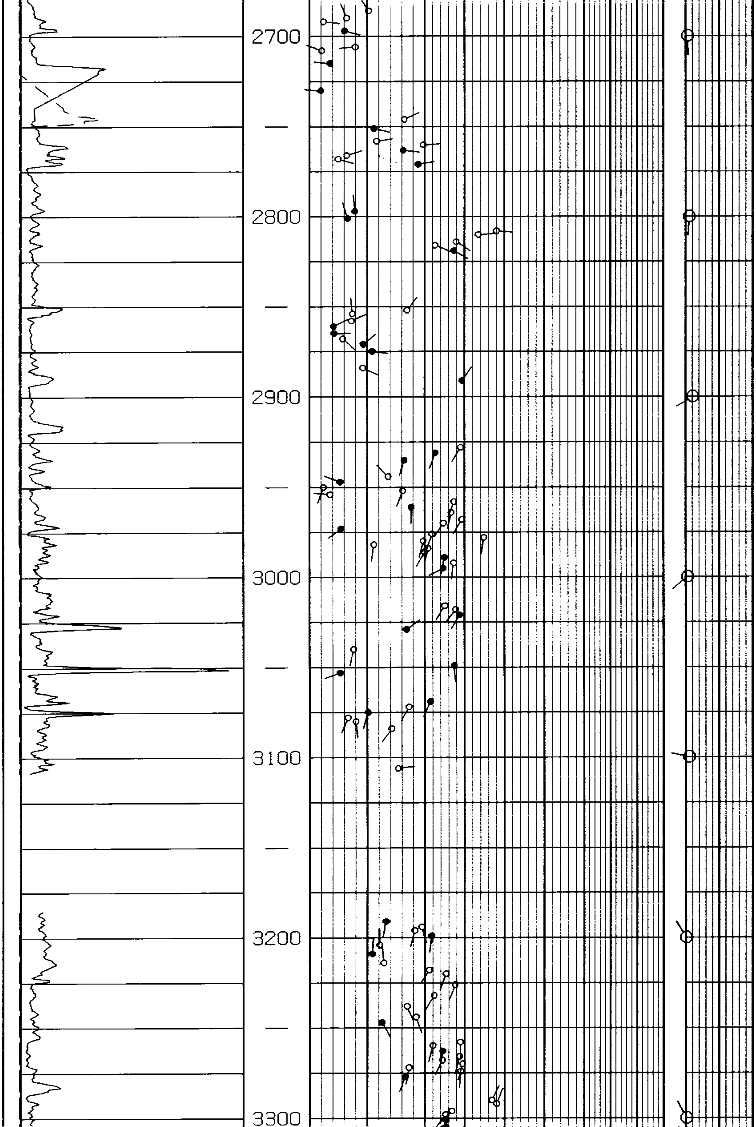
PC0130023518307001020420

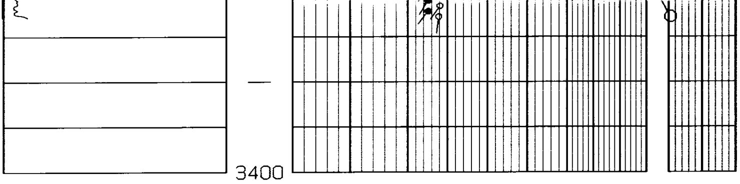
ZONE FROM 1228 TO 3314











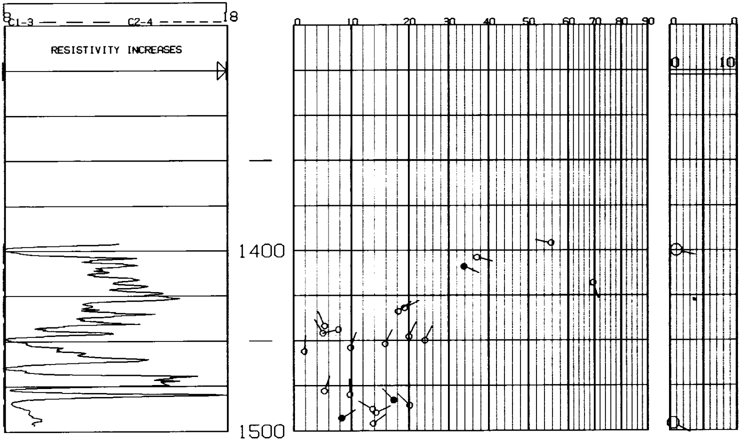
ZONE FROM 1396 TO 1496

CORRELATION CURVE

DEPTHS

DIP ANGLE AND DIRECTION

BOREHOLE DRIFT



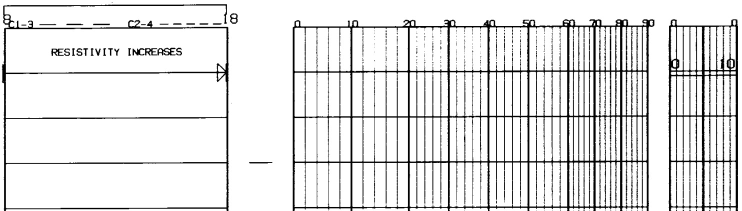
ZONE FROM 1488 TO 1807

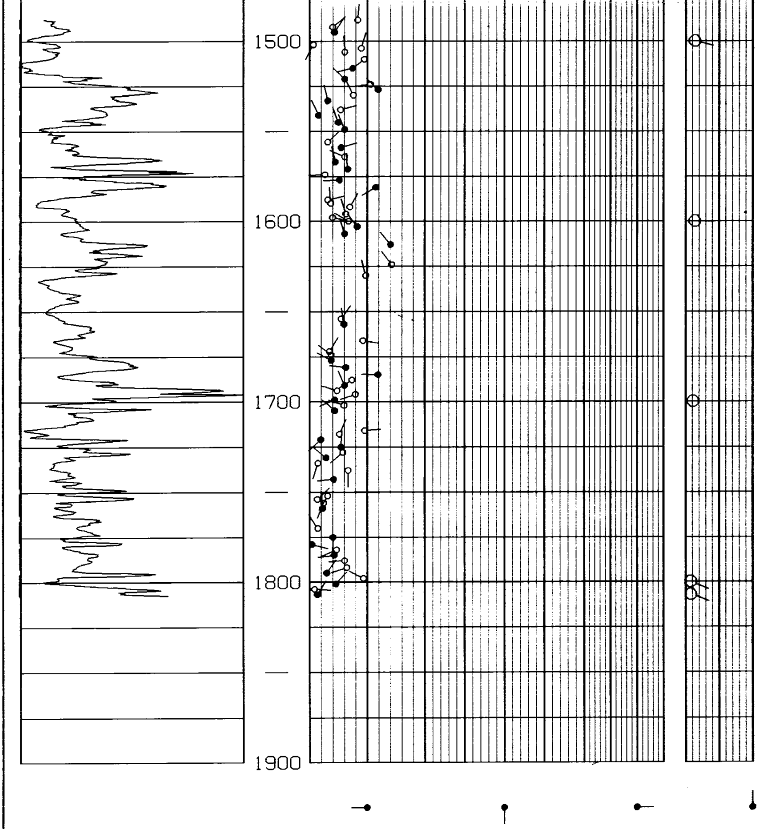
CORRELATION CURVE

DEPTHS

DIP ANGLE AND DIRECTION

BOREHOLE DRIFT





14-OCT-1982 12:17:53.47 USER: 6775

14-OCT-1982 12:17:53.47 USER: 6775

JOB 6775.00

ALL QUALITY ARROW PLOT 6775

FROM THE CLUSTER PROGRAM

BLACK ARROWS ARE HIGHEST QUALITY

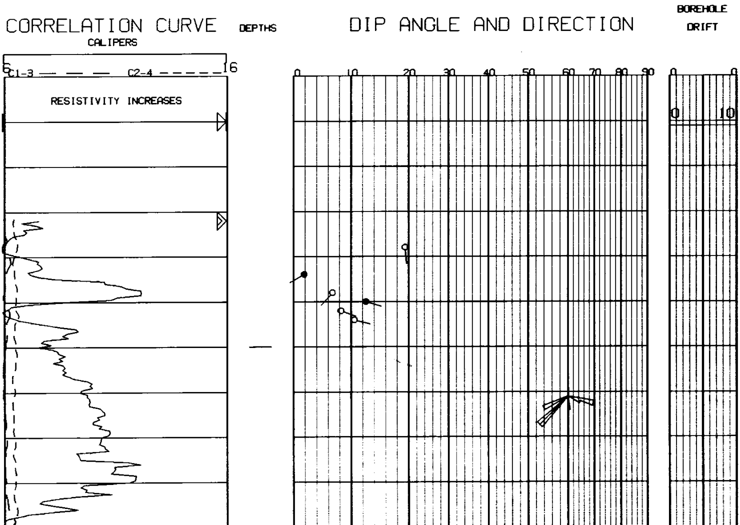
CORRELATION LENGTH 4 FT.

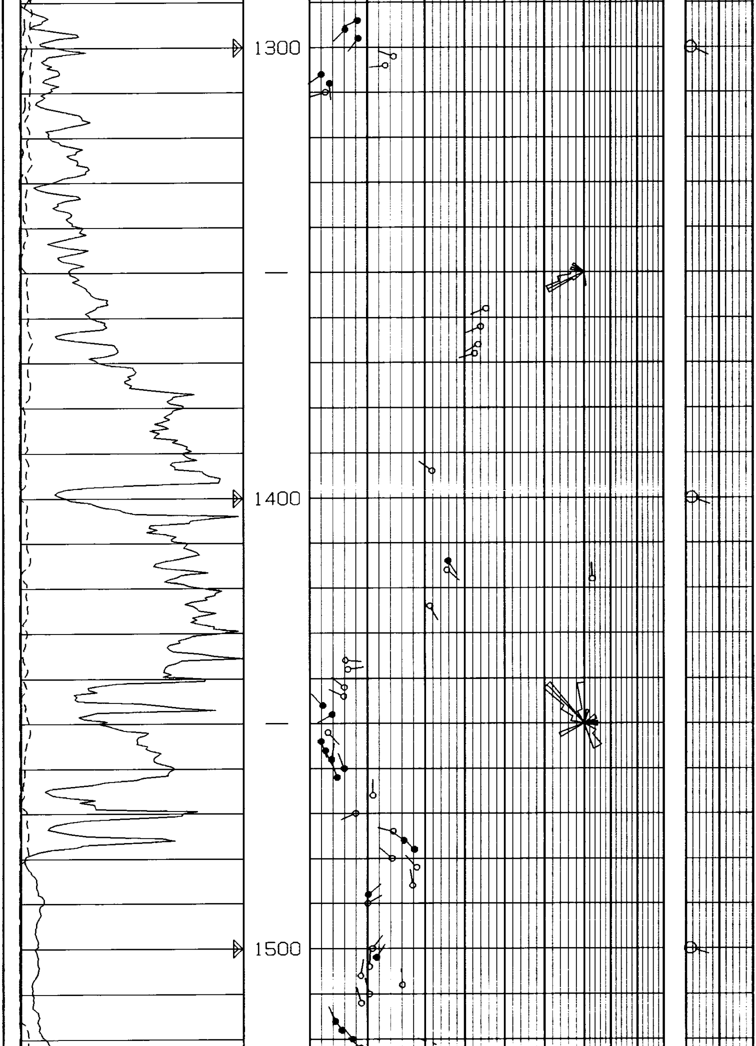
STEP LENGTH 2 FT.

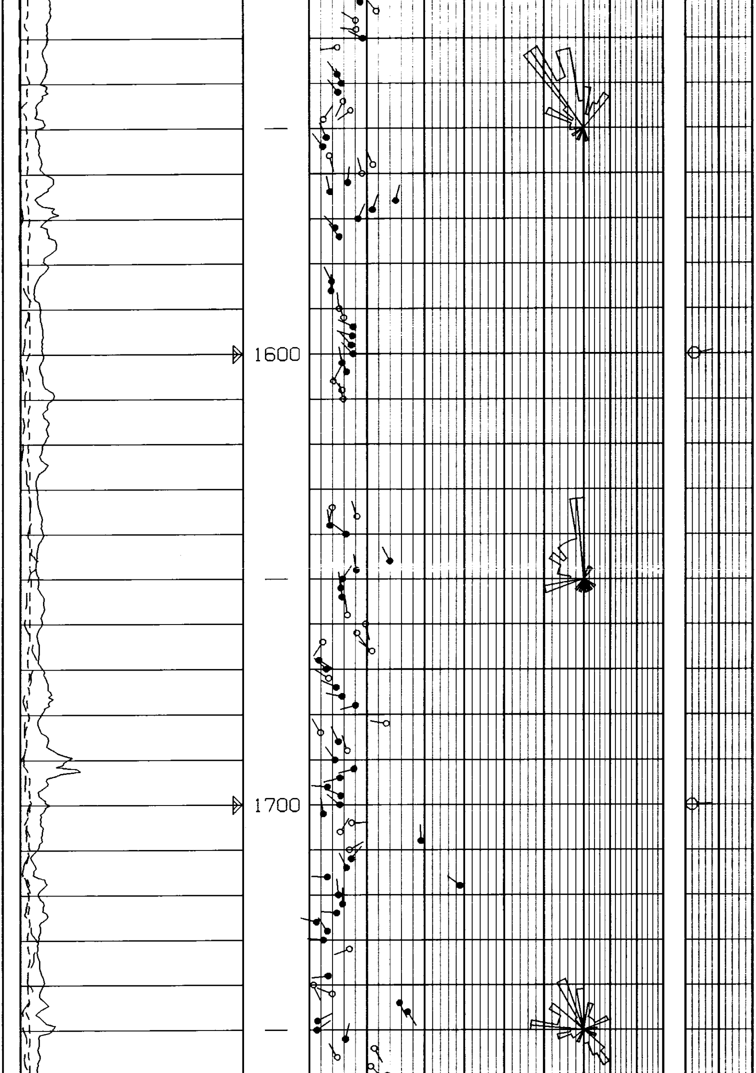
SEARCH ANGLE 30 DEGREES X2

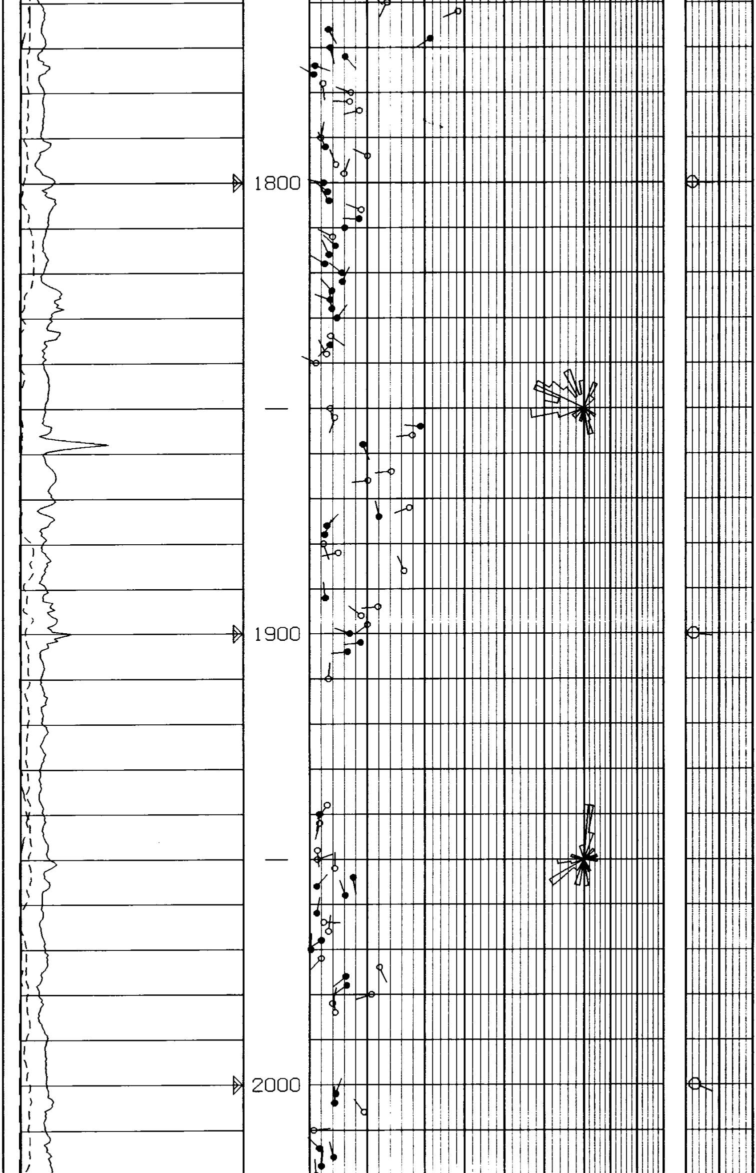
PC0130023518307001020420

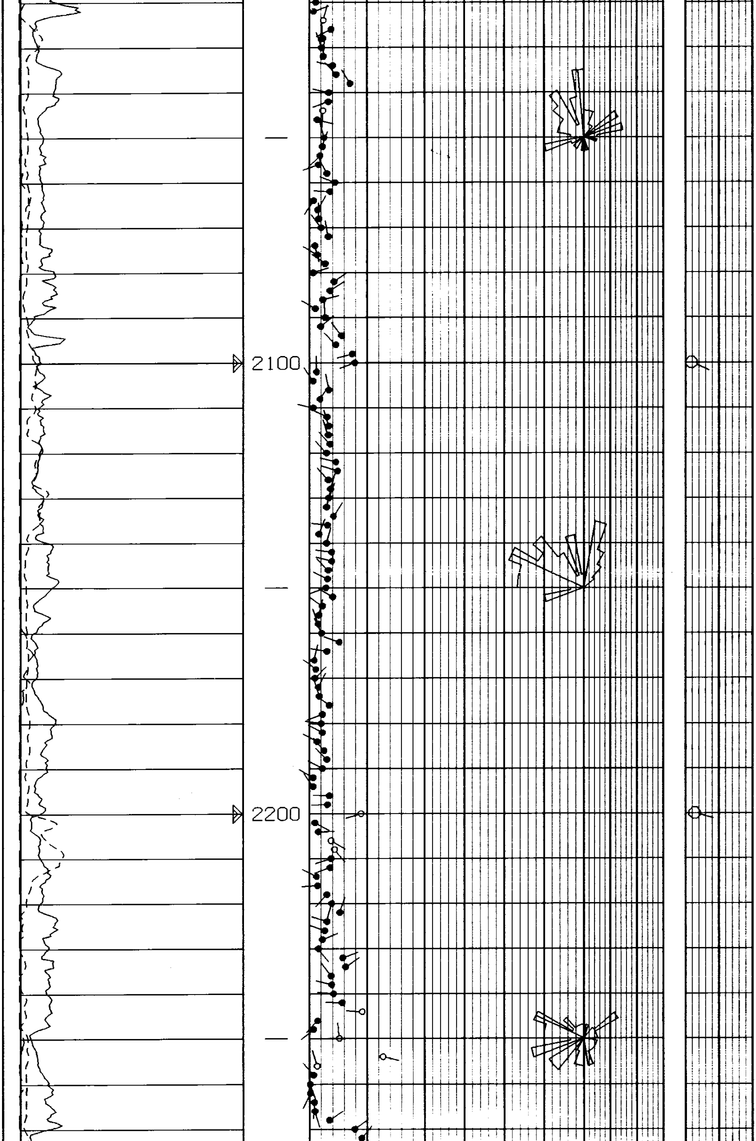
ZONE FROM 1222 TO 3334

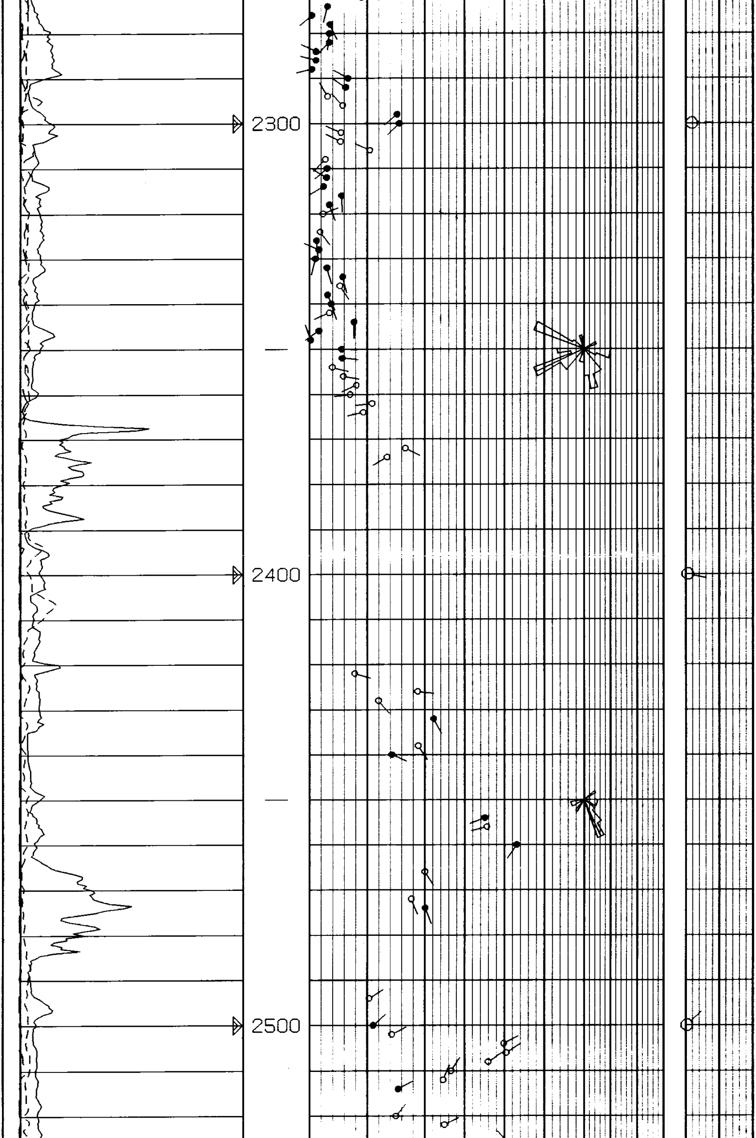


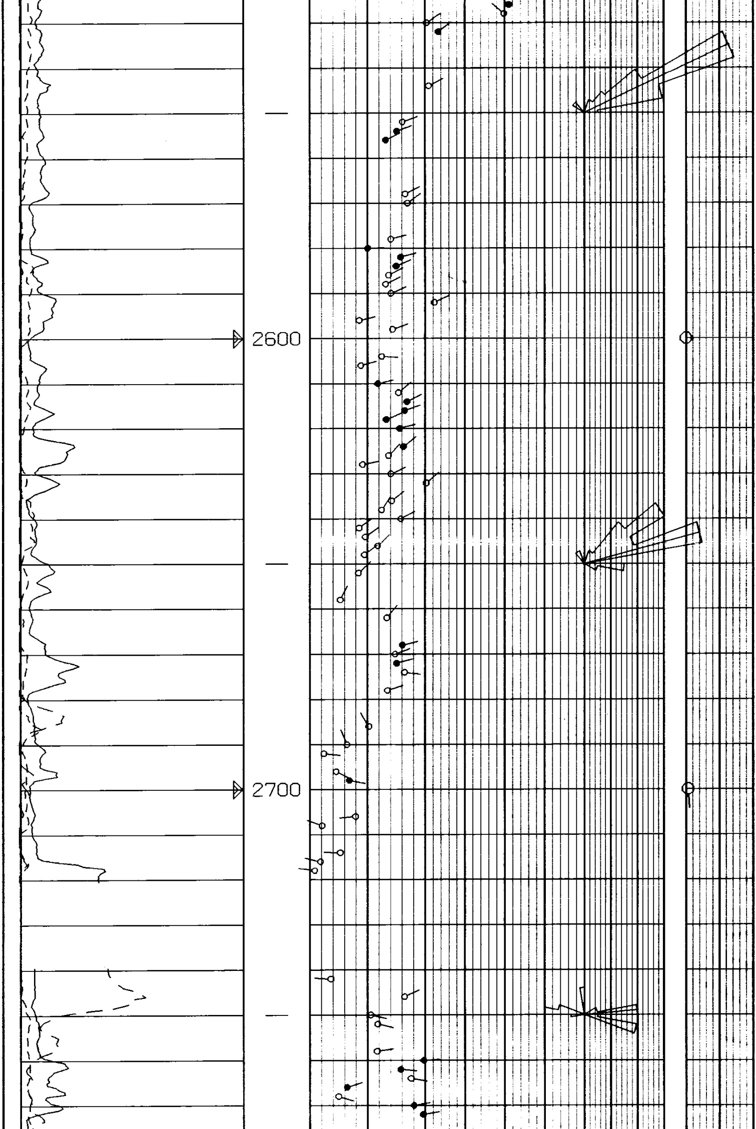


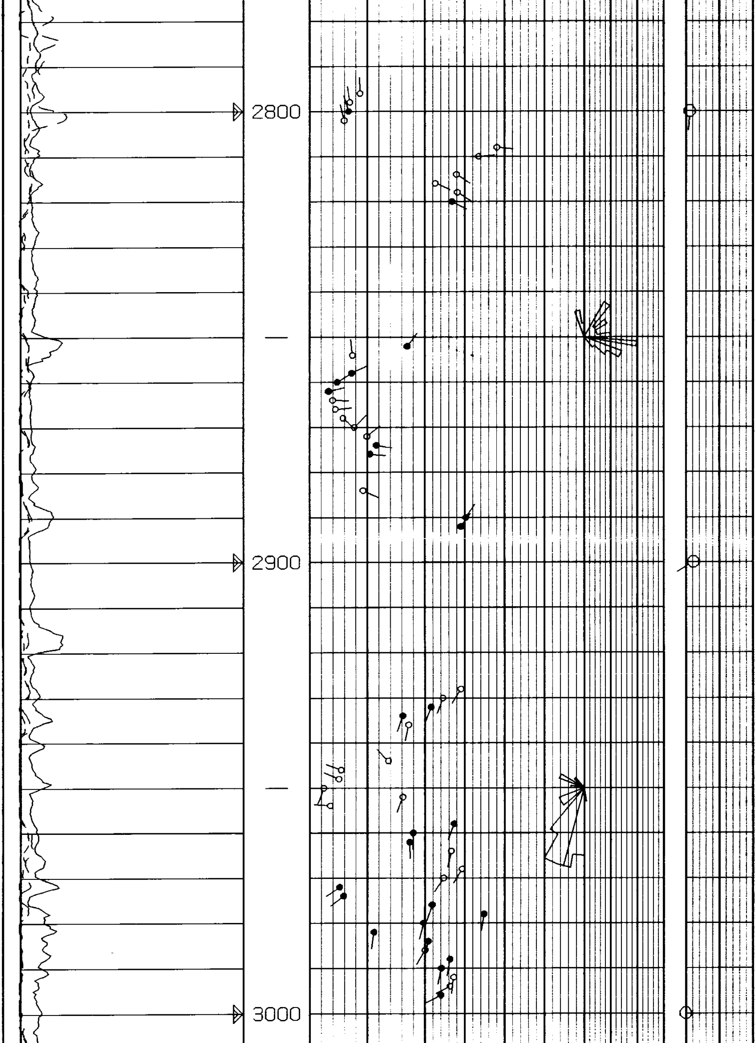


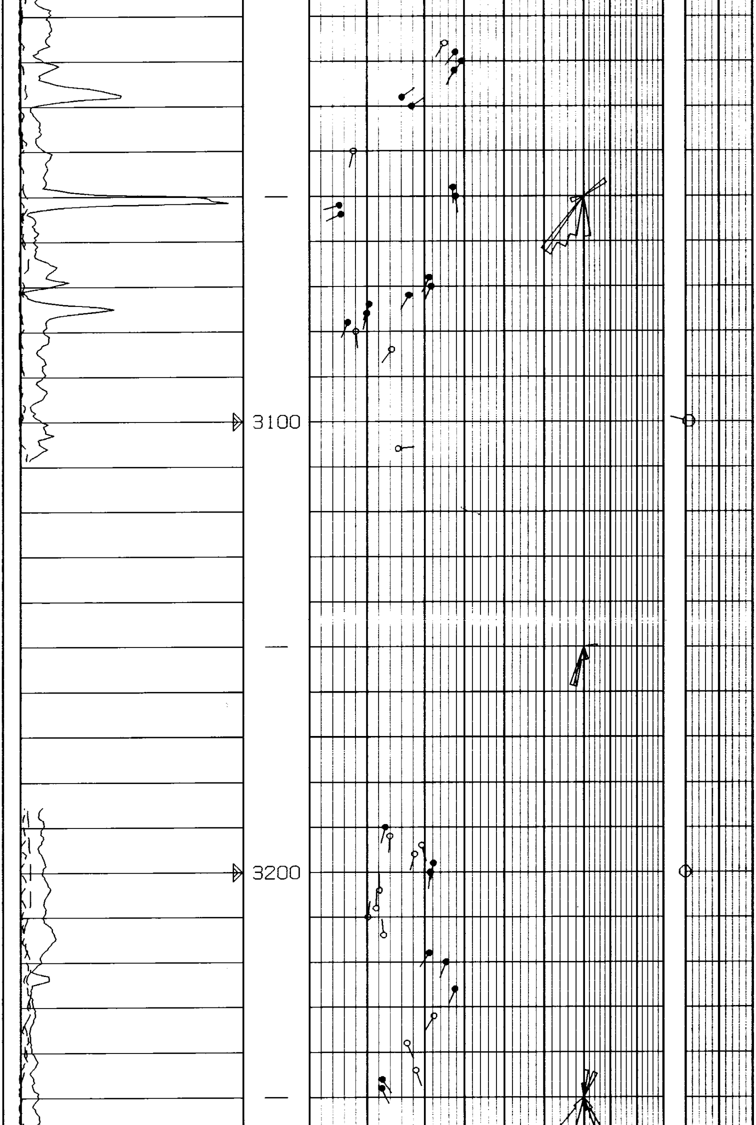


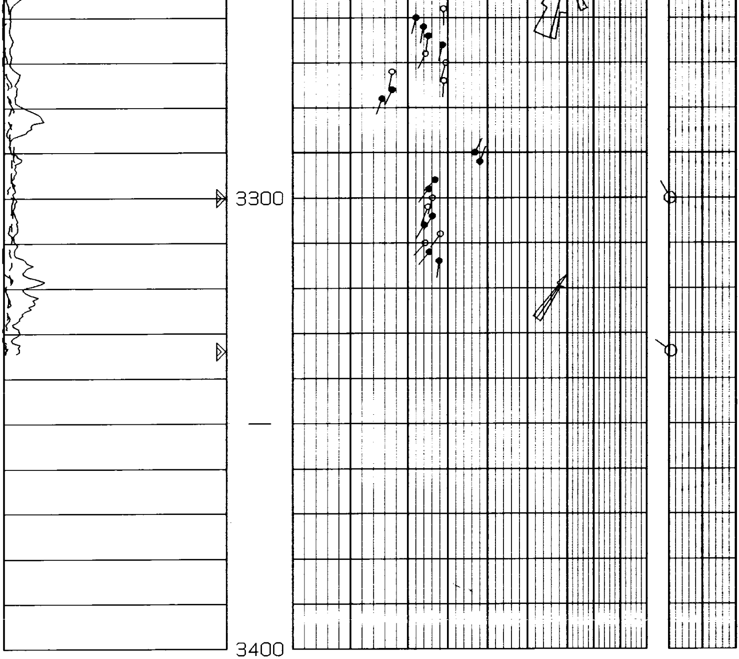












ZONE FROM 1374 TO 1496

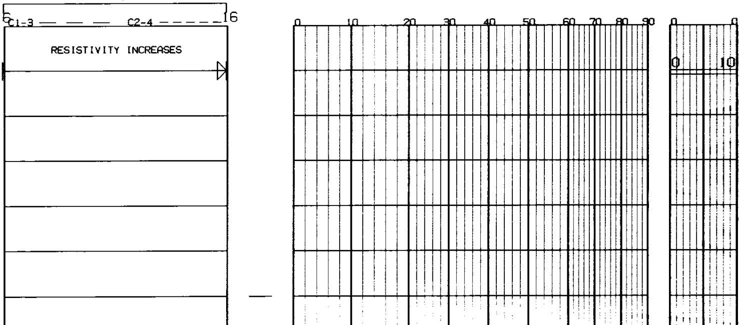
CORRELATION CURVE

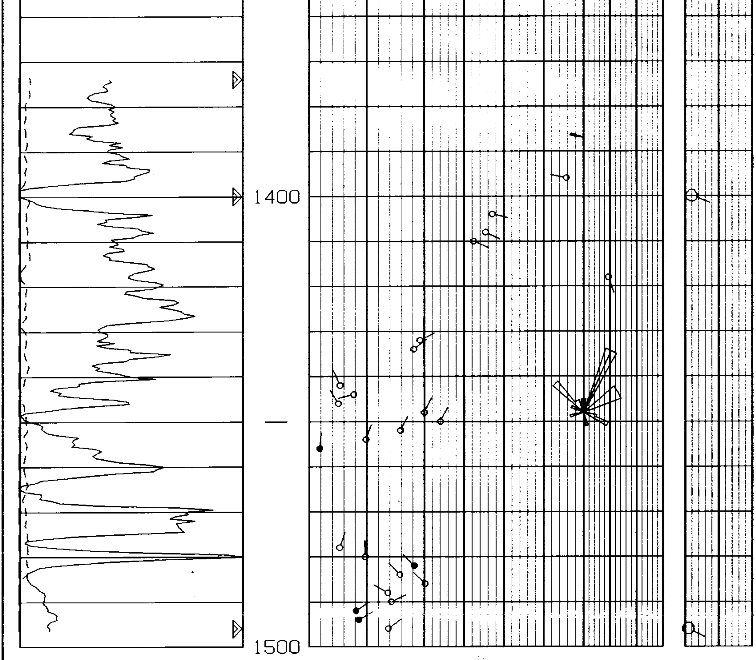
CALIPERS

DEPTHS

DIP ANGLE AND DIRECTION

BOREHOLE DRIFT





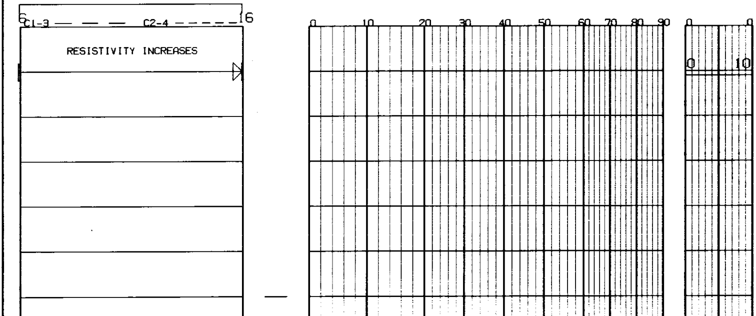
ZONE FROM 1472 TO 1808

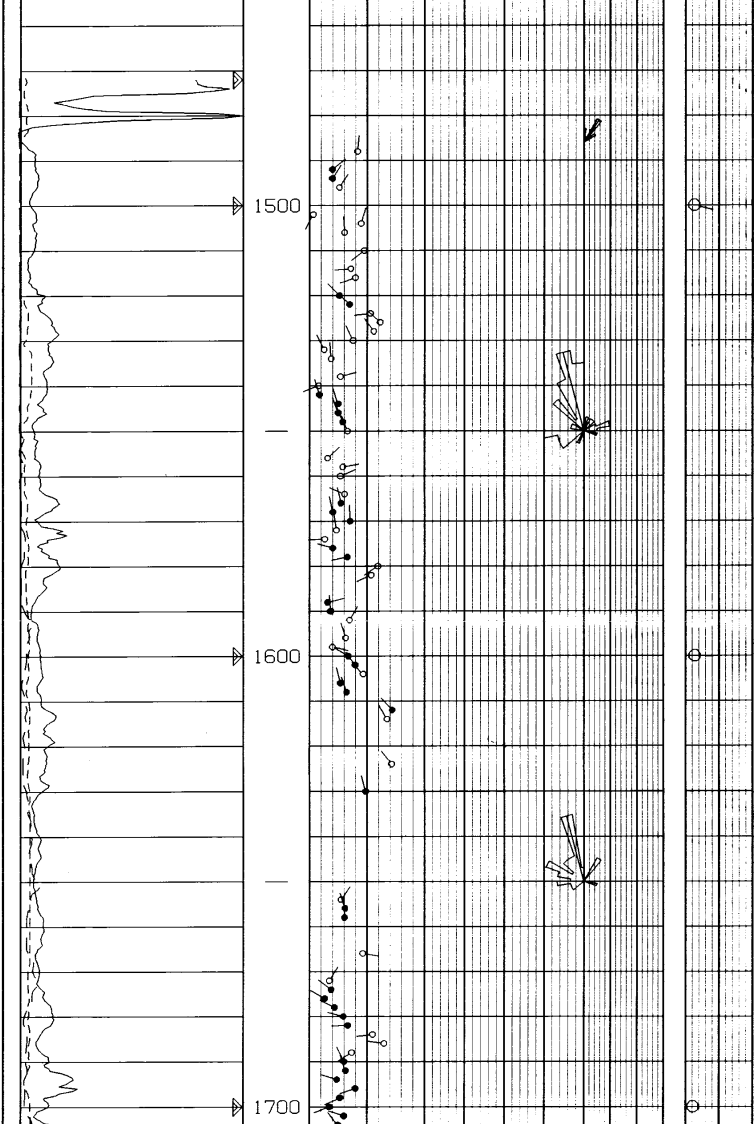
CORRELATION CURVE
CALIPERS

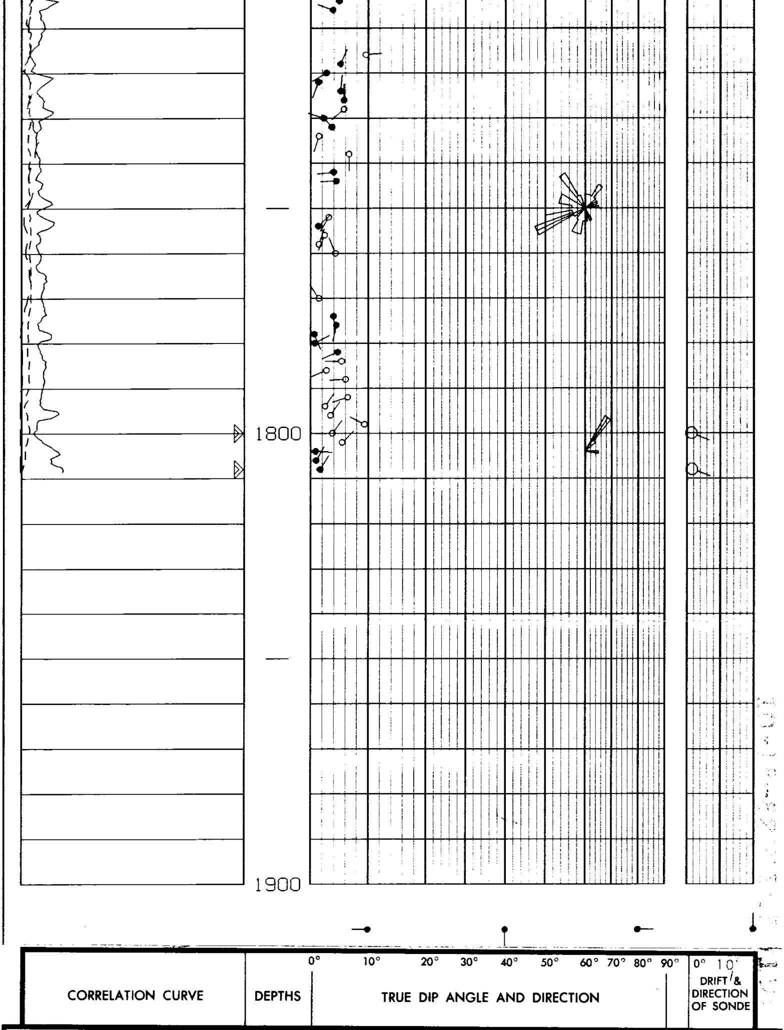
DEPTHS

DIP ANGLE AND DIRECTION

BOREHOLE
DRIFT







COMPANY REICHHOLD ENERGY CORPORATION

WELL WERNER 14-21

FIELD ST. LOUIS

COUNTY MARION **STATE** OREGON

Rm 2.050 @ 80 °F
Rmf 3.060 @ 58 °F
Rmc 1.77 @ 62 °F
BHT 99 °F

SCHL. FR 3340.0'
SCHL. TD 3348.0'
DRLR TD 3354.0'
Elev:
KB 189.4'
DF N/A
GL 178.0'