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Denne rapport
tilhører

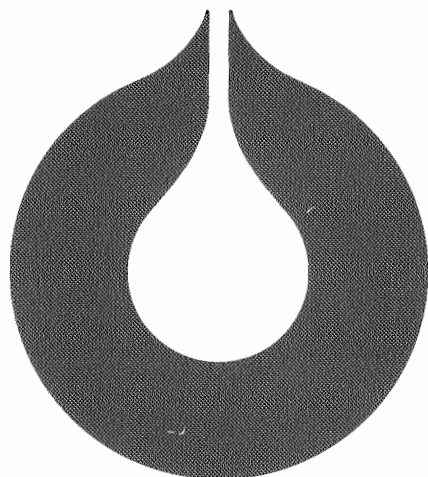


UND DOK.SENTER

L.NR. 20084060061

KODE Well 30/3-3 nr 14

Returneres etter bruk



statoil



statoil
Den norske stats
oljeselskap a.s

Gradering

Laget av

Operation Technology, LET-Bergen

Undertittel

Tittel

PETROPHYSICAL EVALUATION

WELL 30/3-3

NOVEMBER 1983

Utarbeidet

Nov. -83 H. Buvik

Godkjent

2 3 4

Jon H. Buvik



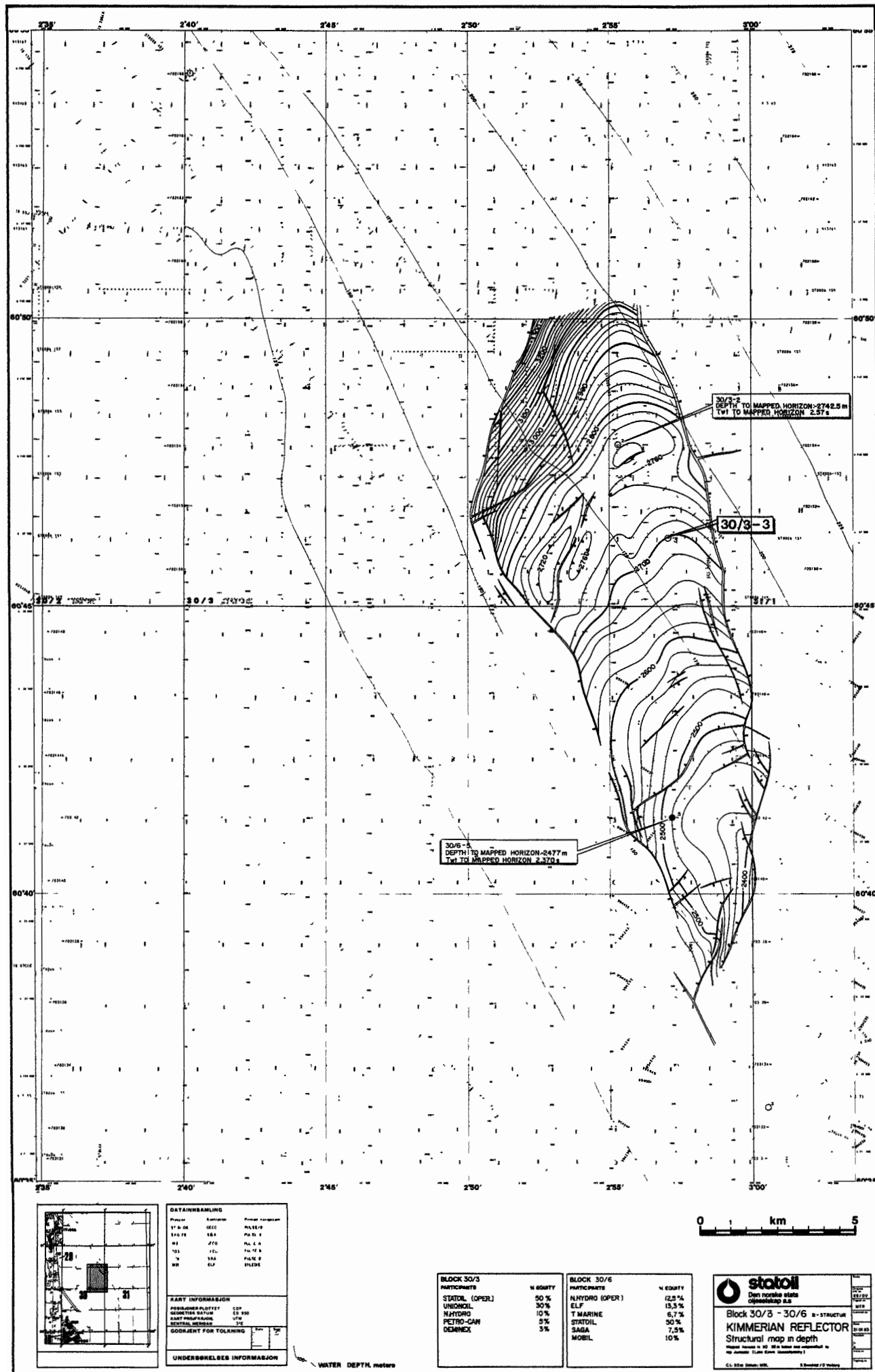
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WELL DATA

Operator:	Statoil
Well:	30/3-3
Location:	60° 46' 11.44" N 02° 57' 05.58" E
Classification	Exploration Well
Drilling rig:	Ross Isle
Spudded:	02.04.83
Rig released:	31.05.83
KB-elevation:	22.0 m
Water depth:	182 m
Total depth:	
Drillers depth:	3419 mRKB
Slumberger depth:	3425 mRKB
Objective:	Middle and Lower Jurassic Sandstones

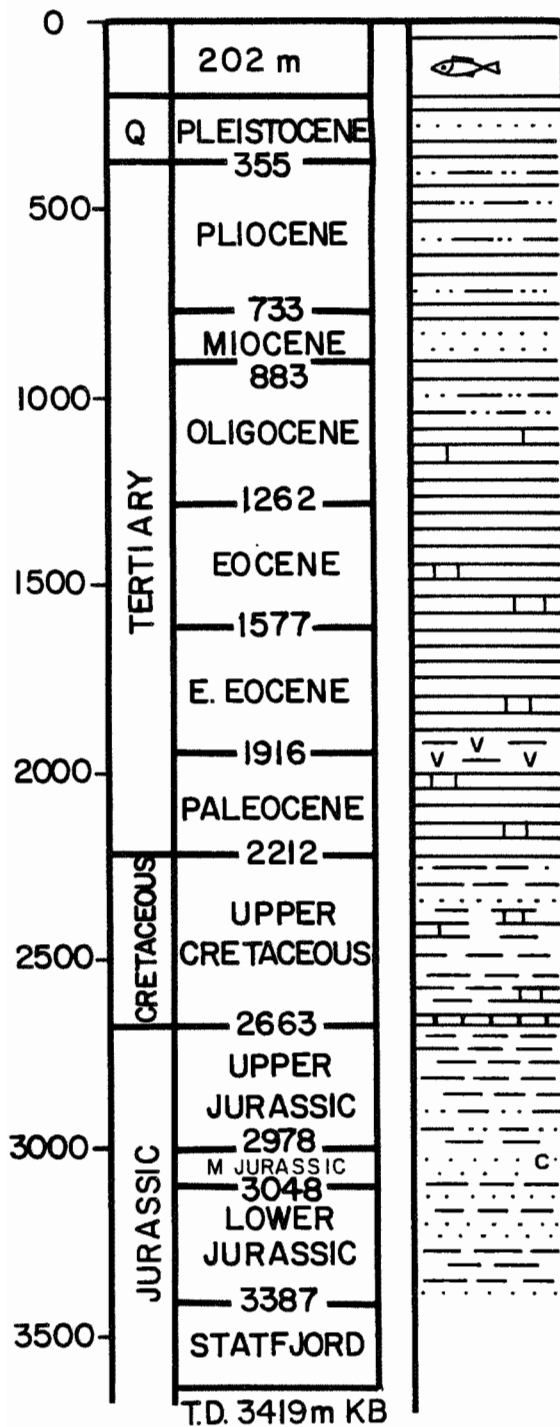




INTRODUCTION

The well 30/3-3 was drilled in a down faulted block between the wells 30/6-5 and 30/3-2. The well was considered dry. The purpose of this "quick-look" analysis is to define the petrophysical parameters of the Drake and Brent Group and to look for hydrocarbons. Since Statfjord was considered dry and just partly penetrated, (32 m), no analysis was performed.

30/3 - 3





LITHOLOGY

The Brent Group (2978 m - 3048 mKB)

Ness Formation (2978 - 3034 mKB)

The Ness Formation consists predominantly of sandstones with beds of shale and coal. The sandstone is light to medium grey, very fine to medium grained, mostly friable, angular to subrounded with a fair visible porosity. The shale is micaceous, carbonaceous and none to slightly calcareous. The coal is black, hard, brittle and shiny.

The Etive Formation (3034 - 3048 mKB)

The Etive Formation consists of sandstone which is clear to transparent quartz, fine to medium grained, occasionally coarse, subrounded to subangular loose and friable.

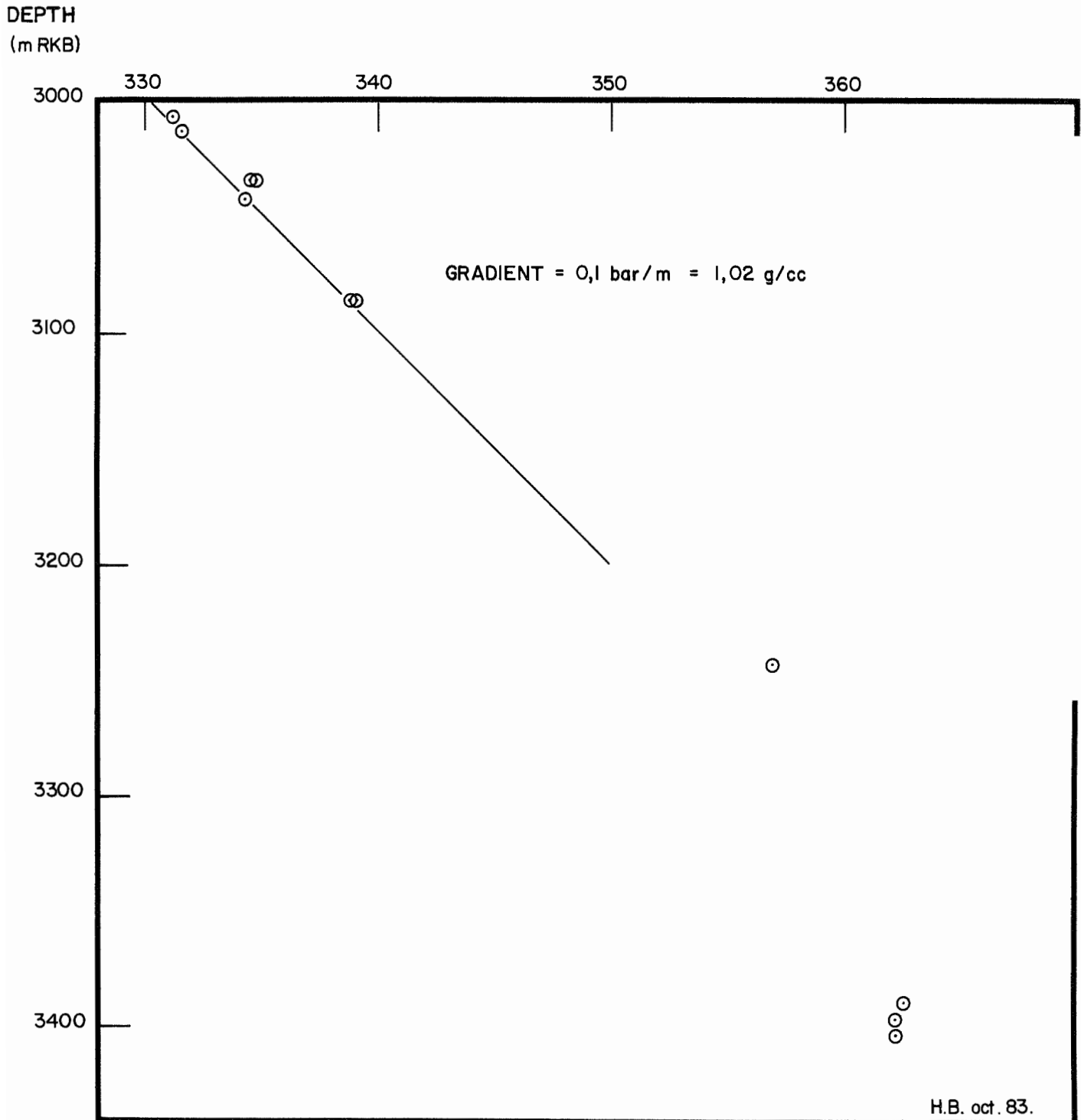
The Dunlin Group (3048 - 3387 mKB)

The Drake Formation (3048 - 3241 mKB)

The Drake Formation consists of mostly sandstone on top, composed of clear to transparent quartz, medium to coarse, subangular to subrounded, mostly friable and occasionally slightly calcareously cemented.

The lower part of the formation is interbedded shale and sandstone.

RFT - PLOT, 30/3-3
FORMATION PRESSURE (bar)





SUMMARY

Only residual hydrocarbons were encountered in the Brent and Drake sands of 30/3-3. The logs indicate an average watersaturation of 93% and an average porosity of 17%.

The RFT plot suggests a watergradient of 1.02 g/cc.

The well was not tested.

One interval from 2979 to 2992.5 mRKB was cored.



LOG QUALITY

The logs are generally of good quality.

The caliper presented, reads a slightly too high value and the caliper of the LDL-CNL log slightly too low.



INPUT PARAMETERS

Formation Temperature

A temperature of 116°C was used in the calculations. This temperature was obtained from the ISF-SONIC log.

The LDL-CNL log was corrected for a temperature of 122°C.

Formation Water Resistivity, R_w

A value of 0.07 (at 116°C) was chosen after a comparison with 30/3-2, R_{wa} calculations, ratio method and calculations from the SP log.

Mud Properties

R_m	=	0.544 ohmm at 14.4°C
R_{mf}	=	0.349 ohmm at 14.4°C
R_{mc}	=	1.000 ohmm at 13.3°C
R_m	=	0.143 ohmm at 116°C
R_{mf}	=	0.091 ohmm at 116°C
R_{mc}	=	0.255 ohmm at 116°C

Shale Parameters

The shale parameters were picked from cross plots and visual inspection of the logs.

Shale density : 2.57 g/cc

Shale resistivity : 2.4 ohmm

$\phi_{\text{neutron shale}}$: 0.38



COMPUTATIONS

Shale Volume

Of the standard shale indicators the GR and the LDL-CNL crossplot are considered applicable. The final shale volume used for further computations is picked as a minimum.

An exception are the intervals 2991 - 2999 mRKB and 3016.5 - 3029 mRKB. These intervals are the coal beds of the Ness Formation which are not considered productive. By using the GR as the only indicator, these intervals were excluded from our statistics.

Porosity

The shale-corrected PHID and PHIS crossplot was used as a primary porosity and in addition as a final porosity, since the hydrocarbon effect was considered zero.



Water Saturation

The induction log is used as a R_t curve and a manually mudcake corrected RMSFL as a R_{xo} -curve. The modified Nigeria equation is used for the water saturation calculation.

$$\frac{1}{\sqrt{R_t}} = \left[\frac{V_{sh}^c}{\sqrt{R_{sh}}} + \frac{\phi^{m/2}}{\sqrt{aR_w}} \right] S_w^{n/2}$$

- R_t = True Resistivity
- R_w = Formation Water Resistivity
- S_w = Water Saturation
- R_{sh} = Shale Resistivity
- V_{sh} = Shale Volume
- ϕ = Porosity
- C = Shale Exponent (1.6)
- m = Cementation Exponent (2)
- n = Saturation Exponent (2.0)
- a = Lithology Factor (1.0)

First the S_{xo} - S_{hr} -values were computed, then the PHIF and finally the S_w - S_h values.

In the coalbeds S_h was given the value 0 and S_w the value 1.



DISCUSSION

The difficulties of log-interpretation in this well are the coalbeds in the Ness Formation. There are several beds fairly close together. The logs are not able to resolve the single non-coalbed in between without strong edge-effects. Due to this effect, the porosity, shale volume and especially the water saturation would give rather incorrect values, since the induction log has a long spacing.

To improve the CPI some "cosmetic" work was applied; filtering the porosity to zero where coal was present. The payzones of 1.75 m is believed to be just edge-effects of the induction log and not actual pay. The RFT pressures suggests a pure watergradient.

There might be some residual gas in between the coal, but this gas would not be relevant to production.

The HC-residual curve is the product of $SH * PHIF$.



CORE SUMMARY

There is one core, 2979 - 2992.5 mRKB in the top of the Ness Formation.

The porosity range from 4.8% to about 17.1% with a single value of 25.4% which agrees with the log porosity.

The grain density is in the area of 2.66 g/cc - 2.68 g/cc and the permeability, both vertical and horizontal, rather low about 1 mD.

The zone about 2987 - 2988 mRKB is a high porosity and permeability zone.

RESULTS

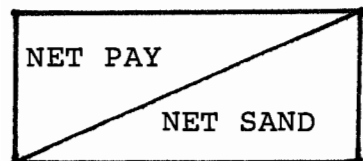
TABLE

PETROPHYSICAL PARAMETERS

FROM WELL LOGS

WELL 30/3-3

Formation interval (m RKB)	Sand (m)	Average Porosity %	Average Water Saturation %	Average Shale Volume %	Net/Gross %
BRENT and DRAKE (2978 - 3116)	1.75 * 56.50	- 0.17	- 0.93	- 0.15	- 0.41
NESS Formation (2978 - 3034)	1.00* 15.50	- 0.20	- 0.91	- 0.11	- 0.28
ETIVE Formation (3034 - 3048)	0.75 * 13.50	- 0.17	- 0.89	- 0.11	- 0.96
DRAKE Group (3048 - 3116)	0.00 27.50	- 0.16	- 0.97	- 0.21	- 0.40



Cutoff values: $S_w = 0.65$
 $PHIF = 0.12$
 $V_{sh} = 0.40$

* See discussion

APPENDIX

Statistics

Sensitivity Plot

Crossplots

Listing

CPI

STATISTICS

FIELD: 30-3
WELL: 30-3-3HB
ENGINEER: HB
DATE: 10.23 18 NOV 1983
DEPTH INTERVAL: 2978.00 TO 3116.00
APPLIED CUTOFFS:
USH: GREATER THAN 0.40
PHIF: LESS THAN 0.12
SU: GREATER THAN 0.65

TOTAL DEPTH
THICKNESS: 138.000
AVERAGE PHIF: 0.104
AVERAGE USHALE: 0.442
AVERAGE SU: 0.935
U.AVERAGE SU * PHIF: 0.887
AVERAGE SH: 0.065
VOID VOLUME: 14.391
HC VOID VOLUME: 1.628
RES HC VOID VOLUME: 0.345
MOV HC VOID VOLUME: 1.283

NET PAY
THICKNESS: 1.750
AVERAGE PHIF: 0.224
AVERAGE USHALE: 0.215
AVERAGE SU: 0.484
U.AVERAGE SU * PHIF: 0.469
AVERAGE SH: 0.516
VOID VOLUME: 0.391
HC VOID VOLUME: 0.208
RES HC VOID VOLUME: 0.066
MOV HC VOID VOLUME: 0.142

NET SAND
THICKNESS: 56.500
AVERAGE PHIF: 0.171
AVERAGE USHALE: 0.156
AVERAGE SU: 0.934
U.AVERAGE SU * PHIF: 0.924
AVERAGE SH: 0.066
VOID VOLUME: 9.677

HC VOID VOLUME: 0.739
RES HC VOID VOLUME: 0.094
MOV HC VOID VOLUME: 0.644
NET GROSS RATIOS
HNETPAY/HGROSS SAND: 0.01268
HNETSAND/HGROSS SAND: 0.40842
HNETPAY/HNETSAND: 0.03097

S T A T I S T I C S

FIELD: 30-3
WELL: 30-3-3HB
ENGINEER: HB
DATE: 10.25 18 NOV 1983

DEPTH INTERVAL: . . . 2978.00 TO 3034.00

APPLIED CUTOFFS: USH: GREATER THAN 0.40
PHIF: LESS THAN 0.12
SW: GREATER THAN 0.65

T O T A L D E P T H

THICKNESS: 56.000
AVERAGE . . . 'PHIF' 0.098
AVERAGE . . . 'USHALE' 0.614
AVERAGE . . . 'SU' 0.884
W.AVERAGE . . . 'SW' * 'PHIF' 0.787
AVERAGE . . . 'SH' 0.116
VOID VOLUME: . . . ('PHIF'). 5.504
HC VOID VOLUME . . . ('SH'*). 1.171
RES HC VOID VOLUME ('SHR'*). 0.244
MOV HC VOID VOLUME 0.928

HC VOID VOLUME . . ('SH'*). 0.323
RES HC VOID VOLUME ('SHR'*). 0.030
MOV HC VOID VOLUME 0.292

N E T / G R O S S R A T I O S

HNETPAY /HGROSS SAND = 0.01786
HNETSAND/HGROSS SAND = 0.27679
HNETPAY /HNETSAND = 0.06452

N E T P A Y

THICKNESS: . . . 'PHIF' 1.000
AVERAGE . . . 'PHIF' 0.235
AVERAGE . . . 'USHALE' 0.302
AVERAGE . . . 'SU' 0.448
W.AVERAGE . . . 'SW' * 'PHIF' 0.430
AVERAGE . . . 'SH' 0.552
VOID VOLUME: . . . ('PHIF'). 0.235
HC VOID VOLUME . . . ('SH'*). 0.134
RES HC VOID VOLUME ('SHR'*). 0.029
MOV HC VOID VOLUME 0.105

N E T S A N D

THICKNESS: . . . 'PHIF' 15.500
AVERAGE . . . 'PHIF' 0.197
AVERAGE . . . 'USHALE' 0.105
AVERAGE . . . 'SU' 0.906
W.AVERAGE . . . 'SW' * 'PHIF' 0.895
AVERAGE . . . 'SH' 0.094
VOID VOLUME: . . . ('PHIF'). 3.057

S T A T I S T I C S

FIELD: 30-3
WELL: 30-3-3MB
ENGINEER: HB
DATE: 10.26 18 NOV 1983

DEPTH INTERVAL: . . . 3034.00 TO 3048.00
APPLIED CUTOFFS:
. USH: GREATER THAN 0.40
. PHIF: LESS THAN 0.12
. SU: GREATER THAN 0.65

T O T A L D E P T H

THICKNESS: . . . 'PHIF' . . . 14.000
AVERAGE . . . 'USHALE' . . . 0.170
AVERAGE . . . 'SW' . . . 0.124
W-AVERAGE . . . 'SW' * 'PHIF' . . . 0.884
AVERAGE . . . 'SH' . . . 0.868
VOID VOLUME: . . . ('PHIF'). . . 0.116
HC VOID VOLUME: . . . ('SH'*). . . 2.373
RES HC VOID VOLUME ('SHR'*). . . 0.314
MOV HC VOID VOLUME 0.072

HC VOID VOLUME . . ('SH'*). . . 0.284
RES HC VOID VOLUME ('SHR'*). . . 0.040
MOV HC VOID VOLUME 0.244

N E T / G R O S S R A T I O S

HNETPAY /HGROSS SAND = 0.05357
HNETSAND /HGROSS SAND = 0.96429
HNETPAY /HNETSAND = 0.05556

N E T P A Y

THICKNESS: . . . 'PHIF' . . . 0.750
AVERAGE . . . 'USHALE' . . . 0.208
AVERAGE . . . 'SW' . . . 0.100
W-AVERAGE . . . 'SW' * 'PHIF' . . . 0.532
AVERAGE . . . 'SH' . . . 0.468
VOID VOLUME: . . . ('PHIF'). . . 0.156
HC VOID VOLUME: . . . ('SH'*). . . 0.074
RES HC VOID VOLUME ('SHR'*). . . 0.037
MOV HC VOID VOLUME 0.037

N E T S A N D

THICKNESS: . . . 'PHIF' . . . 13.500
AVERAGE . . . 'USHALE' . . . 0.172
AVERAGE . . . 'SW' . . . 0.111
W-AVERAGE . . . 'SW' * 'PHIF' . . . 0.890
AVERAGE . . . 'SH' . . . 0.878
VOID VOLUME: . . . ('PHIF'). . . 2.318

S T A T I S T I C S

FIELD: 30-3
 WELL: 30-3-3HB
 ENGINEER: HB
 DATE: 10.27 18 NOV 1983

DEPTH INTERVAL: . . . 3048.00 TO 3116.00
 APPLIED CUTOFFS:
 VSH: GREATER THAN 0.40
 PHIF: LESS THAN 0.12
 SU: GREATER THAN 0.65

T O T A L D E P T H

 THICKNESS: . . . 'PHIF' 68.000
 AVERAGE . . . 'USHALE' 0.096
 AVERAGE . . . 'SU' 0.365
 W.AVERAGE . . . 'SU' * 'PHIF' 0.987
 AVERAGE . . . 'SH' 0.978
 VOID VOLUME: . . . ('PHIF'). 0.013
 HC VOID VOLUME . . . ('SH'*). 6.514
 RES HC VOID VOLUME ('SHR'*). 0.142
 MOV HC VOID VOLUME 0.029

 ***** 0.113

N E T P A Y

 THICKNESS: 0.000

N E T S A N D

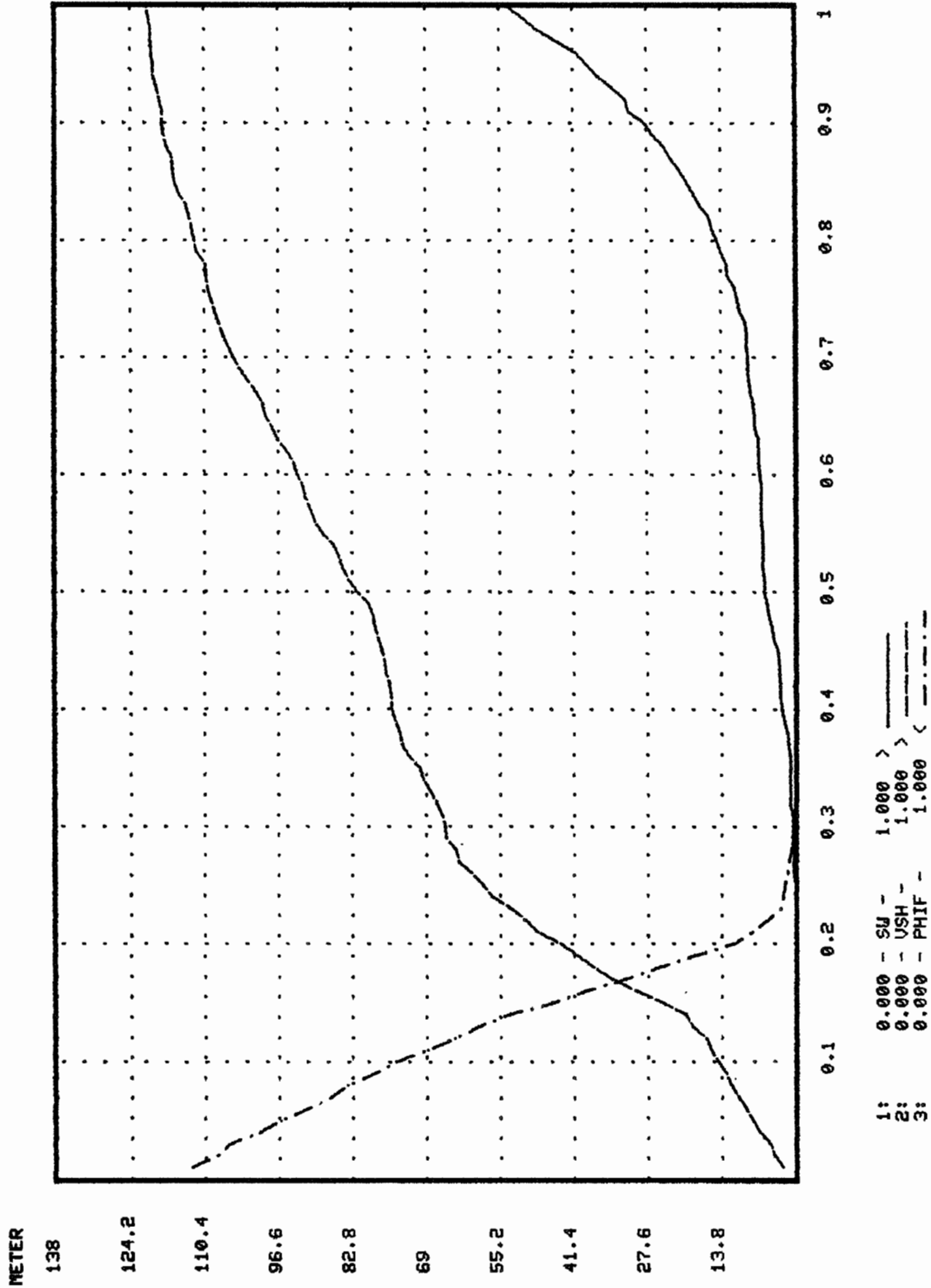
 THICKNESS: . . . 'PHIF' 27.500
 AVERAGE . . . 'USHALE' 0.156
 AVERAGE . . . 'SU' 0.206
 W.AVERAGE . . . 'SU' * 'PHIF' 0.972
 AVERAGE . . . 'SH' 0.969
 VOID VOLUME: . . . ('PHIF'). 4.301
 HC VOID VOLUME . . . ('SH'*). 0.132
 RES HC VOID VOLUME ('SHR'*). 0.025
 MOV HC VOID VOLUME 0.107

N E T / G R O S S R A T I O S

 HNETPAY /HGROSS SAND = 0.00000
 HNETSAND/HGROSS SAND = 0.40441
 HNETPAY /HNETSAND = 0.00000

SENSITIVITY - PLOT

WELL 30/3-3 HB.
INTERVAL 2978.00 - 3116.00
TIME 10.34 18. Nov. 1983

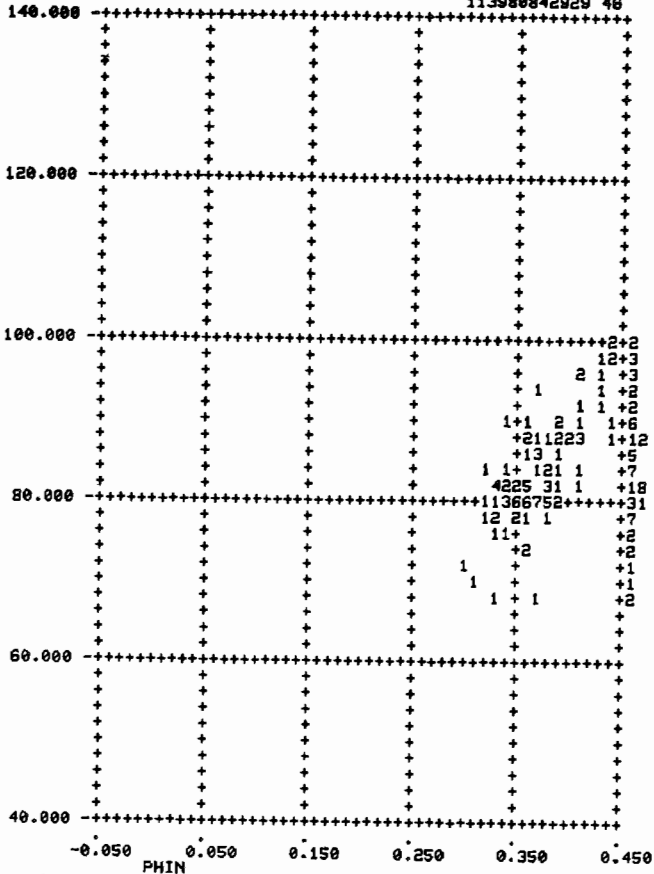


THE HEATHER FORMATION

(2950 - 2978 m RKB)

Crossplots

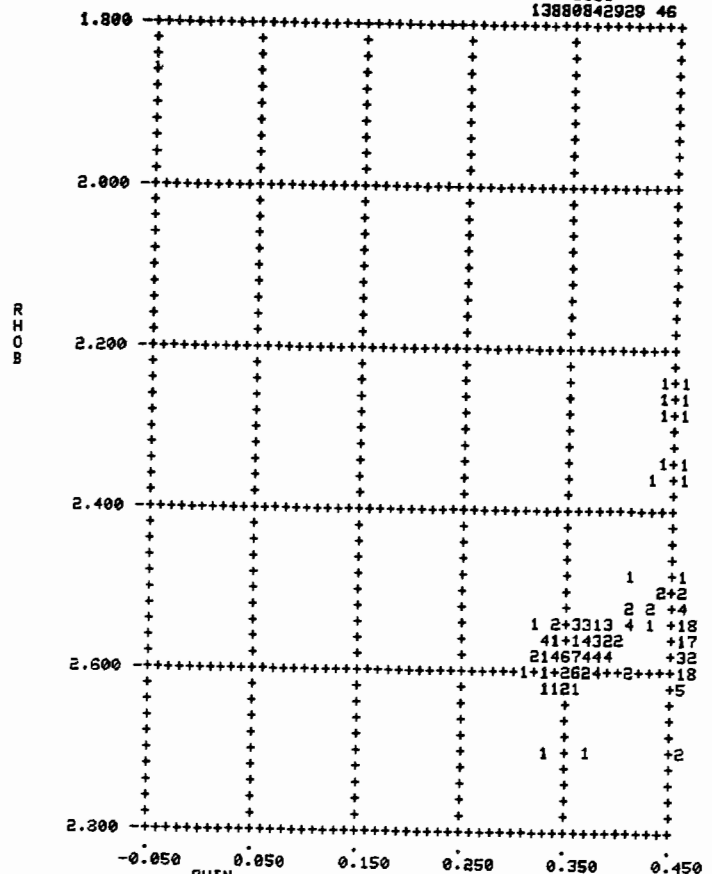
30-3-3HB DT VS PHIN (2950, 29
1111
113988842929 46



PHIN DEPTH: 2950.00 2978.00 TOTAL: 106
530-3-3HB Y.AU: 84.4818
0.3764

P L O T T E D B Y : H B

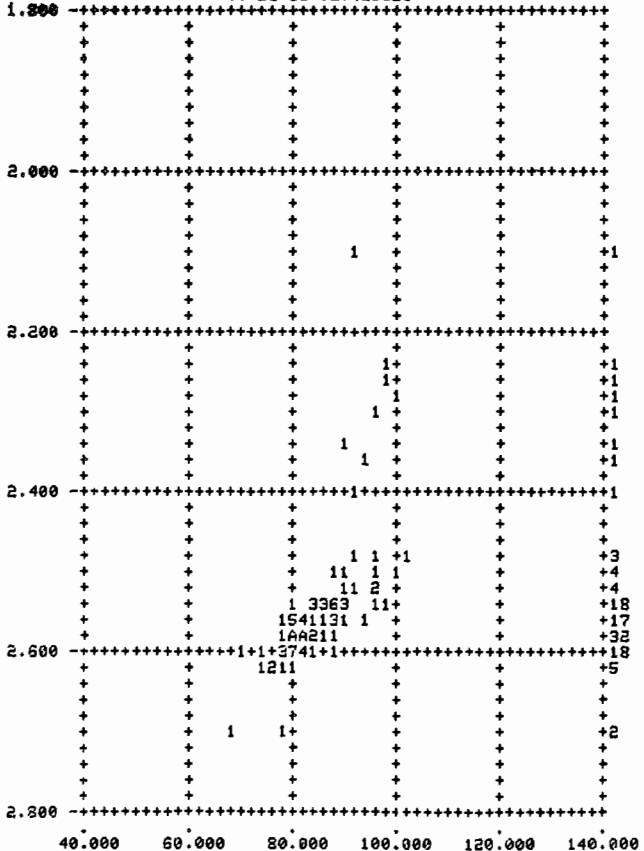
30-3-3HB RHOB VS PHIN (2950,
1111
13888842929 46



PHIN DEPTH: 2950.00 2978.00 TOTAL: 104
WELL 530-3-3HB Y.AU: 2.5692
X.AU: 0.3775

P L O T T E D B Y : H B

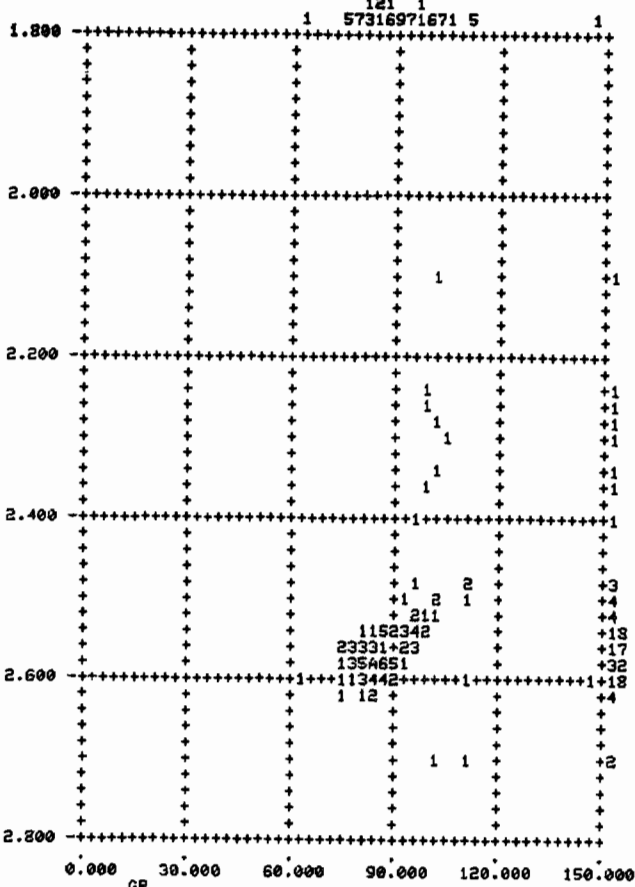
30-3-3HB RHOB VS DT (2950, 29
31 1
11 227187527426321



DT DEPTH: 2950.00 2978.00 TOTAL: 111
WELL 530-3-3HB Y.AU: 2.5587
AU: 85.4532

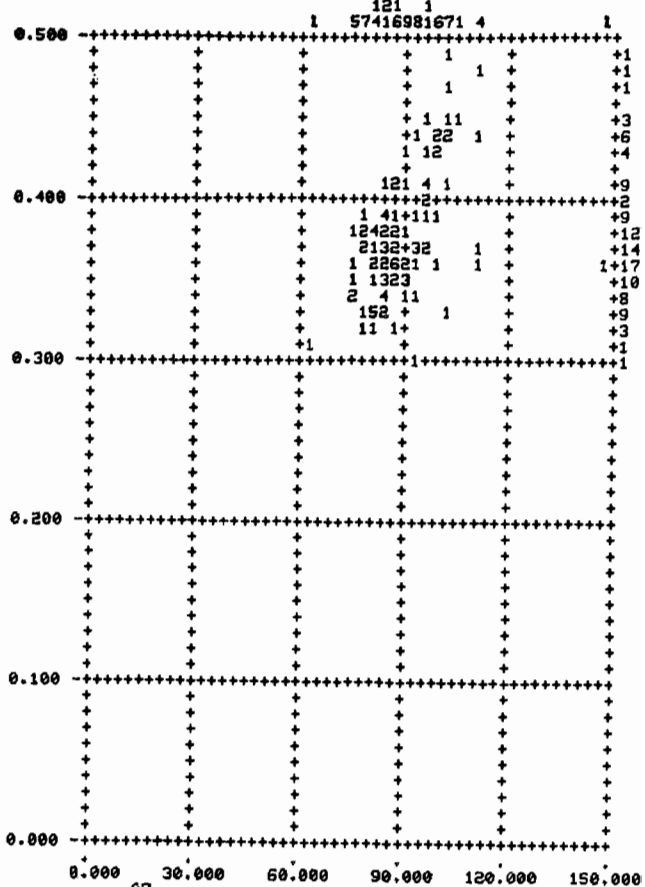
P L O T T E D B Y : H B

30-3-3HB RHO US GR (2950, 29



P L O T T E D B Y : H B

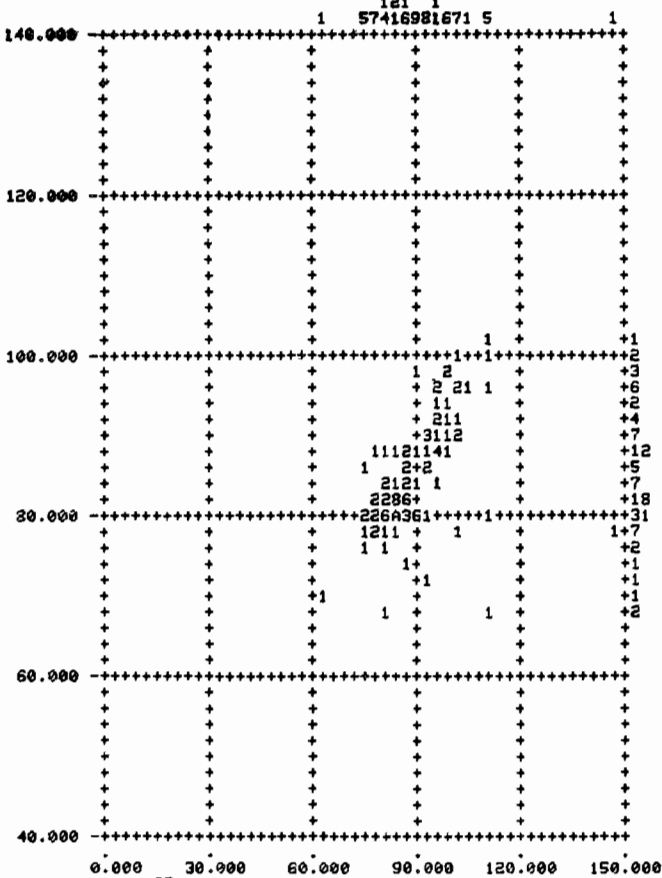
30-3-3HB PHIN US GR (2950, 29



P
H
I
N

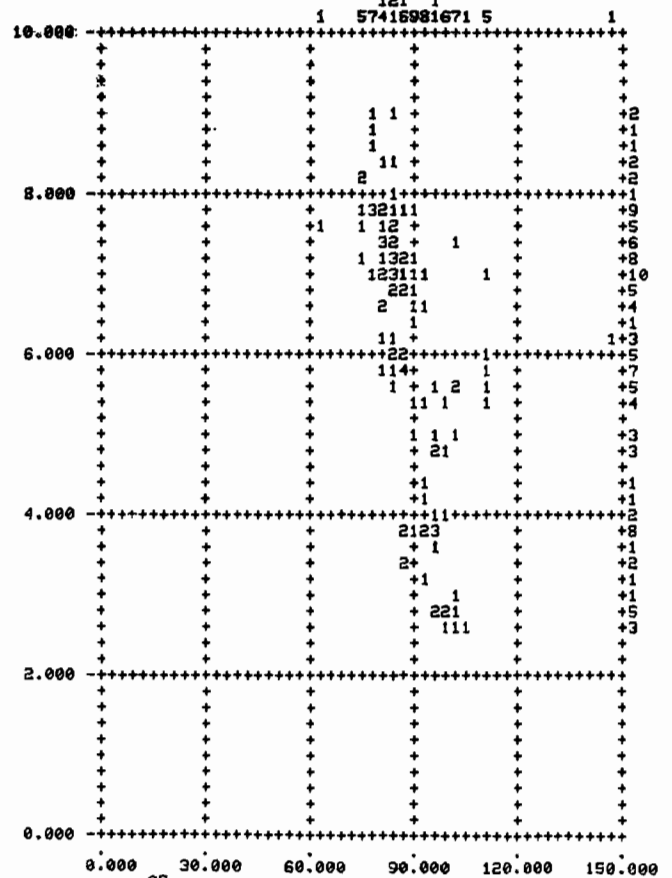
P L O T T E D B Y : H B

30-3-3HB DT US GR (2950, 2978



P L O T T E D B Y : H B

30-3-3HB RT US GR (2950, 2978



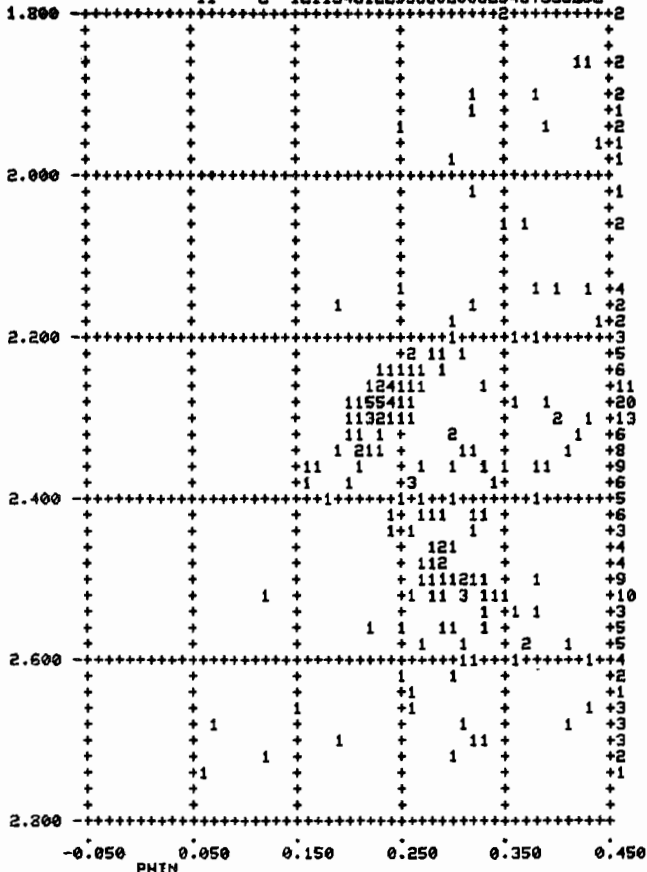
R
T

P L O T T E D B Y : H B

THE NESS MEMBER
(2978 - 3034 m RKB)

Crossplots

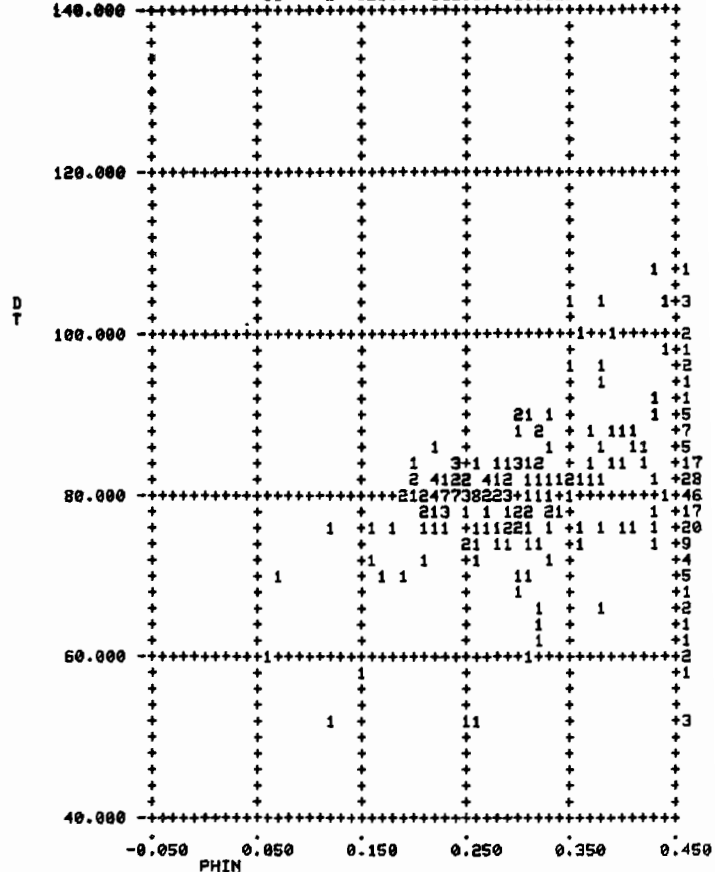
30-3-3HB RHOB VS PHIN (2978, 30
 111 1 1111
 11 2 121134612293860200825437333252



WELL: S30-3-3HB PHIN DEPTH: 2978.00 3034.00 TOTAL: 182
 X.A.U: 0.2902 Y.A.U: 2.3672

PLOTTED BY: HB

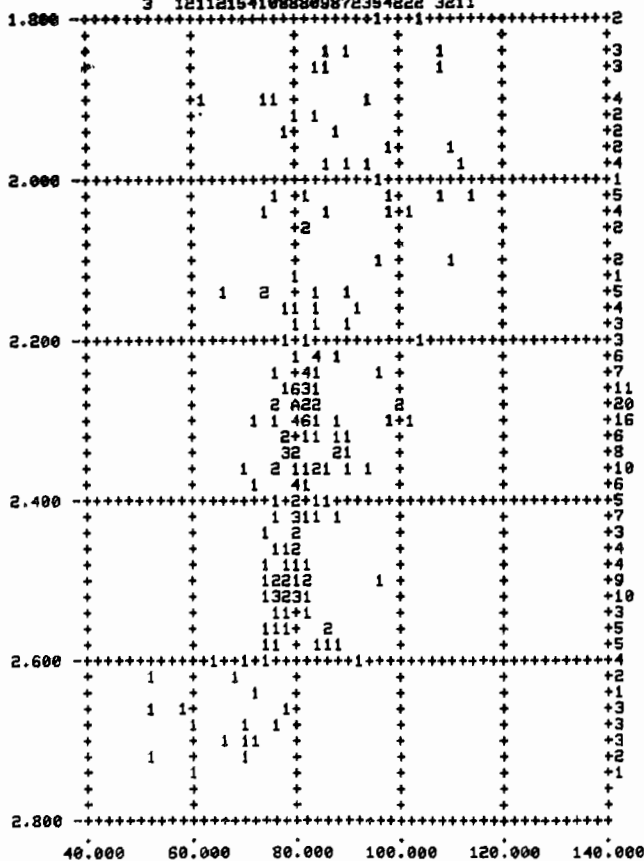
30-3-3HB DT VS PHIN (2978, 30
 111 1 1111
 11 2 121134612293860200825437333273



WELL: S30-3-3HB PHIN DEPTH: 2978.00 3034.00 TOTAL: 185
 X.A.U: 0.2925 Y.A.U: 81.0312

PLOTTED BY: HB

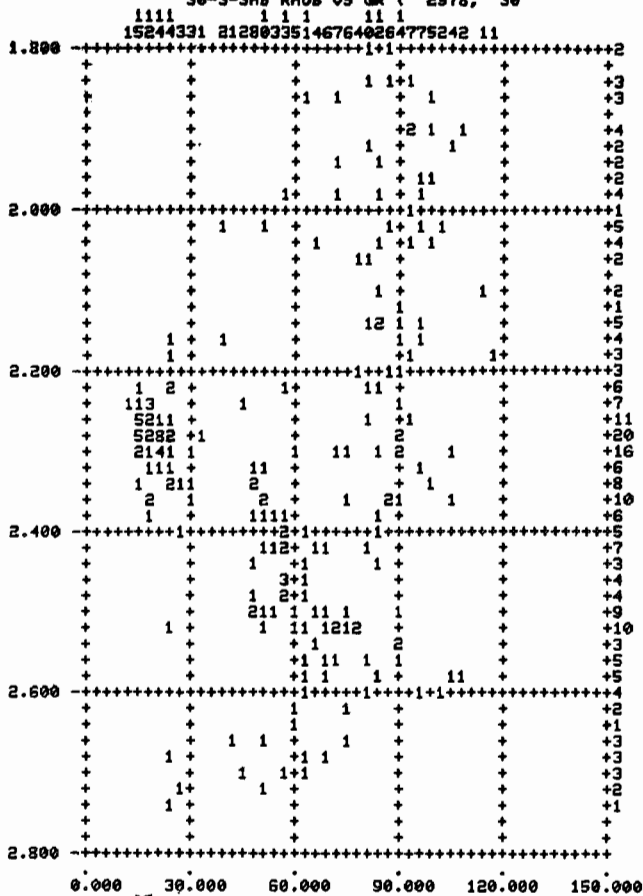
30-3-3HB RHOB VS DT (2978, 30
 121422
 3 12112154108280872354822 3211



WELL: S30-3-3HB DEPTH: 2978.00 3034.00 TOTAL: 216
 J: 82.8363 Y.A.U: 2.3217

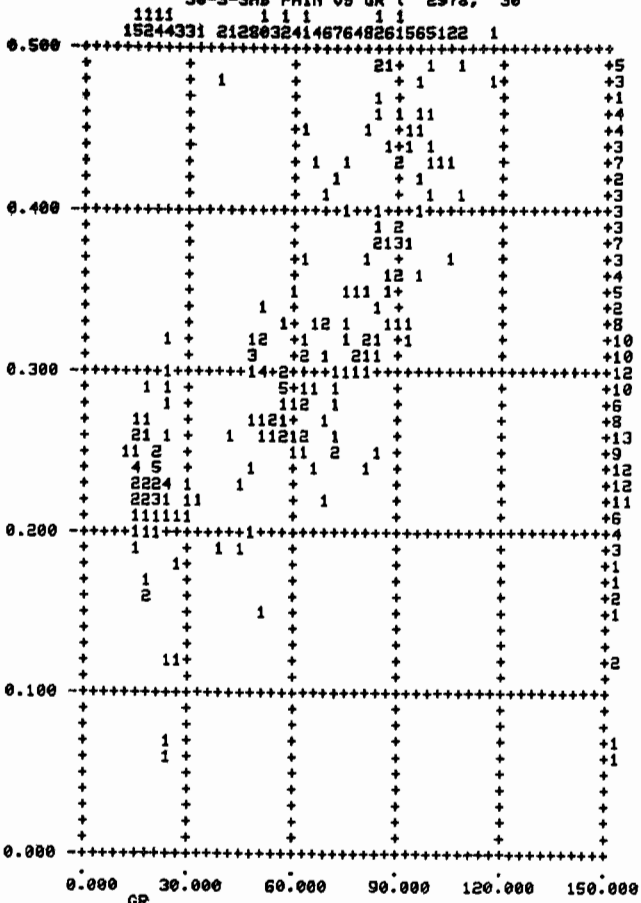
PLOTTED BY: HB

30-3-3HB RHOB VS GR (2978, 30



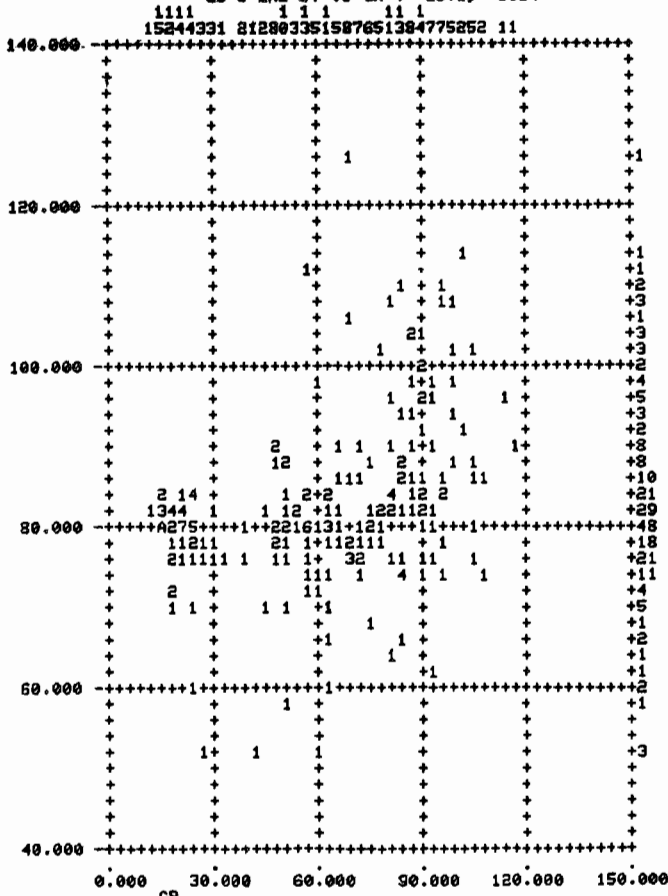
WELL S30-3-3HB DEPTH: 2978.00 3034.00 TOTAL: 216
 X.AU: 60.4453 Y.AU: 2.3217
 PLOTTED BY: HB

30-3-3HB PHIN VS GR (2978, 30



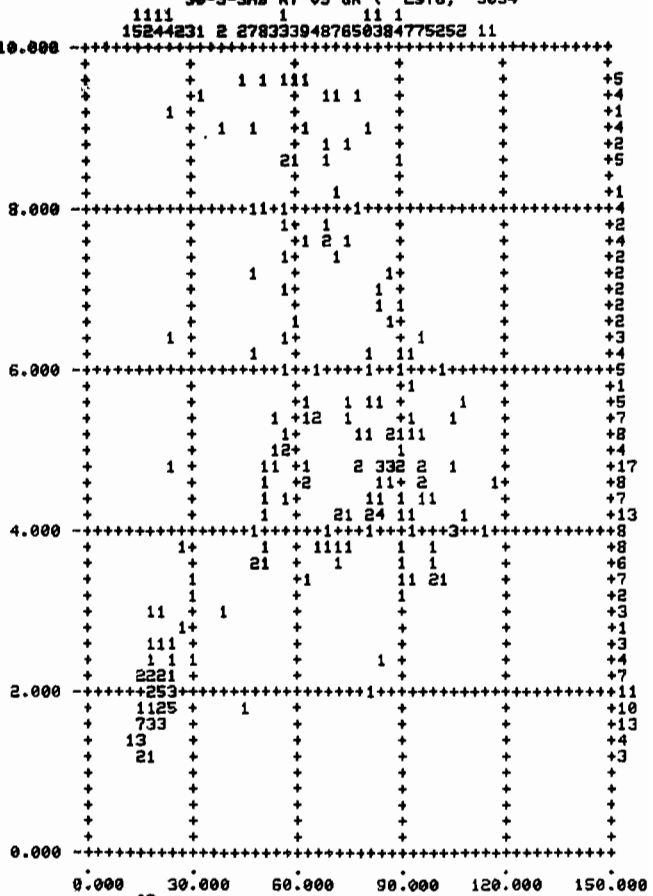
WELL S30-3-3HB DEPTH: 2978.00 3034.00 TOTAL: 202
 X.AU: 58.3185 Y.AU: 0.3080
 PLOTTED BY: HB

30-3-3HB DT VS GR (2978, 3034



WELL S30-3-3HB DEPTH: 2978.00 3034.00 TOTAL: 225
 Y.AU: 61.2972 Y.AU: 83.3722
 PLOTTED BY: HB

30-3-3HB RT VS GR (2978, 3034

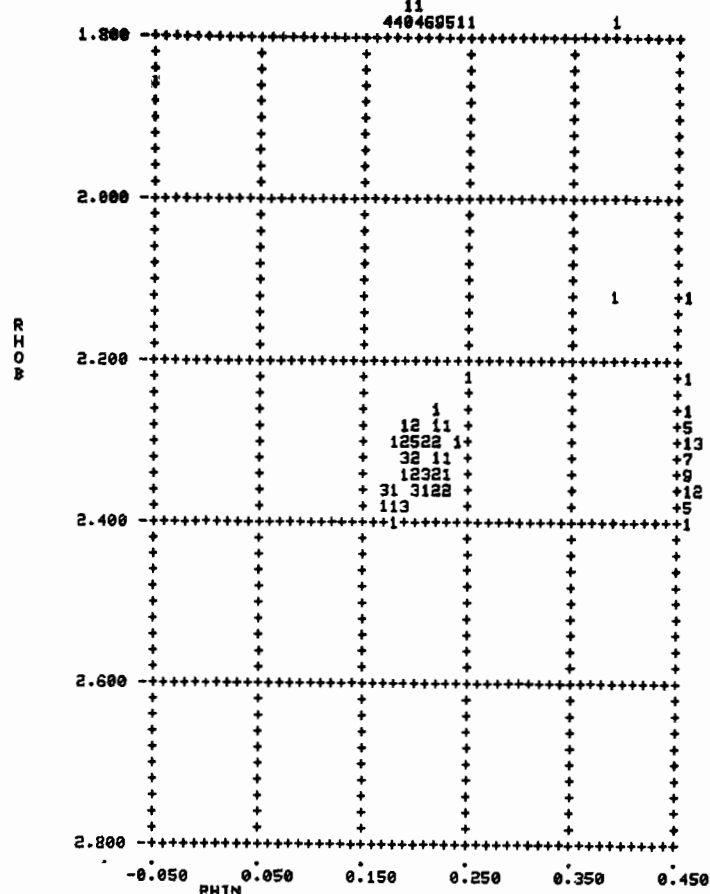


WELL S30-3-3HB DEPTH: 2978.00 3034.00 TOTAL: 214
 X.AU: 61.5038 Y.AU: 4.7109
 PLOTTED BY: HB

THE ETIVE MEMBER
(3034 - 3048 mRKB)

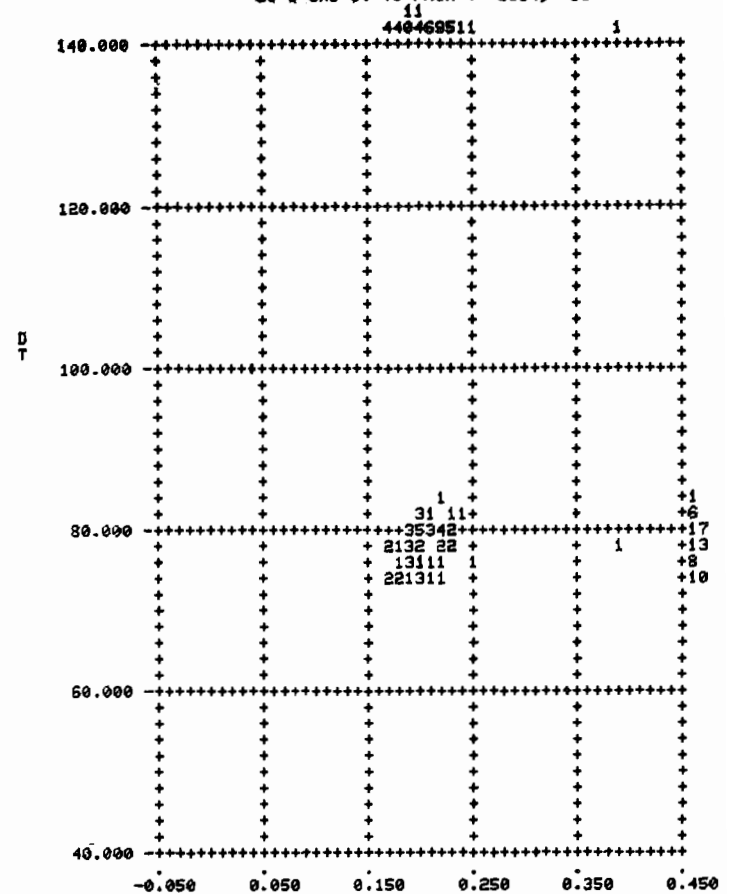
Crossplots

30-3-3HB RHOB VS PHIN (3034, 30



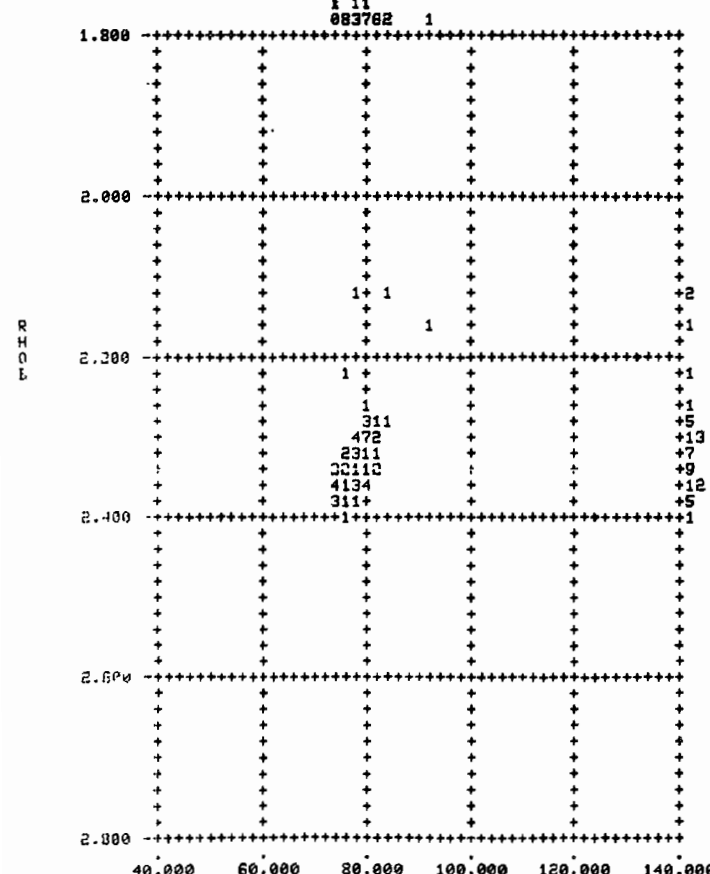
WELL: S30-3-3HB DEPTH: 3034.00 3048.00 TOTAL: 55
 X.AU: 0.2118 Y.AU: 2.3331
 P L O T T E D B Y : H R

30-3-3HB DT VS PHIN (3034, 30



WELL: S30-3-3HB DEPTH: 3034.00 3048.00 TOTAL: 55
 X.AU: 0.2118 Y.AU: 79.0368
 P L O T T E D B Y : H B

30-3-3HB RHOB VS DT (3034, 30



WELL: S30-3-3HB DEPTH: 3034.00 3048.00 TOTAL: 57
 X.AU: 79.2706 Y.AU: 2.3266
 P L O T T E D B Y : H B

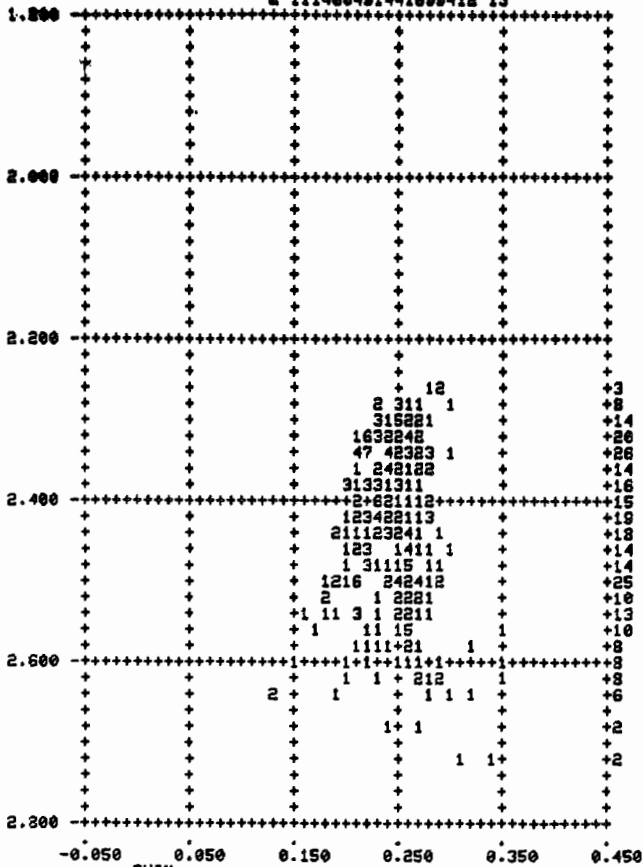
THE DRAKE FORMATION

(3048 - 3116 m RKB)

Crossplots

30-3-3HB RHOB US PHIN (3048, 31

122323421
2 111460491441699412 13

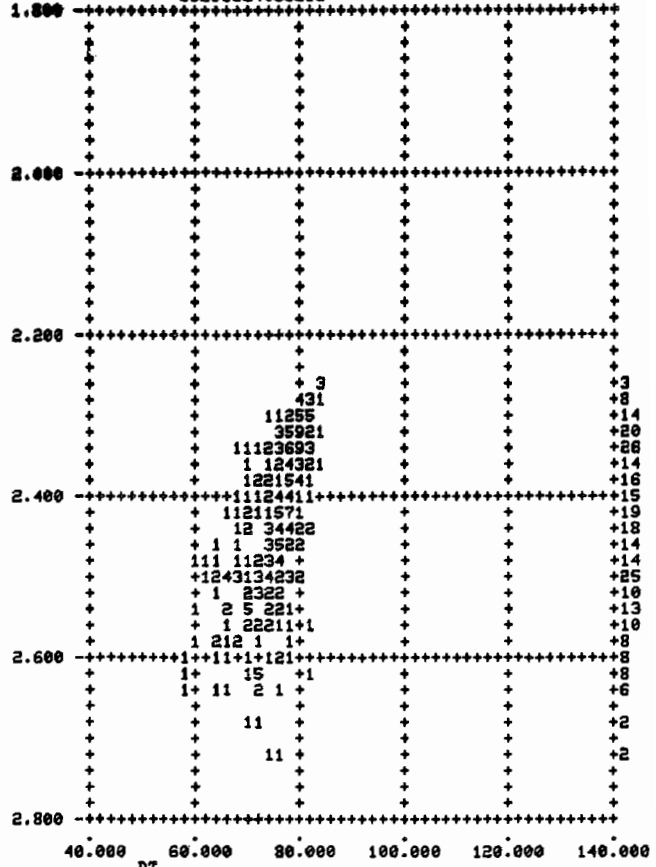


WELL S30-3-3HB PHIN DEPTH: 3048.00 3116.00 TOTAL: 273
 X J: 0.2490 Y.AU: 2.4493

PLOTTED BY : HB

30-3-3HB RHOB US DT (3048, 31

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3328122403216

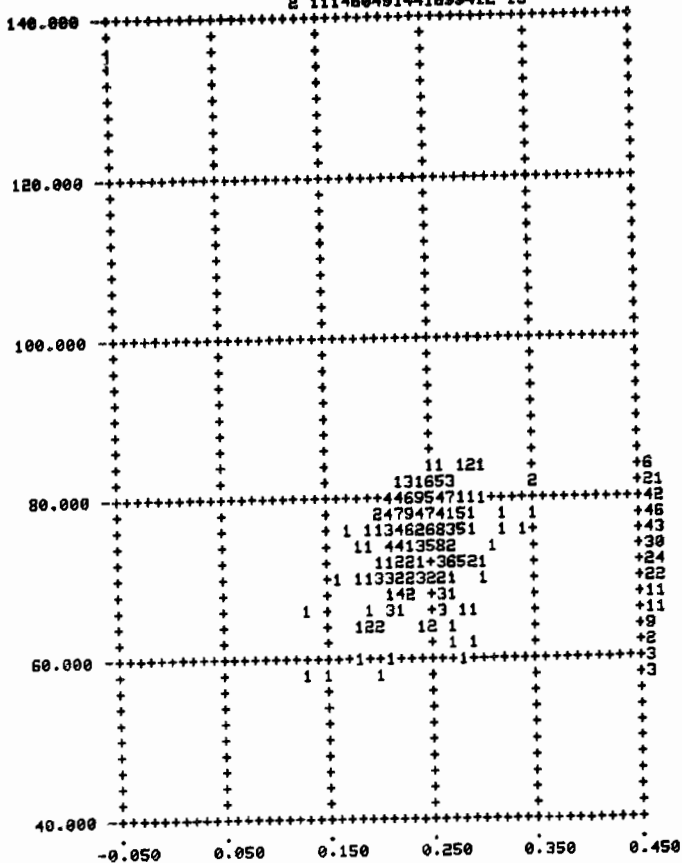


WELL S30-3-3HB DT DEPTH: 3048.00 3116.00 TOTAL: 273
 X.AU: 75.8916 Y.AU: 2.4493

PLOTTED BY : HB

30-3-3HB DT US PHIN (3048, 31

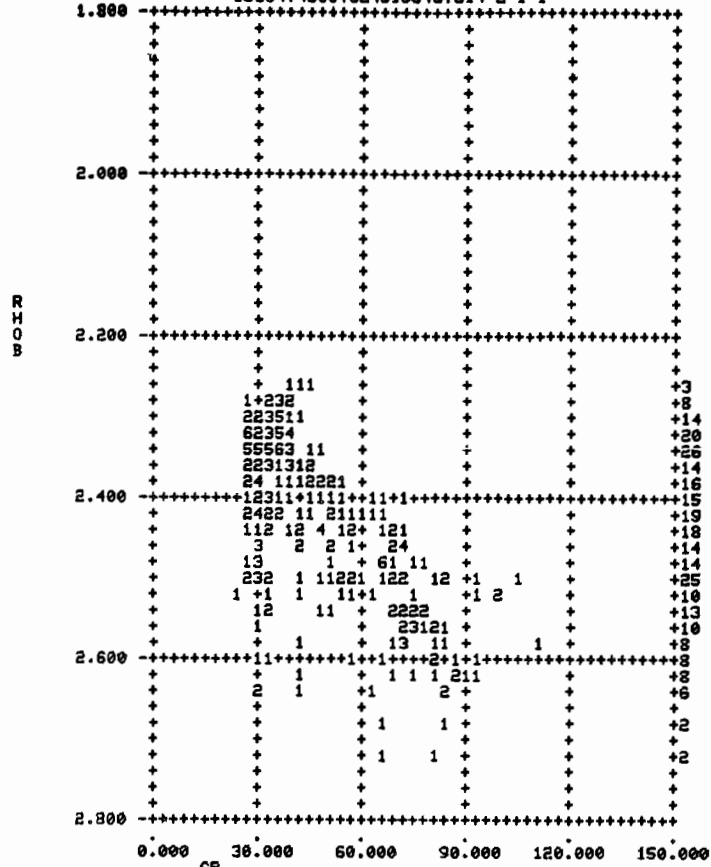
122323421
2 111460491441699412 13



WELL S30-3-3HB PHIN DEPTH: 3048.00 3116.00 TOTAL: 273
 X J: 0.2490 Y.AU: 75.8916

PLOTTED BY : HB

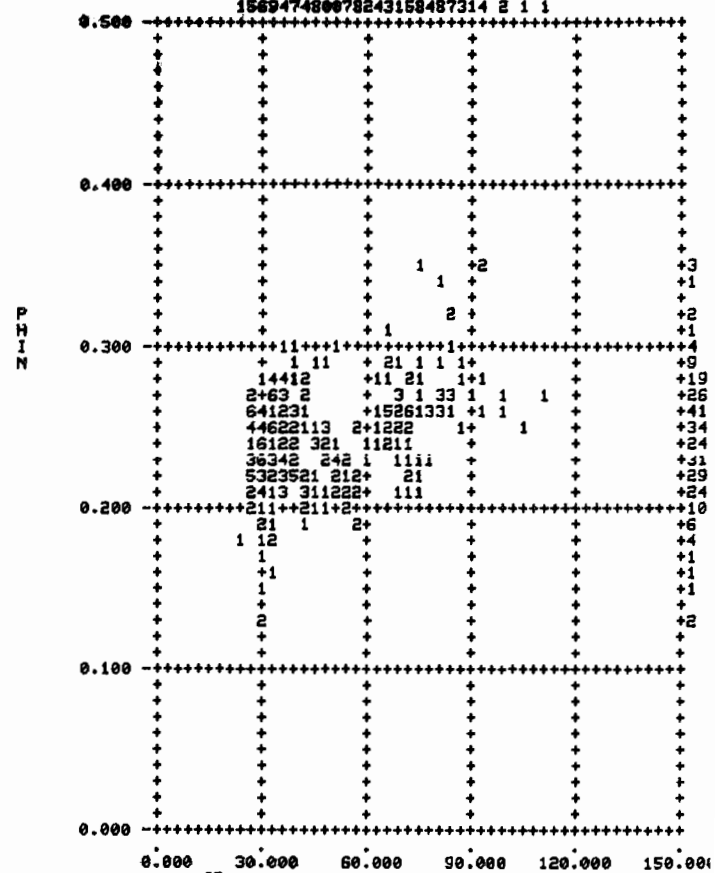
30-3-3HB RHOB US GR (3048, 31
232211 11 111
156947480078243158487314 2 1 1



WELL 530-3-3HB DEPTH: 3048.00 3116.00 TOTAL: 273
.AU: 50.6085 Y.AU: 2.4493

PLOTTED BY: HB

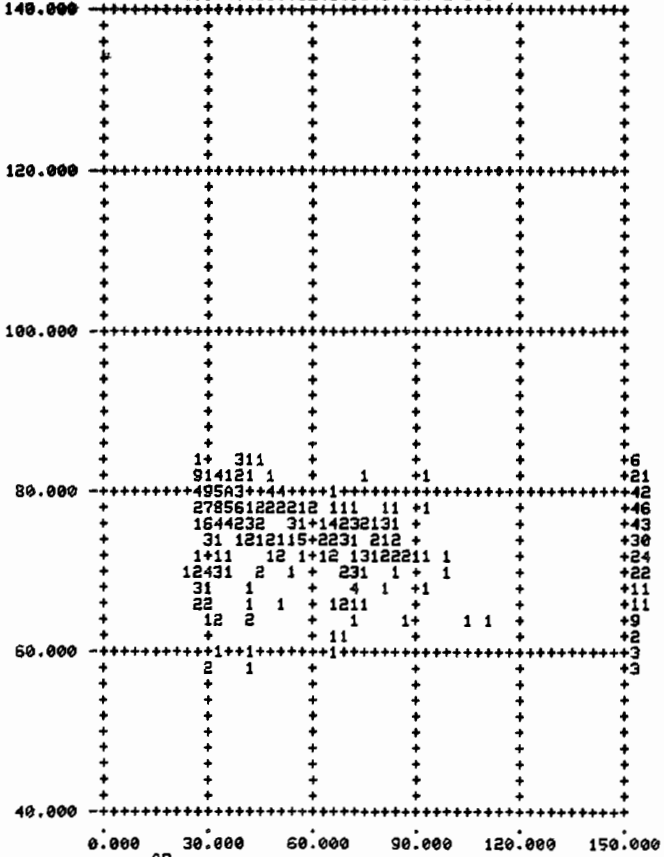
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232211 11 111
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WELL 530-3-3HB DEPTH: 3048.00 3116.00 TOTAL: 273
.AU: 50.6085 Y.AU: 0.2490

PLOTTED BY: HB

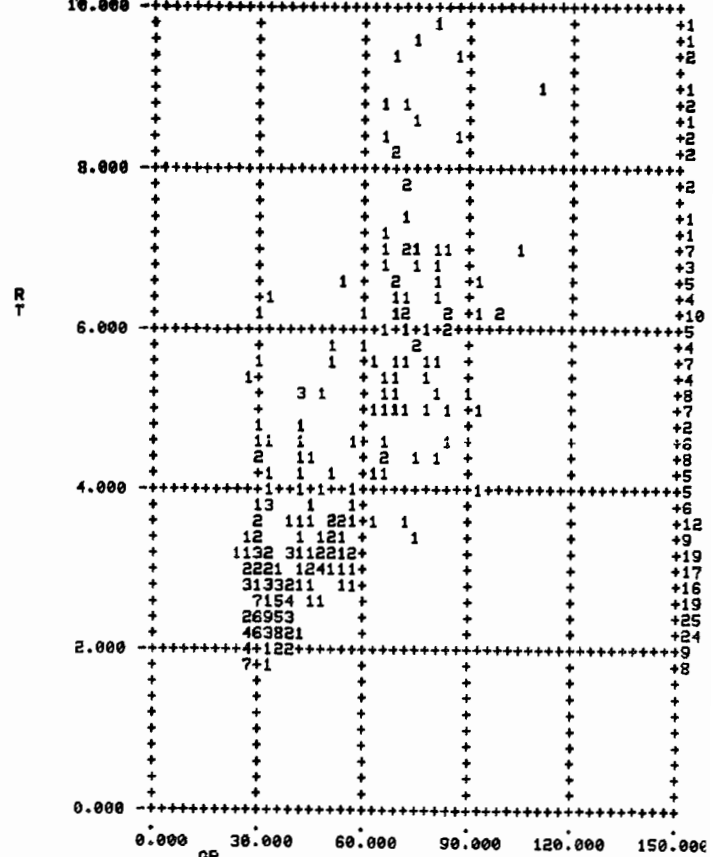
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WELL 530-3-3HB DEPTH: 3048.00 3116.00 TOTAL: 273
.AU: 50.6085 Y.AU: 75.8916

PLOTTED BY: HB

30-3-3HB RT US GR (3048, 3116
232211 11 111
156947480078243138487214 2 1 1



WELL 530-3-3HB DEPTH: 3048.00 3116.00 TOTAL: 270
.AU: 50.2957 Y.AU: 4.1001

PLOTTED BY: HB

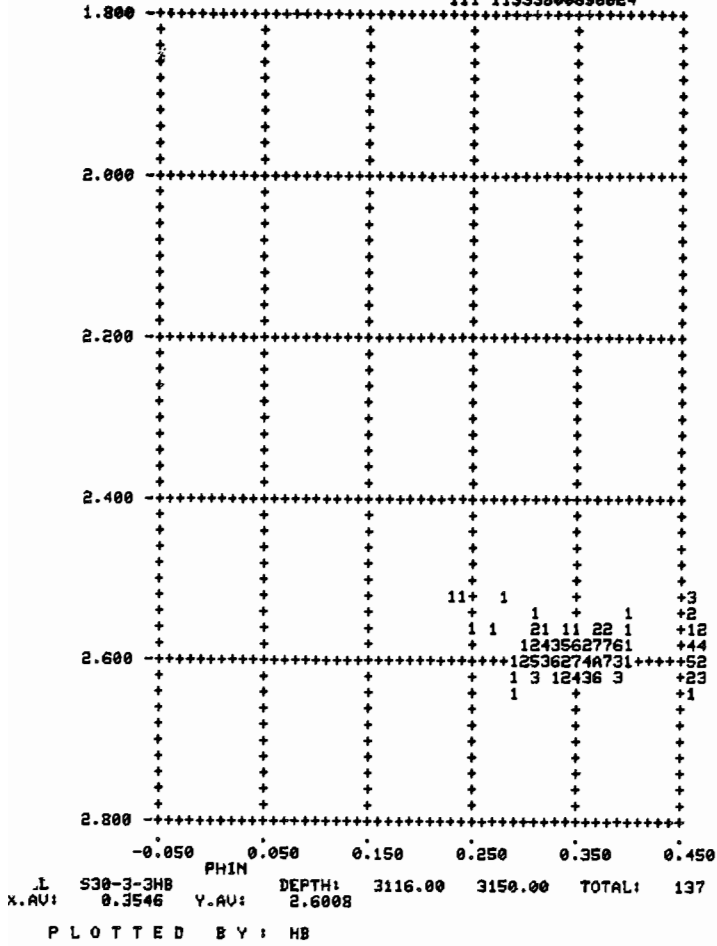
THE DUNLIN SHALE

(3116 - 3150 mRKB)

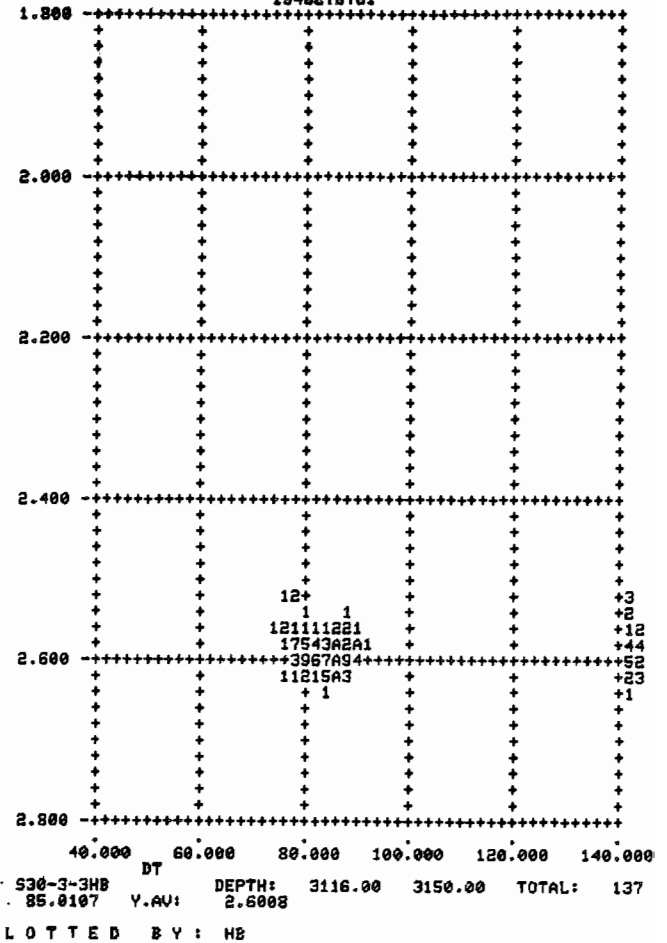
Crossplots

30-3-3HB RHOB US PHIN (3116, 31
 1 111 211
 111 11333800896624

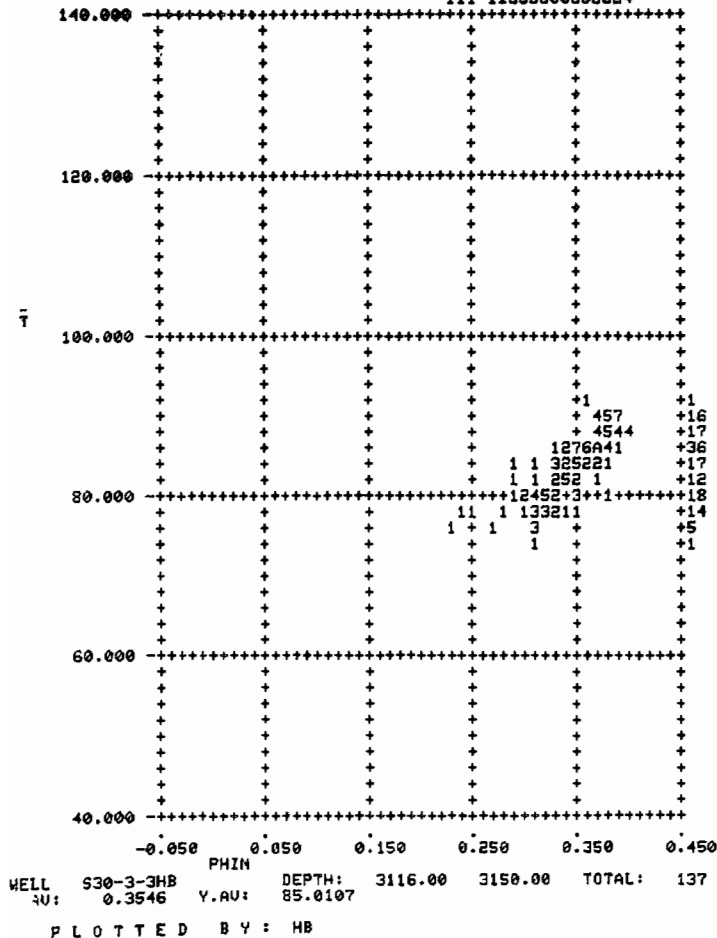
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 1111311
 1548276781



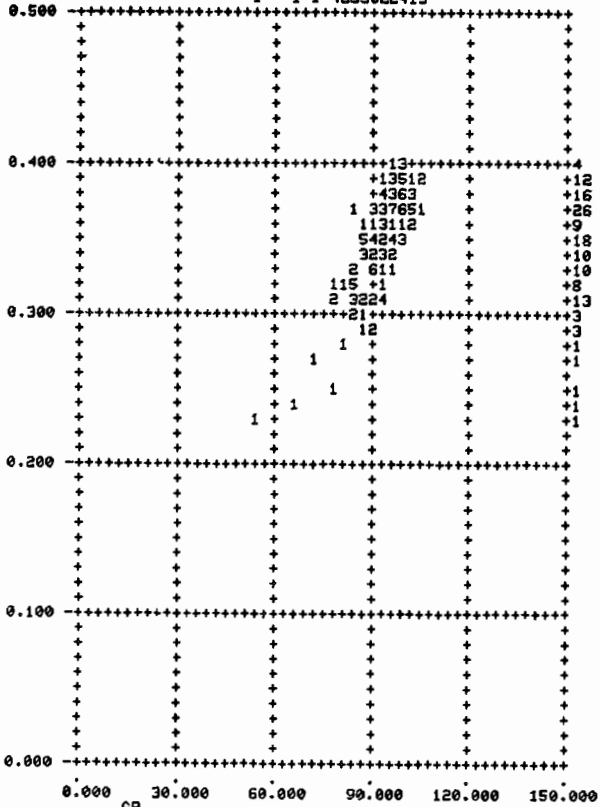
R
H
O
B



30-3-3HB DT US PHIN (3116, 31
 1 111 211
 111 11333800896624



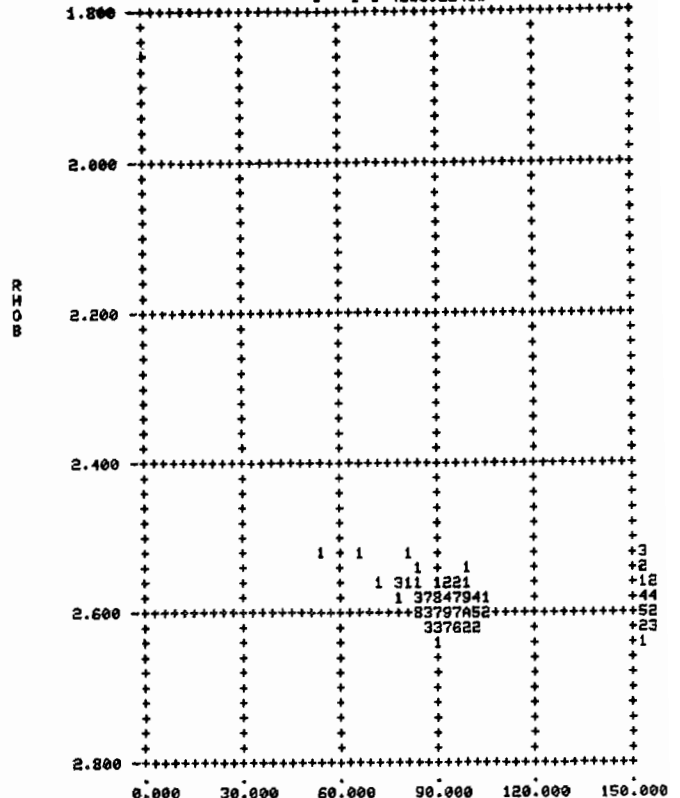
30-3-3HB PHIN US GR (3116, 31
112221
1 1 1 4233022413



WELL: 530-3-3HB GR DEPTH: 3116.00 3150.00 TOTAL: 137
X.AU: 94.1369 Y.AU: 0.3546

PLOTTED BY: HB

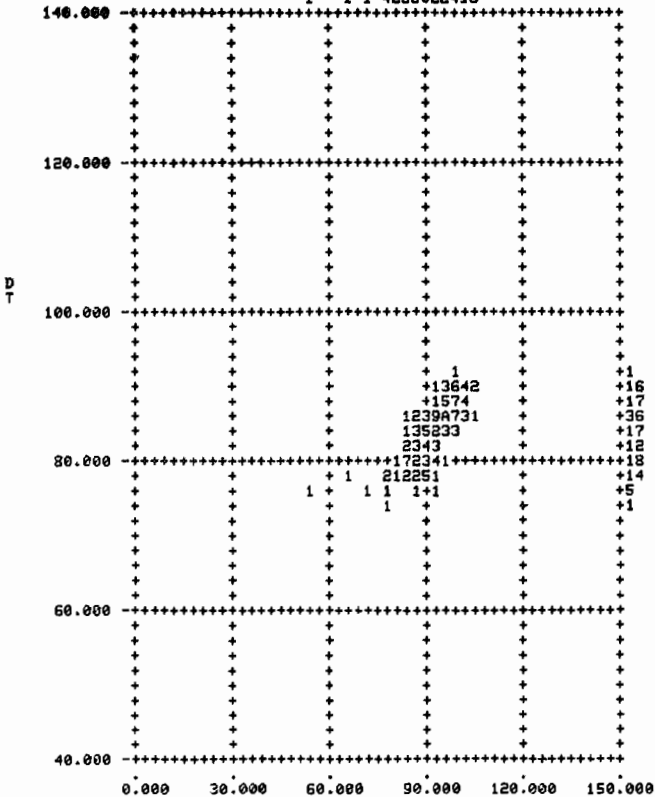
30-3-3HB RHO US GR (3116, 31
112221
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WELL: 530-3-3HB GR DEPTH: 3116.00 3150.00 TOTAL: 137
X.AU: 94.1369 Y.AU: 2.6008

PLOTTED BY: HB

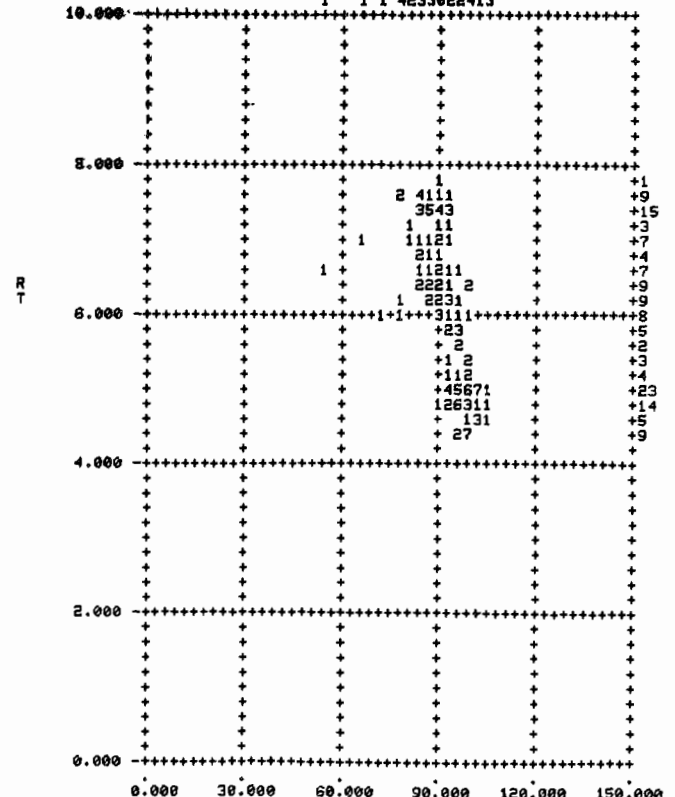
30-3-3HB DT US GR (3116, 3150
112221
1 1 1 4233022413



WELL: 530-3-3HB GR DEPTH: 3116.00 3150.00 TOTAL: 137
X.AU: 94.1369 Y.AU: 85.0107

PLOTTED BY: HB

30-3-3HB RT US GR (3116, 3150
112221
1 1 1 4233022413



WELL: 530-3-3HB GR DEPTH: 3116.00 3150.00 TOTAL: 137
X.AU: 94.1369 Y.AU: 6.0389

PLOTTED BY: HB



LISTING

WELL: 30-3-3H (2960 - 3150)

DATE: 18NOV83/HR

DEPTH	VSH	PHIF	SW	DEPTH	VSH	PHIF	SW
2960.00	0.984	0.030	1.000	2967.50	0.956	0.000	1.000
2960.25	0.949	0.044	0.925	2967.75	0.937	0.000	1.000
2960.50	0.967	0.028	1.000	2968.00	0.920	0.000	1.000
2960.75	0.942	0.014	1.000	2968.25	0.909	0.000	1.000
2961.00	0.955	0.008	1.000	2968.50	0.935	0.000	1.000
2961.25	0.981	0.001	1.000	2968.75	0.995	0.000	1.000
2961.50	1.000	0.000	1.000	2969.00	1.000	0.000	0.954
2961.75	1.000	0.000	1.000	2969.25	1.000	0.000	1.000
2962.00	0.996	0.000	1.000	2969.50	1.000	0.000	1.000
2962.25	0.981	0.011	1.000	2969.75	1.000	0.000	1.000
2962.50	0.930	0.020	1.000	2970.00	0.960	0.001	1.000
2962.75	0.887	0.022	1.000	2970.25	0.985	0.000	1.000
2963.00	0.895	0.015	1.000	2970.50	1.000	0.000	1.000
2963.25	0.887	0.017	1.000	2970.75	1.000	0.000	1.000
2963.50	0.845	0.038	0.946	2971.00	1.000	0.000	1.000
2963.75	0.889	0.016	1.000	2971.25	1.000	0.000	1.000
2964.00	1.000	0.000	1.000	2971.50	1.000	0.000	1.000
2964.25	1.000	0.000	1.000	2971.75	0.983	0.000	1.000
2964.50	0.991	0.000	1.000	2972.00	1.000	0.000	1.000
2964.75	0.980	0.001	1.000	2972.25	1.000	0.000	1.000
2965.00	1.000	0.000	1.000	2972.50	0.962	0.001	1.000
2965.25	1.000	0.000	1.000	2972.75	0.918	0.009	1.000
2965.50	1.000	0.000	0.899	2973.00	0.881	0.015	1.000
2965.75	1.000	0.000	0.786	2973.25	0.922	0.013	1.000
2966.00	1.000	0.000	0.795	2973.50	0.930	0.010	1.000
2966.25	1.000	0.000	0.801	2973.75	1.000	0.000	1.000
2966.50	0.987	0.024	0.901	2974.00	0.973	0.002	1.000
2966.75	0.927	0.008	1.000	2974.25	0.991	0.000	1.000
2967.00	0.967	0.000	1.000	2974.50	1.000	0.000	1.000
2967.25	0.990	0.000	1.000	2974.75	1.000	0.000	1.000

DEPTH	VSH	PHIF	SW	DEPTH	VSH	PHIF	SW
2975.00	1.000	0.000	1.000	2982.50	0.552	0.151	0.738
2975.25	0.973	0.000	1.000	2982.75	0.547	0.158	0.734
2975.50	0.949	0.002	1.000	2983.00	0.549	0.153	0.742
2975.75	0.973	0.000	1.000	2983.25	0.564	0.146	0.733
2976.00	1.000	0.000	1.000	2983.50	0.579	0.127	0.770
2976.25	1.000	0.000	1.000	2983.75	0.624	0.108	0.795
2976.50	1.000	0.000	1.000	2984.00	0.628	0.090	0.830
2976.75	1.000	0.000	1.000	2984.25	0.921	0.084	0.839
2977.00	1.000	0.000	1.000	2984.50	0.653	0.071	0.876
2977.25	1.000	0.000	1.000	2984.75	0.689	0.061	0.903
2977.50	1.000	0.000	1.000	2985.00	0.673	0.060	0.903
2977.75	0.996	0.000	1.000	2985.25	0.674	0.058	0.901
2978.00	0.801	0.000	1.000	2985.50	0.699	0.046	0.960
2978.25	0.742	0.000	1.000	2985.75	0.696	0.035	1.000
2978.50	0.754	0.006	1.000	2986.00	0.666	0.029	1.000
2978.75	0.720	0.027	1.000	2986.25	0.769	0.017	1.000
2979.00	0.733	0.031	1.000	2986.50	0.840	0.014	0.997
2979.25	0.789	0.031	1.000	2986.75	0.743	0.035	0.908
2979.50	0.805	0.034	1.000	2987.00	0.574	0.055	0.902
2979.75	0.789	0.045	0.933				
2980.00	0.785	0.035	1.000				
2980.25	0.800	0.010	1.000	2987.25	0.540	0.059	0.919
2980.50	0.915	0.000	1.000	2987.50	0.560	0.058	0.972
2980.75	0.784	0.000	1.000	2987.75	0.584	0.054	1.000
2981.00	0.614	0.000	1.000	2988.00	0.544	0.070	0.966
				2988.25	0.517	0.090	0.887
				2988.50	0.552	0.101	0.846
2981.25	0.710	0.000	1.000	2988.75	0.548	0.109	0.828
2981.50	0.877	0.000	1.000	2989.00	0.498	0.118	0.819
2981.75	0.968	0.000	1.000	2989.25	0.503	0.117	0.820
2982.00	0.797	0.040	1.000	2989.50	0.503	0.115	0.836
2982.25	0.615	0.118	0.823	2989.75	0.508	0.112	0.821

DEPTH	VSH	PHIF	SW	DEPTH	VSH	PHIF	SW
2990.00	0.499	0.110	0.803	2997.50	1.000	0.000	0.834
2990.25	0.495	0.104	0.824	2997.75	1.000	0.000	0.610
2990.50	0.551	0.088	0.929	2998.00	1.000	0.000	1.000
2990.75	0.641	0.069	1.000	2998.25	1.000	0.000	0.472
2991.00	0.939	0.017	1.000	2998.50	1.000	0.000	0.650
2991.25	1.000	0.000	1.000	2998.75	1.000	0.000	0.894
2991.50	1.000	0.000	0.747	2999.00	1.000	0.000	1.000
2991.75	1.000	0.000	1.000				
2992.00	1.000	0.000	1.000				
2992.25	0.870	0.000	1.000				
2992.50	0.826	0.000	1.000	2999.25	0.999	0.000	1.000
2992.75	0.602	0.252	0.478	2999.50	0.847	0.000	1.000
2993.00	0.254	0.176	0.766	2999.75	0.661	0.018	1.000
				3000.00	0.607	0.000	1.000
				3000.25	0.858	0.000	1.000
				3000.50	0.814	0.000	1.000
				3000.75	0.486	0.012	1.000
				3001.00	0.520	0.000	1.000
				3001.25	0.734	0.000	1.000
				3001.50	0.456	0.000	1.000
				3001.75	0.229	0.000	1.000
				3002.00	0.162	0.003	1.000
				3002.25	0.147	0.060	1.000
				3002.50	0.149	0.100	1.000
				3002.75	0.186	0.133	0.973
				3003.00	0.238	0.141	0.987
				3003.25	0.202	0.154	0.980
				3003.50	0.143	0.171	0.919
				3003.75	0.100	0.172	0.934
				3004.00	0.164	0.164	0.983
				3004.25	0.265	0.150	1.000
				3004.50	0.170	0.169	0.987
				3004.75	0.105	0.184	0.937
2993.25	0.067	0.192	0.768				
2993.50	0.125	0.195	0.762				
2993.75	0.424	0.000	1.000				
2994.00	0.937	0.000	1.000				
2994.25	1.000	0.000	1.000				
2994.50	1.000	0.000	1.000				
2994.75	0.912	0.061	1.000				
2995.00	0.935	0.114	0.702				
2995.25	1.000	0.000	0.312				
2995.50	1.000	0.000	1.000				
2995.75	1.000	0.000	1.000				
2996.00	1.000	0.000	0.409				
2996.25	1.000	0.000	0.460				
2996.50	1.000	0.000	0.498				
2996.75	1.000	0.000	1.000				
2997.00	1.000	0.000	1.000				
2997.25	1.000	0.000	1.000				

DEPTH	VSH	PHIF	SW	DEPTH	VSH	PHIF	SW
3005.00	0.081	0.195	0.908	3012.50	0.046	0.198	1.000
3005.25	0.009	0.204	0.864	3012.75	0.040	0.200	1.000
3005.50	0.011	0.220	0.791	3013.00	0.004	0.210	0.944
3005.75	0.099	0.214	0.806	3013.25	0.004	0.216	0.936
3006.00	0.146	0.224	0.785	3013.50	0.069	0.207	0.972
3006.25	0.157	0.245	0.740	3013.75	0.098	0.198	1.000
3006.50	0.167	0.239	0.779	3014.00	0.032	0.200	1.000
3006.75	0.142	0.225	0.843	3014.25	0.003	0.206	0.998
3007.00	0.039	0.225	0.837	3014.50	0.007	0.213	1.000
3007.25	0.034	0.204	0.893	3014.75	0.020	0.213	1.000
3007.50	0.074	0.169	1.000	3015.00	0.014	0.209	1.000
3007.75	0.075	0.136	1.000	3015.25	0.018	0.215	1.000
3008.00	0.061	0.140	1.000	3015.50	0.035	0.222	1.000
3008.25	0.043	0.159	1.000	3015.75	0.000	0.228	0.976
3008.50	0.031	0.185	1.000	3016.00	0.000	0.228	0.934
3008.75	0.013	0.205	0.969	3016.25	0.032	0.227	0.886
3009.00	0.030	0.211	0.943	3016.50	0.503	0.170	0.971
3009.25	0.126	0.203	0.963	3016.75	1.000	0.000	0.841
3009.50	0.151	0.196	0.979	3017.00	1.000	0.000	0.632
3009.75	0.129	0.193	0.985	3017.25	1.000	0.000	0.389
3010.00	0.126	0.191	0.969	3017.50	1.000	0.000	1.000
3010.25	0.123	0.195	0.931	3017.75	1.000	0.000	1.000
3010.50	0.112	0.197	0.927	3018.00	1.000	0.000	1.000
3010.75	0.109	0.196	0.936	3018.25	1.000	0.000	1.000
3011.00	0.147	0.189	0.967	3018.50	1.000	0.000	1.000
3011.25	0.124	0.189	0.954	3018.75	1.000	0.000	1.000
3011.50	0.127	0.190	0.962	3019.00	0.788	0.000	1.000
3011.75	0.154	0.186	1.000	3019.25	0.931	0.000	1.000
3012.00	0.146	0.183	1.000	3019.50	1.000	0.000	1.000
3012.25	0.094	0.188	1.000	3019.75	1.000	0.000	0.482

DEPTH	VSH	PHIF	SW	DEPTH	VSH	PHIF	SW
3020.00	1.000	0.000	0.679	3027.50	1.000	0.000	1.000
3020.25	1.000	0.000	0.782	3027.75	1.000	0.000	1.000
3020.50	0.759	0.000	1.000	3028.00	1.000	0.000	1.000
3020.75	0.701	0.000	1.000	3028.25	0.845	0.233	0.379
3021.00	0.884	0.000	1.000	3028.50	0.379	0.263	0.312
3021.25	1.000	0.000	1.000	3028.75	0.324	0.160	0.493
3021.50	1.000	0.000	0.260	3029.00	0.549	0.107	0.664
3021.75	1.000	0.000	0.289	3029.25	0.329	0.199	0.591
3022.00	1.000	0.000	0.385	3029.50	0.175	0.320	0.396
3022.25	0.992	0.000	0.553	3029.75	0.523	0.000	1.000
3022.50	1.000	0.000	0.669	3030.00	0.743	0.000	1.000
3022.75	1.000	0.000	1.000	3030.25	0.728	0.000	1.000
3023.00	1.000	0.000	1.000	3030.50	0.829	0.000	1.000
3023.25	1.000	0.000	1.000	3030.75	0.843	0.000	1.000
3023.50	1.000	0.000	0.465	3031.00	0.835	0.197	0.455
3023.75	1.000	0.000	0.729	3031.25	0.719	0.107	0.812
3024.00	1.000	0.000	0.756	3031.50	0.668	0.068	1.000
3024.25	1.000	0.000	1.000	3031.75	0.663	0.061	1.000
3024.50	1.000	0.000	1.000	3032.00	0.713	0.052	1.000
3024.75	1.000	0.000	1.000	3032.25	0.781	0.043	1.000
3025.00	1.000	0.000	1.000	3032.50	0.879	0.043	1.000
3025.25	1.000	0.000	1.000	3032.75	1.000	0.000	1.000
3025.50	1.000	0.000	1.000	3033.00	1.000	0.000	1.000
3025.75	1.000	0.000	0.426	3033.25	1.000	0.000	1.000
3026.00	1.000	0.000	0.684	3033.50	0.959	0.000	1.000
3026.25	1.000	0.000	0.639	3033.75	0.723	0.000	1.000
3026.50	1.000	0.000	0.475	3034.00	0.492	0.000	1.000
3026.75	1.000	0.000	0.398	3034.25	0.467	0.221	0.449
3027.00	1.000	0.000	0.363				
3027.25	1.000	0.000	1.000				
				3034.50	0.248	0.228	0.453
				3034.75	0.045	0.211	0.512

DEPTH	VSH	PHIF	SW	DEPTH	VSH	PHIF	SW
3035.00	0.006	0.186	0.632	3042.50	0.163	0.185	0.944
3035.25	0.081	0.172	0.822	3042.75	0.019	0.205	0.870
3035.50	0.113	0.175	0.836	3043.00	0.000	0.197	0.859
3035.75	0.045	0.192	0.787	3043.25	0.074	0.172	0.926
3036.00	0.009	0.204	0.757	3043.50	0.138	0.149	0.995
3036.25	0.030	0.201	0.764	3043.75	0.091	0.151	0.969
3036.50	0.059	0.193	0.790	3044.00	0.069	0.148	0.983
3036.75	0.052	0.193	0.805	3044.25	0.106	0.139	1.000
3037.00	0.038	0.191	0.803	3044.50	0.120	0.139	1.000
3037.25	0.059	0.184	0.840	3044.75	0.158	0.137	1.000
3037.50	0.081	0.181	0.852	3045.00	0.158	0.140	1.000
3037.75	0.104	0.180	0.878	3045.25	0.134	0.146	0.959
3038.00	0.140	0.173	0.884	3045.50	0.101	0.159	0.900
3038.25	0.157	0.168	0.875	3045.75	0.057	0.168	0.870
3038.50	0.150	0.154	0.957	3046.00	0.068	0.167	0.850
3038.75	0.158	0.135	1.000	3046.25	0.200	0.150	0.767
3039.00	0.164	0.134	1.000				
3039.25	0.152	0.146	0.997	3046.50	0.264	0.143	1.000
3039.50	0.206	0.148	1.000	3046.75	0.215	0.150	0.981
3039.75	0.233	0.148	0.993	3047.00	0.217	0.146	0.982
3040.00	0.179	0.163	0.922	3047.25	0.191	0.142	1.000
3040.25	0.119	0.183	0.865	3047.50	0.148	0.148	1.000
				3047.75	0.148	0.156	0.894
3040.50	0.089	0.185	0.865	3048.00	0.139	0.146	0.881
3040.75	0.078	0.191	0.869	3048.25	0.268	0.095	1.000
3041.00	0.068	0.200	0.857	3048.50	0.548	0.039	1.000
3041.25	0.093	0.204	0.861	3048.75	0.731	0.002	1.000
3041.50	0.077	0.208	0.856	3049.00	0.704	0.000	1.000
3041.75	0.051	0.204	0.905	3049.25	0.670	0.001	1.000
3042.00	0.017	0.200	0.927	3049.50	0.580	0.009	1.000
3042.25	0.039	0.195	0.950	3049.75	0.689	0.021	1.000

DEPTH	VSH	PHIF	SW	DEPTH	VSH	PHIF	SW
3050.00	0.682	0.033	1.000	3058.50	0.339	0.111	0.870
3050.25	0.629	0.044	1.000	3058.75	0.364	0.105	0.939
3050.50	0.602	0.048	1.000	3059.00	0.463	0.076	1.000
3050.75	0.593	0.043	1.000	3059.25	0.537	0.057	1.000
3051.00	0.573	0.039	1.000	3059.50	0.540	0.057	1.000
3051.25	0.595	0.039	1.000	3059.75	0.474	0.075	1.000
3051.50	0.599	0.037	1.000	3060.00	0.390	0.108	1.060
3051.75	0.596	0.032	1.000	3060.25	0.288	0.137	1.000
3052.00	0.635	0.030	1.000	3060.50	0.248	0.141	1.000
3052.25	0.644	0.032	1.000	3060.75	0.306	0.114	1.000
				3061.00	0.327	0.099	1.000
3052.50	0.626	0.034	1.000	3061.25	0.334	0.101	1.000
3052.75	0.616	0.037	1.000	3061.50	0.393	0.102	1.000
3053.00	0.564	0.049	1.000	3061.75	0.351	0.122	1.000
3053.25	0.519	0.065	1.000	3062.00	0.281	0.138	1.000
3053.50	0.486	0.077	1.000	3062.25	0.257	0.137	0.989
3053.75	0.501	0.070	1.000	3062.50	0.261	0.117	1.000
3054.00	0.505	0.064	1.000	3062.75	0.346	0.080	1.000
3054.25	0.524	0.058	1.000	3063.00	0.425	0.066	1.000
3054.50	0.569	0.062	1.000	3063.25	0.385	0.093	1.000
3054.75	0.494	0.086	0.988	3063.50	0.345	0.110	1.000
3055.00	0.390	0.107	0.899	3063.75	0.334	0.108	1.000
3055.25	0.411	0.097	0.945	3064.00	0.395	0.074	1.000
3055.50	0.445	0.085	0.994	3064.25	0.495	0.041	1.000
3055.75	0.474	0.070	1.000	3064.50	0.555	0.035	1.000
3056.00	0.490	0.060	1.000	3064.75	0.645	0.019	1.000
3056.25	0.520	0.057	1.000				
3056.50	0.522	0.057	1.000				
3056.75	0.557	0.046	1.000				
3057.00	0.636	0.036	1.000				
3057.25	0.650	0.028	1.000				

DEPTH	VSH	PHIF	SW	DEPTH	VSH	PHIF	SW
3065.00	0.840	0.000	1.000	3072.50	0.244	0.166	1.000
3065.25	0.928	0.000	1.000	3072.75	0.237	0.176	0.977
3065.50	0.677	0.000	1.000	3073.00	0.174	0.182	0.956
3065.75	0.549	0.014	1.000	3073.25	0.138	0.177	0.960
3066.00	0.433	0.057	1.000	3073.50	0.167	0.166	0.997
3066.25	0.352	0.086	1.000	3073.75	0.159	0.162	1.000
3066.50	0.302	0.105	1.000	3074.00	0.149	0.160	1.000
3066.75	0.259	0.119	1.000	3074.25	0.150	0.162	1.000
3067.00	0.208	0.120	1.000	3074.50	0.163	0.174	0.978
3067.25	0.236	0.100	1.000	3074.75	0.170	0.184	0.887
3067.50	0.248	0.086	1.000	3075.00	0.229	0.163	0.939
3067.75	0.223	0.081	1.000	3075.25	0.177	0.131	1.000
3068.00	0.197	0.068	1.000	3075.50	0.163	0.093	1.000
3068.25	0.236	0.051	1.000	3075.75	0.178	0.075	1.000
3068.50	0.228	0.056	1.000	3076.00	0.221	0.110	1.000
3068.75	0.191	0.089	1.000	3076.25	0.197	0.149	1.000
3069.00	0.222	0.113	1.000	3076.50	0.216	0.158	0.998
3069.25	0.217	0.141	1.000	3076.75	0.232	0.151	1.000
3069.50	0.221	0.157	1.000	3077.00	0.237	0.133	1.000
3069.75	0.254	0.159	0.999	3077.25	0.238	0.108	1.000
3070.00	0.225	0.165	0.967	3077.50	0.351	0.064	1.000
3070.25	0.166	0.169	0.943	3077.75	0.240	0.042	1.000
3070.50	0.142	0.166	0.933	3078.00	0.193	0.064	1.000
3070.75	0.150	0.161	0.928	3078.25	0.209	0.099	1.000
3071.00	0.133	0.149	0.944	3078.50	0.208	0.130	1.000
3071.25	0.175	0.138	0.980	3078.75	0.213	0.138	1.000
3071.50	0.193	0.122	1.000	3079.00	0.234	0.147	1.000
3071.75	0.262	0.097	1.000	3079.25	0.254	0.150	1.000
3072.00	0.380	0.082	1.000	3079.50	0.161	0.164	0.979
3072.25	0.316	0.124	1.000	3079.75	0.169	0.165	0.950

DEPTH	VSH	PHIF	SW	DEPTH	VSH	PHIF	SW
3080.00	0.212	0.163	0.904	3087.50	0.183	0.183	0.958
3080.25	0.254	0.141	0.923	3087.75	0.195	0.156	1.000
3080.50	0.367	0.088	1.000	3088.00	0.201	0.128	1.000
3080.75	0.495	0.024	1.000	3088.25	0.178	0.117	1.000
3081.00	0.708	0.000	1.000	3088.50	0.169	0.128	1.000
3081.25	0.830	0.000	1.000	3088.75	0.188	0.129	1.000
3081.50	0.838	0.000	1.000	3089.00	0.198	0.138	1.000
3081.75	0.873	0.000	1.000	3089.25	0.225	0.147	1.000
3082.00	0.896	0.000	1.000	3089.50	0.201	0.156	1.000
3082.25	0.809	0.000	1.000	3089.75	0.179	0.140	1.000
3082.50	0.575	0.032	1.000	3090.00	0.172	0.102	1.000
3082.75	0.330	0.104	1.000	3090.25	0.159	0.069	1.000
3083.00	0.204	0.143	0.995	3090.50	0.130	0.083	1.000
3083.25	0.144	0.163	0.952	3090.75	0.154	0.127	1.000
3083.50	0.153	0.167	0.972	3091.00	0.200	0.160	0.967
3083.75	0.154	0.168	0.995	3091.25	0.182	0.177	0.905
3084.00	0.129	0.176	0.961	3091.50	0.160	0.181	0.887
3084.25	0.146	0.180	0.934	3091.75	0.144	0.172	0.906
3084.50	0.169	0.171	0.970	3092.00	0.153	0.158	0.942
3084.75	0.192	0.161	1.000	3092.25	0.194	0.133	1.000
3085.00	0.172	0.159	1.000	3092.50	0.272	0.107	1.000
3085.25	0.186	0.163	1.000	3092.75	0.373	0.113	1.000
3085.50	0.184	0.165	1.000	3093.00	0.310	0.151	1.000
3085.75	0.180	0.172	1.000	3093.25	0.190	0.189	0.896
3086.00	0.165	0.175	1.000	3093.50	0.200	0.182	0.888
3086.25	0.150	0.177	1.000				
3086.50	0.158	0.169	1.000	3093.75	0.261	0.141	1.000
3086.75	0.178	0.170	1.000	3094.00	0.238	0.106	1.000
3087.00	0.169	0.181	1.000	3094.25	0.205	0.091	1.000
3087.25	0.168	0.185	0.974	3094.50	0.216	0.079	1.000
				3094.75	0.180	0.076	1.000

DEPTH	VSH	PHIF	SW	DEPTH	VSH	PHIF	SW
3095.00	0.200	0.060	1.000	3102.50	0.232	0.193	0.700
3095.25	0.234	0.036	1.000	3102.75	0.287	0.153	0.874
3095.50	0.210	0.012	1.000	3103.00	0.361	0.088	1.000
3095.75	0.192	0.000	1.000	3103.25	0.497	0.028	1.000
3096.00	0.205	0.031	1.000	3103.50	0.589	0.012	1.000
3096.25	0.201	0.087	1.000	3103.75	0.644	0.002	1.000
3096.50	0.179	0.150	1.000	3104.00	0.630	0.000	1.000
3096.75	0.181	0.181	1.000	3104.25	0.623	0.010	1.000
3097.00	0.165	0.192	0.979	3104.50	0.644	0.014	1.000
3097.25	0.162	0.191	0.973	3104.75	0.724	0.001	1.000
3097.50	0.122	0.190	0.955	3105.00	0.693	0.000	1.000
3097.75	0.127	0.189	0.927	3105.25	0.624	0.000	1.000
3098.00	0.185	0.179	0.930	3105.50	0.684	0.000	1.000
3098.25	0.153	0.178	0.904				
3098.50	0.150	0.169	0.922				
3098.75	0.195	0.149	0.986				
3099.00	0.279	0.126	1.000	3105.75	0.870	0.000	1.000
3099.25	0.314	0.109	1.000	3106.00	0.923	0.000	1.000
3099.50	0.267	0.097	1.000	3106.25	0.838	0.000	1.000
				3106.50	0.778	0.000	1.000
				3106.75	0.889	0.000	1.000
				3107.00	1.000	0.000	1.000
3099.75	0.460	0.044	1.000	3107.25	1.000	0.000	1.000
3100.00	0.426	0.063	1.000	3107.50	0.812	0.015	1.000
3100.25	0.283	0.121	1.000	3107.75	0.496	0.087	1.000
3100.50	0.251	0.142	1.000	3108.00	0.354	0.133	1.000
3100.75	0.285	0.134	1.000	3108.25	0.325	0.138	0.963
3101.00	0.285	0.124	1.000	3108.50	0.331	0.115	1.000
3101.25	0.283	0.128	1.000	3108.75	0.356	0.078	1.000
3101.50	0.263	0.159	1.000	3109.00	0.354	0.047	1.000
3101.75	0.265	0.187	0.907	3109.25	0.365	0.015	1.000
3102.00	0.231	0.194	0.887	3109.50	0.359	0.000	1.000
3102.25	0.202	0.198	0.847	3109.75	0.347	0.000	1.000

DEPTH	VSH	PHIF	SU	DEPTH	VSH	PHIF	SU
3110.00	0.252	0.042	1.000	3117.50	0.843	0.002	1.000
3110.25	0.208	0.086	1.000				
3110.50	0.244	0.119	1.000	3117.75	0.354	0.000	1.000
3110.75	0.230	0.134	1.000	3118.00	0.911	0.000	1.000
3111.00	0.218	0.144	1.000	3118.25	0.912	0.000	1.000
3111.25	0.265	0.142	1.000	3118.50	0.958	0.000	1.000
3111.50	0.326	0.128	1.000	3118.75	0.942	0.000	1.000
				3119.00	0.899	0.000	1.000
3111.75	0.317	0.118	1.000	3119.25	0.877	0.000	1.000
3112.00	0.296	0.122	1.000	3119.50	0.940	0.000	1.000
3112.25	0.248	0.125	1.000	3119.75	0.898	0.000	1.000
3112.50	0.211	0.123	1.000	3120.00	0.880	0.000	1.000
3112.75	0.223	0.102	1.000	3120.25	0.939	0.000	1.000
3113.00	0.237	0.095	1.000	3120.50	0.942	0.000	1.000
3113.25	0.361	0.068	1.000	3120.75	0.920	0.001	1.000
3113.50	0.619	0.027	1.000	3121.00	0.958	0.000	1.000
3113.75	0.695	0.011	1.000	3121.25	0.962	0.000	1.000
3114.00	0.710	0.005	1.000	3121.50	0.950	0.000	1.000
3114.25	0.694	0.006	1.000	3121.75	0.952	0.000	1.000
3114.50	0.678	0.009	1.000	3122.00	0.943	0.000	1.000
3114.75	0.681	0.018	1.000	3122.25	0.964	0.000	1.000
3115.00	0.669	0.043	1.000	3122.50	0.920	0.016	1.000
3115.25	0.448	0.084	1.000	3122.75	0.999	0.000	1.000
3115.50	0.360	0.086	1.000	3123.00	1.000	0.000	1.000
3115.75	0.453	0.056	1.000	3123.25	1.000	0.000	1.000
3116.00	0.537	0.040	1.000	3123.50	1.000	0.000	1.000
3116.25	0.572	0.040	1.000	3123.75	1.000	0.000	1.000
3116.50	0.686	0.031	1.000	3124.00	1.000	0.000	1.000
3116.75	0.794	0.015	1.000	3124.25	0.963	0.010	1.000
3117.00	0.859	0.004	1.000	3124.50	1.000	0.000	1.000
3117.25	0.582	0.000	1.000	3124.75	1.000	0.000	1.000

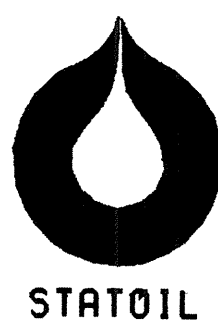
DEPTH	VSH	PHIF	SW	DEPTH	VSH	PHIF	SW
3125.00	1.000	0.000	1.000	3132.50	0.954	0.000	1.000
3125.25	1.000	0.000	1.000	3132.75	0.970	0.000	1.000
3125.50	1.000	0.000	1.000	3133.00	1.000	0.000	1.000
3125.75	1.000	0.000	1.000	3133.25	0.967	0.000	1.000
3126.00	1.000	0.000	1.000	3133.50	0.844	0.005	1.000
3126.25	1.000	0.000	1.000	3133.75	0.908	0.000	1.000
3126.50	1.000	0.000	1.000	3134.00	1.000	0.000	1.000
3126.75	1.000	0.000	1.000	3134.25	0.966	0.000	1.000
3127.00	1.000	0.000	1.000	3134.50	0.921	0.000	1.000
3127.25	1.000	0.000	1.000	3134.75	0.868	0.000	1.000
3127.50	1.000	0.000	0.999	3135.00	0.898	0.000	1.000
3127.75	1.000	0.000	1.000	3135.25	0.924	0.000	1.000
3128.00	1.000	0.000	1.000	3135.50	0.884	0.000	1.000
3128.25	0.914	0.000	1.000	3135.75	0.900	0.000	1.000
3128.50	0.839	0.000	1.000	3136.00	0.912	0.000	1.000
3128.75	0.856	0.000	1.000	3136.25	0.888	0.000	1.000
3129.00	0.881	0.000	1.000	3136.50	0.912	0.006	1.000
3129.25	0.927	0.002	1.000	3136.75	1.000	0.000	1.000
3129.50	0.933	0.000	1.000	3137.00	1.000	0.000	1.000
3129.75	0.931	0.004	1.000	3137.25	1.000	0.000	1.000
3130.00	0.960	0.001	1.000	3137.50	1.000	0.000	1.000
3130.25	0.991	0.000	1.000	3137.75	1.000	0.000	1.000
3130.50	0.954	0.011	1.000	3138.00	0.995	0.000	1.000
3130.75	0.964	0.013	1.000	3138.25	1.000	0.000	1.000
3131.00	1.000	0.000	1.000	3138.50	1.000	0.000	1.000
3131.25	1.000	0.000	1.000	3138.75	1.000	0.000	1.000
3131.50	1.000	0.000	1.000	3139.00	1.000	0.000	1.000
3131.75	1.000	0.000	1.000	3139.25	1.000	0.000	1.000
3132.00	1.000	0.000	1.000	3139.50	1.000	0.000	1.000
3132.25	0.962	0.000	1.000	3139.75	1.000	0.000	1.000

DEPTH	VSH	PHIF	SW	DEPTH	VSH	PHIF	SW
3140.00	1.000	0.000	1.000	3147.50	1.000	0.000	1.000
3140.25	1.000	0.000	1.000	3147.75	1.000	0.000	1.000
3140.50	1.000	0.000	1.000	3148.00	1.000	0.000	1.000
3140.75	0.981	0.005	1.000	3148.25	1.000	0.000	1.000
3141.00	1.000	0.000	1.000	3148.50	1.000	0.000	1.000
3141.25	1.000	0.000	1.000	3148.75	0.962	0.000	1.000
3141.50	1.000	0.000	1.000	3149.00	0.840	0.000	1.000
3141.75	1.000	0.000	1.000	3149.25	0.838	0.000	1.000
3142.00	1.000	0.000	1.000	3149.50	0.822	0.004	1.000
3142.25	1.000	0.000	1.000	3149.75	0.704	0.011	1.000
3142.50	1.000	0.000	1.000	3150.00	0.671	0.023	1.000
3142.75	1.000	0.000	1.000				
3143.00	1.000	0.000	1.000				
3143.25	1.000	0.000	1.000				
3143.50	1.000	0.000	1.000				
3143.75	1.000	0.000	1.000				
3144.00	1.000	0.000	1.000				
3144.25	1.000	0.000	1.000				
3144.50	1.000	0.000	1.000				
3144.75	1.000	0.000	1.000				
3145.00	1.000	0.000	1.000				
3145.25	1.000	0.000	1.000				
3145.50	1.000	0.000	1.000				
3145.75	1.000	0.000	1.000				
3146.00	1.000	0.000	1.000				
3146.25	1.000	0.000	1.000				
3146.50	1.000	0.000	1.000				
3146.75	1.000	0.000	1.000				
3147.00	1.000	0.000	1.000				
3147.25	1.000	0.000	1.000				

GRAPHICAL LOG-PRESENTATION

WELL : 30-3-3HB **DEPTH INTERVAL :** 2960.00-3150.00 (METER)

ENGINEER : HB **SCALE :** 1:200



DATE: 11.39.56 18 NOVEMBER 1983

STRATIGRAPHY (REF. RKB=22M)

TOP UPPER JURASSIC	2663.0M
TOP KIMMERIDGE SHALE	2663.0M
TOP HEATHER FORMATION	2763.0M
TOP BRENT FORMATION	2978.0M
TOP NESS MB.	2978.0M
TOP ETIVE MB.	3034.0M
TOP DUNLIN GROUP	3048.0M
TOP DRAKE FORMATION	3048.0M
TOP DUNLIN SHALE	3116.0M

PETROPHYSICAL EVALUATION

INPUT PARAMETERS

(2950M-3034M RKB)

RM=0.070	RMF=0.091	ASH=10.0	PHINSH=0.38	TEMP= 116 (DEG C)
M=2	N=2	A=1	AHOBSH=2.57	

STATISTICS

INTERVAL (BRENT-DRAKE FM.)	AVG VSH	AVG PHIF	AVG SW
2978.0 - 3116.0 M (RKB)	0.44	0.10	0.94
GROSS THICKNESS	138.00 M		
NET SAND (VSH<0.40 PHIF>0.12)	56.50 M	0.17	0.93
NET PAY (VSH<0.40 PHIF>0.12 SW<0.60)	1.75 M		
INTERVAL (NESS?)			
2979.0 - 3034.0 M (RKB)	0.61	0.10	0.88
GROSS THICKNESS	56.00 M		
NET SAND (VSH<0.40 PHIF>0.12)	15.50 M	0.20	0.91
NET PAY (VSH<0.40 PHIF>0.12 SW<0.65)	1.30 M		
INTERVAL (ETIVE)			
3034.0 - 3048.0 M (RKB)	0.12	0.17	0.88
GROSS THICKNESS	14.00 M		
NET SAND (VSH<0.40 PHIF>0.12)	13.50 M	0.17	0.89
NET PAY (VSH<0.40 PHIF>0.12 SW<0.65)	0.75 M		
INTERVAL (DRAKE FORMATION)			
3048.0 - 3116.0 M (RKB)	0.37	0.10	0.99
GROSS THICKNESS	68.00 M		
NET SAND (VSH<0.40 PHIF>0.12)	27.50 M	0.16	0.97
NET PAY (VSH<0.40 PHIF>0.12 SW<0.65)	0.00 M		

PREPARED BY HB

