GL04393_6

GEOTHERMAL LOG

NL Baroid
Baroid Logging Systems
P. O. BOX 1675 HOUSTON, TEXAS 77001

COMPANY SUNOCO ENERGY DEVELOPMENT CORPORATION

API No

WELL USA 11-36

FIELD WC-GRASS VALLEY

COUNTY PERSHING STATE NEVADA

Location

API No

Sec. 36 Twp 32 N Rge 38E

Other Services

Permanent Datum 4573 Elev

Log Measured From Ft. Above Perm. Datum

Drilling Measured From KB

Elev K.B 4600

D.F.

G.L. 4573

Logged 0 Ft 8565 Ft

Date Logged 5-15-80 To 7-1-80

Depth Measured From KB

Supv. Eng. J. MILLER

Type Mud GEL-BENEX

Unit No. ML7466

8565 Ft

To Ft

To Ft

To Ft

LEGEND

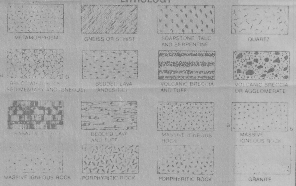
ABBREVIATIONS

NB	NEW BIT
NCB	NEW CORE BIT
CO	CIRCULATED OUT
DST	DRILL STEM TEST
LAT	LOGGED AFTER TRIP
TG	TRIP GAS
NR	NO RETURNS
DS	DIRECTIONAL SURVEY
DC	DEPTH CORRECTION
CKF	CHECK FOR FLOW
TCL	TRIP CHLORIDES

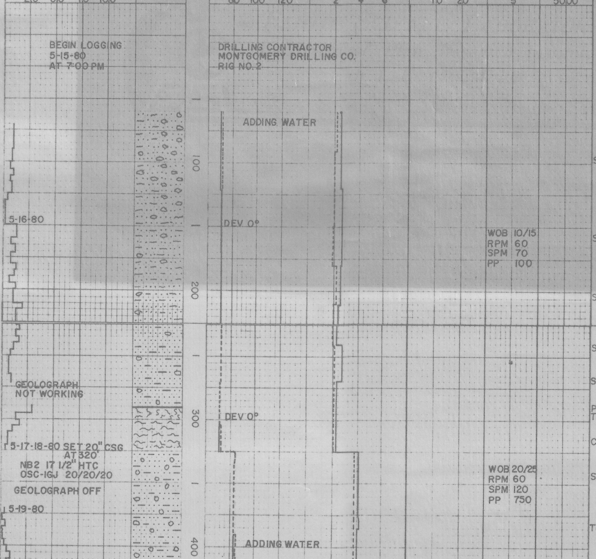
MUD CHARACTERISTICS

W	WEIGHT	LBS/GAL	LBS/CU FT
V	VISCOSITY, API SECONDS		
F	FILTRATE, API, CC S		
CK	FILTER CAKE		
S	SALINITY	PPM CL	GPG CL
Rm	MUD-RESISTIVITY, OHM-METER		
Rmf	MUD-FILTRATE RESISTIVITY, OHM-METER		

LITHOLOGY



DRILLING RATE ☐ FT PER HR ☒ MIN PER FT	LITHOLOGY	DEPTH	TEMPERATURE °F IN OUT	CONDUCTIVITY MUD IN OUT	BACKGROUND GAS HOT WIRE UNITS	H_2S PPM	CO_2 PPM	REMARKS
2.5 5.0 7.5 10.0			80 100 120	2 4 6	10 20	5	5000	



BEGIN LOGGING
5-15-80
AT 7:00 PM

DRILLING CONTRACTOR
MONTGOMERY DRILLING CO.
RIG NO. 2

ADDING WATER

5-16-80

DEV 0°

WOB 10/15
RPM 60
SPM 70
PP 100

GEOLOGRAPH NOT WORKING

DEV 0°

5-17-18-80 SET 20" CSG AT 320'
NB2 17 1/2" HTC
OSC-1GJ 20/20/20

GEOLOGRAPH OFF

5-19-80

WOB 20/25
RPM 60
SPM 120
PP 750

ADDING WATER

REMARKS

SED SND-GRAV, WHT, TAN, LG AMT SIL, CLR BOTRYOID QTZ, CALC I.P.

SED INCR CLY, VARI COL, SBANG-RND, BOTRY QTZ, FE STN

SED INCR CLY, INCR FRAG SIZE

SED PRED SND, FE & MN STN, DECR SIL

SED A/A, INCR CLY, SL CON SND

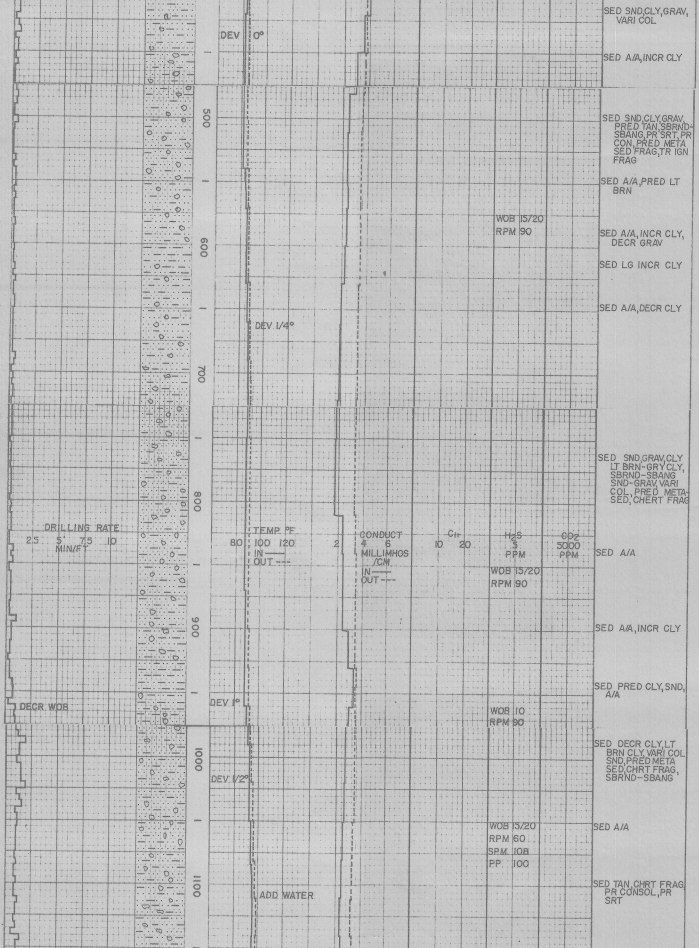
PROB FAULT

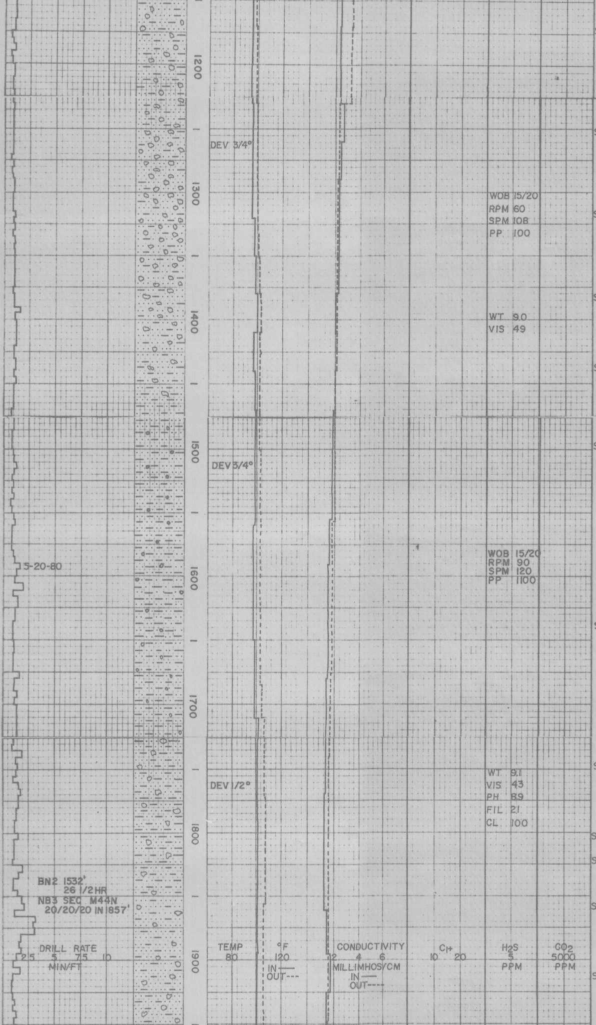
TR RECEMT ANG & RND QTZ FRAG, MYLONITIC CRYPTO QTZ

CRYPTO XLN QTZ, PRED BLU-GRN, MULTI COL, FE STN I.P., DENDRIT MN? STN I.P.

SIL TUFF, TAN, SILIC ALT, QTZ PHENO, ABNT LITHIC FRAG, SUB-PARALL COLLAPSD PUM, SEC QTZ, FE, MN LINE CAVITIES

TUFF SED-SL WLDED LITHIC TUFF, GRY-BRN, INCR SIL





WOB 15/20
RPM 60
SPM 108
PP 100

WT 9.0
VIS 49

WOB 15/20
RPM 90
SPM 120
PP 1100

WT 9.1
VIS 43
PH 8.9
FIL 21
CL 100

SED A/A

SED INCR GRAV, PRED META SED, CHRT FRAG

SED A/A, PRED BRN, GRY, INCR CHRT SND-GRAV FRAG

SED A/A

SED DECR GRAV, PRED GRN CLY, CALC I.P.

SND-CLY PRED GRN CLY, SBRND-SBANG SND, SND PRED META SED FRAG, V CALC I.P.

SND-CLY A/A

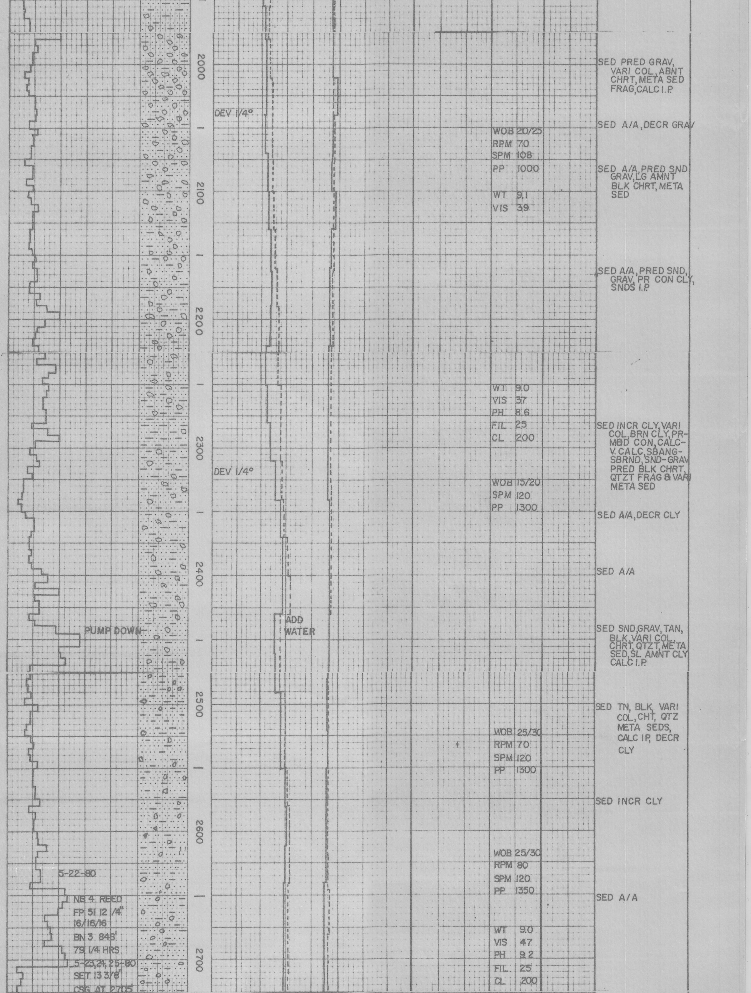
SED PRED GRN, GRN-GRY CLY, CALC I.P., MED CON. & VARI COL, SBRND-SBANG SND, PRED CHRT, META SED FRAG. TR IGN FRAG

SED A/A, PRED LT GRY CLY, TR GRAV

SED A/A, CLY PRED LT BRN

SED A/A, INCR SND

SED DECR GRN CLY, TAN-VARI COL SND-GRAV, CHRT, META SED, ANG-RND, PR SRT, CALC I.P.



SED PRED GRAV, VARI COL, ABNT CHRT, META SED FRAG, CALC I.P.

SED A/A, DECR GRAV

WOB 20/25
RPM 70
SPM 108
PP 1000

SED A/A, PRED SND GRAV, LG AMNT BLK CHRT, META SED

WT 9.1
VIS 39

SED A/A, PRED SND, GRAV, PR CON CLY, SNDS I.P.

WT 9.0
VIS 37
PH 8.6
FIL 25
CL 200

SED INCR CLY, VARI COL, BRN CLY, PR-MBD CON, CALC-V. CALC, SBANG-SBRND, SND-GRAV PRED BLK CHRT, QTZT FRAG & VARI META SED

WOB 15/20
SPM 120
PP 1300

SED A/A, DECR CLY

SED A/A

SED SND, GRAV, TAN, BLK, VARI COL, CHRT, QTZT, META SED, SL AMNT CLY CALC I.P.

SED TN, BLK, VARI COL, CHT, QTZ META SEDS, CALC I.P., DECR CLY

WOB 25/30
RPM 70
SPM 120
PP 1300

SED INCR CLY

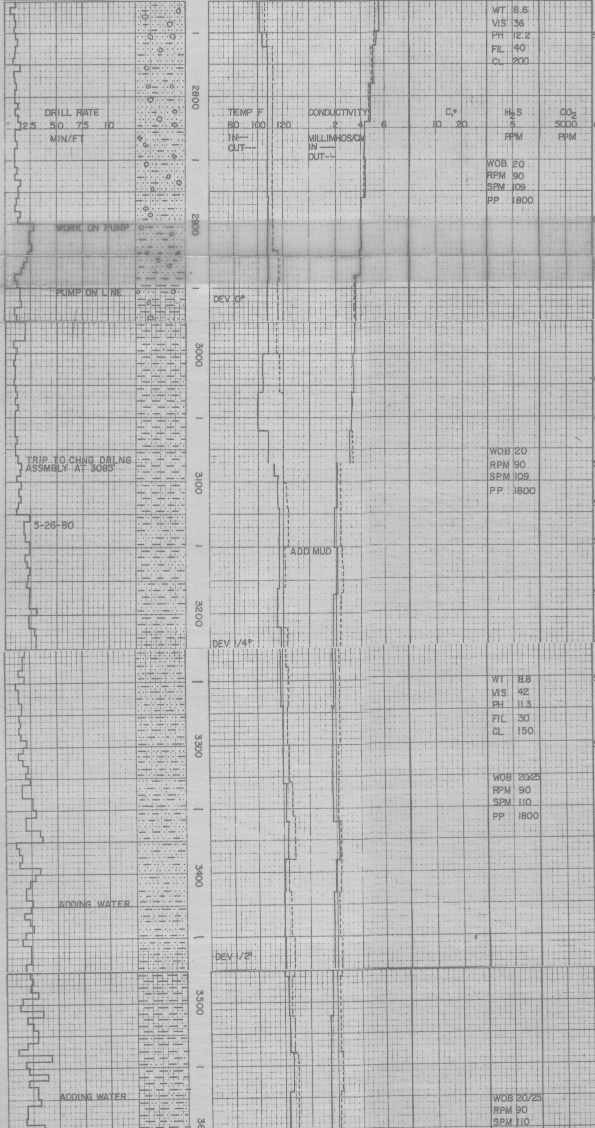
WOB 25/30
RPM 80
SPM 120
PP 1350

5-22-80

SED A/A

NB 4 REED
FP 51 12 1/4"
16/16/16
BN 3 848'
79 1/4 HRS
5-23,24,25-80
SET 13 3/8"
CSG AT 2705'

WT 9.0
VIS 47
PH 9.2
FIL. 25
CL 200



SED GRAV, MARLY, PRED QTZ-CHRT FRAG, PR CON, PR SRT, CALC

CLYST GY, W CON, W SRT, CALC, SFT TR SHEAR SLICKENSIDE, TR BIOT

CLYST INCR SLICK

SH GY, GY/GN, SL CALC, SLTY, TR PYR, SFT, GRDING TO CLY

CLYST GRY, BRN, CALC, SLTY, SFT, TR PYR

CLYST A/A, TR BIOT IN CLYST, INCR SH%

CLY BRN, GRADING TO SH, SFT, CALC, SLTY

SH GRY-GRN, BRN-LT BRN, BUFF, CALC, SLTY, SNDY I.P.

SH INCR BRN, SL CALC, A/A

SLTST-SS GRY, BRN, RED-BRN, CALC, TR PYR

SLT ST-SS A/A, TR CALC VNS

SH GY, RD-BRN, BRN, CALC IP, SFT-FRM

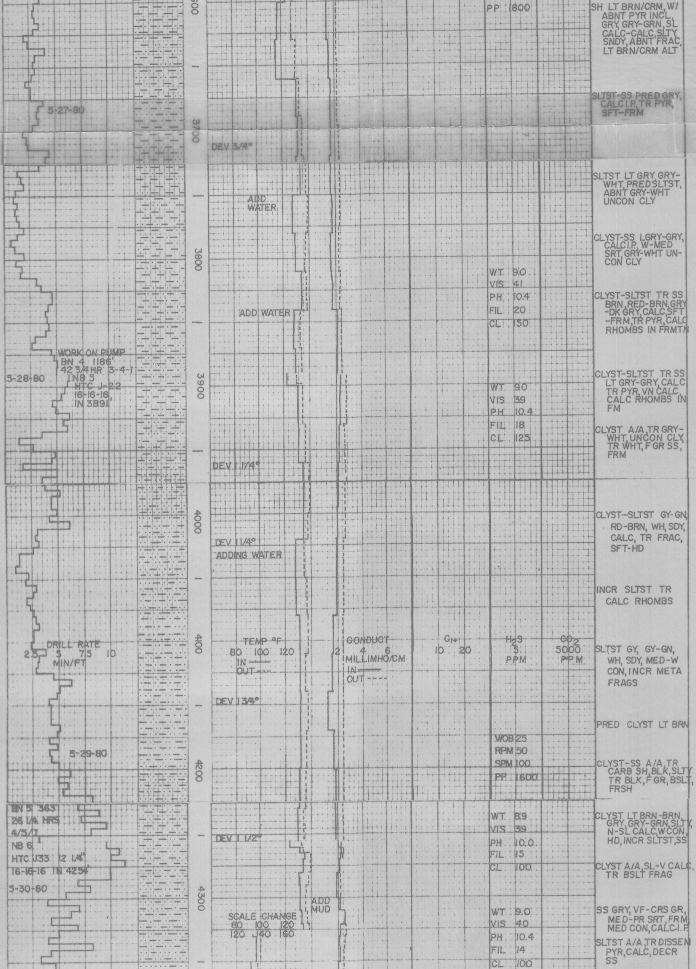
SLTST RD-BRN, GY, BRN, SDY, MED CON, SFT-FRM, CALC IP, TR PYR

SS CLR, WH, GN, GY, WH, MATRIX, W CMT, ANG, P SRT, F-CGR META FRAG INCL

SH WH, TR GY-GN, ALTERED FROM GY-GN

SH GRY-GRN, TR RD GRY, WHT, SLTY, SDY, N-SL CALC, TR PYR VNS

SH A/A, TR META SED FRAG



PP 1800

SH LT BRN/CRM, W/ ABNT PYR INCL, GRY, GRY-GRN, SL CALC-CALC, SLTY, SNDY, ABNT FRAC, LT BRN/CRM ALT

SLTST-SS PRED GRY, CALC I.P., TR PYR, SFT-FRM

SLTST LT GRY, GRY-WHT, PRED SLTST, ABNT GRY-WHT UNCON CLY

CLYST-SS LGRY-GRY, CALC I.P., W-MED SRT, GRY-WHT UNCON CLY

WT 9.0
VIS 41
PH 10.4
FIL 20
CL 150

CLYST-SLTST TR SS BRN, RED-BRN, GRY-DK GRY, CALC, SFT-FRM, TR PYR, CALC RHOMBS IN FRMTN

CLYST-SLTST TR SS LT GRY-GRY, CALC TR PYR, VN CALC, CALC RHOMBS IN FM

WT 9.0
VIS 39
PH 10.4
FIL 18
CL 125

CLYST A/A, TR GRY-WHT, UNCON CLY, TR WHT, F GR SS, FRM

CLYST—SLTST GY-GN, RD-BRN, WH, SDY, CALC, TR FRAC, SFT-HD

INCR SLTST TR CALC RHOMBS

SLTST GY, GY-GN, WH, SDY, MED-W CON, INCR META FRAGS

PRED CLYST LT BRN

WOB 25
RPM 50
SPM 100
PP 1600

CLYST-SS A/A, TR CARB SH, BLK, SLTY TR BLK, F GR, BSLT, FRSH

WT 8.9
VIS 39
PH 10.0
FIL 15
CL 100

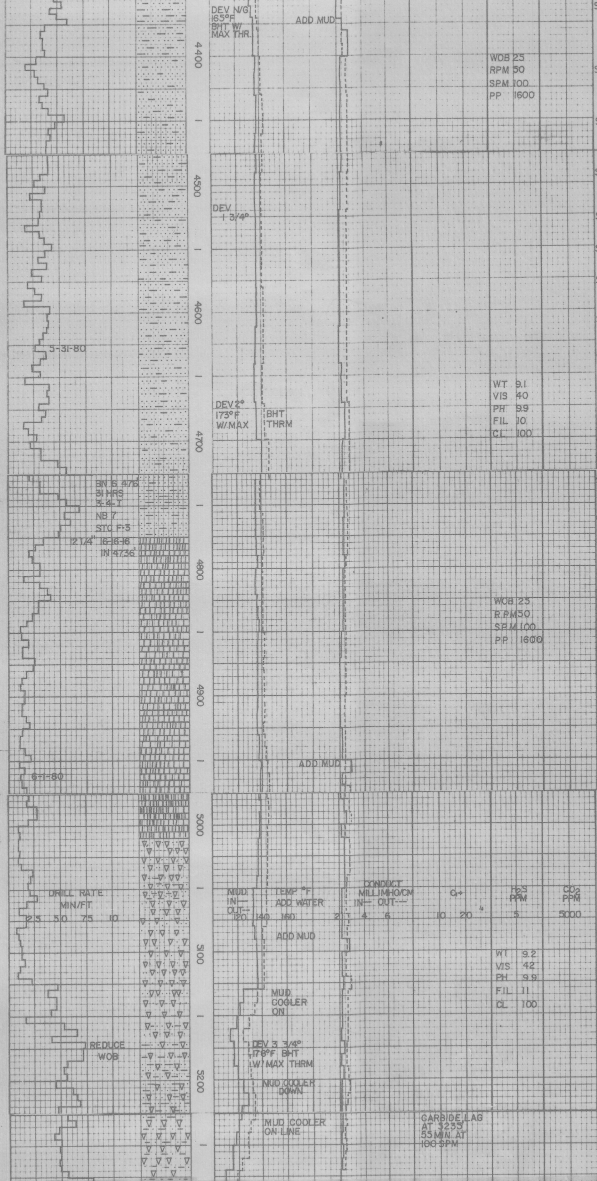
CLYST LT BRN-BRN, GRY, GRY-GRN, SLTY, N-SL CALC, W CON, HD, INCR SLTST, SS

CLYST A/A, SL-V CALC, TR BSLT FRAG

WT 9.0
VIS 40
PH 10.4
FIL 14
CL 100

SS GRY, VF-CRS GR, MED-PR SRT, FRM, MED CON, CALC-I.P.

SLTST A/A, TR DISSEN PYR, CALC, DECR SS



SS A/A, INCR AMNT, PR SRT

SS GRY, BRN, SLTY, VF-F GR W/META FRG INCL, SFT-FRM

SS A/A, INCR BRN CLYST

SS GRY, GRY-GRN, TR RED-BRN, SLTY, VF-F GR, M-W SRT, N CALC, FRI

SS A/A, INCR RED-BRN, INCR META FRAG IN SS

SS-SLTST TR CLYST A/A, INDUR I.P.

SS-SLTST VARI COL INDUR FRM, TR CALC I.P.

SS-SLTST VF-CRS GR, VARI COL, P-MSRT, SLTY, TR FE STN

SS-SLTST TR Fe STN

SS GRY, GRY-WH, VF-CGR, P-MSRT, ANG-SB ANG, SFT

SLTST RD-BRN, BRN, GY, SDY, ARG, FRM, META FRAG INCL

CLYST GY, GY-GN, BRN SLTY, SLCALC, TR CALC FL FRAC

BSLT DK GY, BLK, DK GY-GN, VF GR, TR PLAG XL INCL, TR CALC, MAGN, SFT

BSLT A/A POSS TR HBLD LATHS

BSLT A/A

BSLT DK GY, DK BRN VF GR, DISSEM MAGN, PLAG PHENO HBLD LATH, CALC IP, TR CHLOR

VOLC SEDS RD, BRN, RD-BRN, TUFFAC W/ POSS BEDS, POSS PLAG INCL

CLYST WH, BUFF, ALT SILIC W/ QTZ FL FRAC, CALC

VOLC SEDS RD, BRN GY, SILIC, TUFFAC, MOD WLD, VF GR

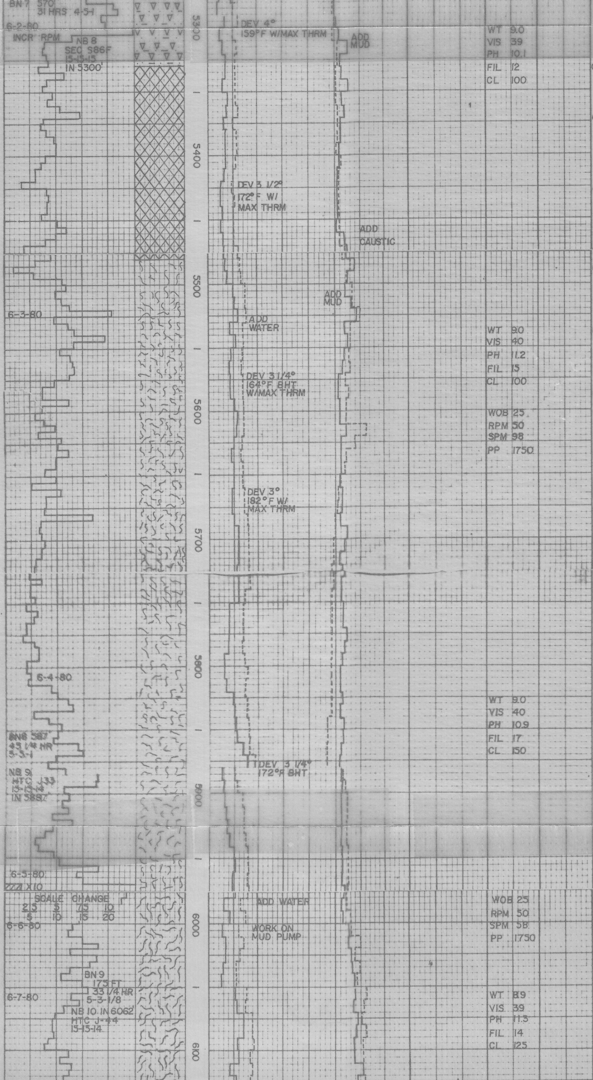
VOLC SEDS A/A

INCR CLYST LTGY, SLTY, SDY

VOLC SEDS A/A, TR QTZ FL FRAC, WLDED IP

PRED CLYST, LT GY, LT GN, SLTY, SDY IP, CALC RHOMB INCL

VOLC SED RD, RD/



WT 9.0
VIS 39
PH 10.1
FIL 12
CL 100

WT 9.0
VIS 40
PH 11.2
FIL 15
CL 100

WOB 25
RPM 50
SPM 98
PP 1750

WT 9.0
VIS 40
PH 10.9
FIL 17
CL 150

WOB 25
RPM 50
SPM 58
PP 1750

WT 8.9
VIS 39
PH 11.5
FIL 14
CL 125

BRN GY, CONGLOM
TR PLAG PHENO

GRAN LEUCO, CRPTO XLN, MICRO XLN IP-PLAG, QTZ, Fe STN, WEATHERED

GRAN A/A TR ALT MICA-PSEUDOMORPH, QTZ, CALC VUGS

GRAN A/A PLAG REPLACEMENT-POSS KAOLIN

META IGN TR SHRING, FAULT GOUGE, RED-BRN, MUSC, SCHISTOS SHEEN

META IGN MICRO-CRPTO XLN, TR EUHED QTZ XLS, CHLORIT BIOT

META IGN WHT, GRY-WHT, ANHED QTZ, ANHED, KAOL FLDSPR, SUB-EUHED MUSC, CHLOR, SERICITIC ALT, ALT BIOT, TR PYR, CHALCOPYR

META IGN TR ORN QTZ, INCR ALT ANHED BIOT

META IGN INCR UNALT MICRO-CRYPTO XLN BIOT, MUSC

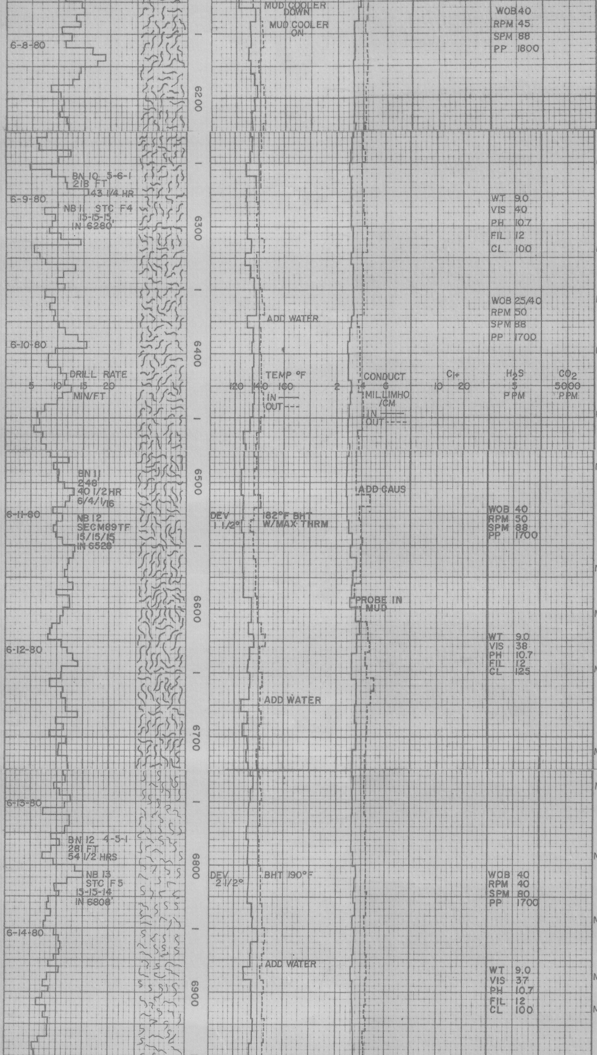
META IGN MICRO XLN QTZ, ANG, ANHED, POSS BRECC, INCR PYR, INCR ALT MICAS

META IGN INCR MAFICS, QTZ, FLDSPR SERICIT ALT, MUSC, ABDT BIOT RICH ZONES, TR PYR

META IGN ABDT MICA, ANG QTZ, INCR HBLND

META IGN VF-MICRO-XLN, ANHED, CLR QTZ W/INCL SUBHED MAGN I.P, WHT ANHED FLDSPR, SUBHED BIOT, WHT KAOLIN ZONES, SFT, W/SUBPARA BIOT P TR DISSEM CALC, PYR, QTZ XTLS, APLITIC TEX

META IGN VF-MICRO-CRYPTO XLN, TR MAGN, KAOL FLDSPR, MUSC, BIOT SL INCR KAOL, PLAG



META IGN VF-MICRO XLN, PRED GRY, GRY-WHT, QTZ FRAC I.P., KAOL FLDSPR, BIOT, CHLOR ALT I.P., MUSC ALT SERRIC, TR PYR, MAGN, TR EUHED QTZ XTLS, POSS TOURMALINE, TR EPID

META IGN CLR, ANHD QTZ, TR FE STN, VF-MICRO XLN, FRAC I.P., REXTLZED, SERRICITE, BIOT, MAGN, TR SUBHED QTZ XTLS, KAOL FLDSPR, MUSC INTRGRWN, TR PYR XTLS

META IGN A/A, DECR MAFICS, APLITIC TEX I.P., SILIC VNS

META IGN A/A, INCR BIOT

META IGN A/A, DECR BIOT, QTZ

META IGN A/A

META IGN CLR QTZ, WHT, F GR, KAOL FLDSPR, BIOT, MAGN, TR DISSEM PYR, TR MUSC, SERIC, TAB CALC XTLS, EUHED QTZ XTLS, MNR MYL-GRN

META IGN A/A, ABDT CALC, TAB XTLS, WHT, TR EPIDOTE

META IGN INCR KAOL

META IGN ANHED, CLR, QTZ, KAOL FLDSPR, WHT, TR ALT BIOT, DECR MAGN, SL INCR PYR, TR MUSC ALT SERIC I.P.

META IGN INCR MUSC

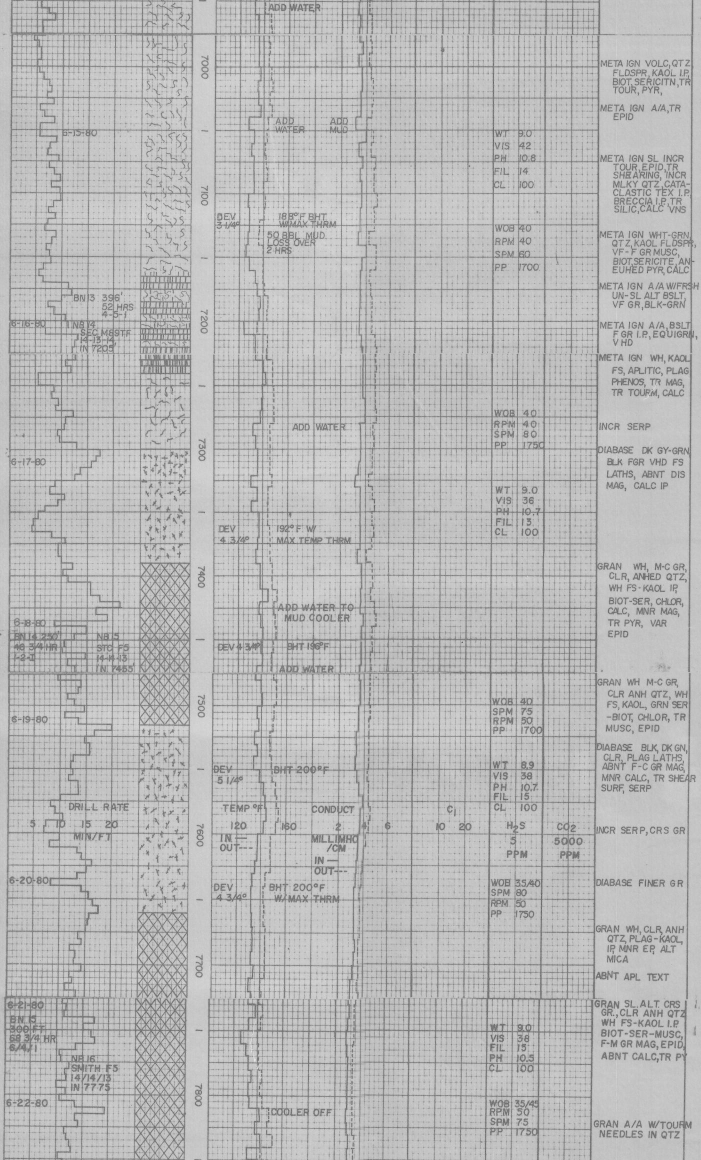
META IGN ANHED, CLR QTZ, KAOL, SERIC FLDSPR WHT MICRO-XLN, BIOT SUBHED, DECR MAGN, TR MUSC, TR TOUR, CALC VEINS

META IGN A/A, INCR TOUR, SERIC, ABDT KAOL, TR SHEARING

META IGN INCR TOUR,

META IGN ABDT TOUR, INCR KAOL ALT

META IGN TR F GR, ANHED QTZ, MUSC, DECR TOUR, TR PYR, CHLORIZATN, TR DISSEM CALC



WT 9.0
VIS 42
PH 10.8
FIL 14
CL 100

WOB 40
RPM 40
SPM 60
PP 1700

WOB 40
RPM 40
SPM 80
PP 1750

WT 9.0
VIS 36
PH 10.7
FIL 13
CL 100

WOB 40
SPM 75
RPM 50
PP 1700

WT 8.9
VIS 38
PH 10.7
FIL 15
CL 100

WOB 35/40
SPM 80
RPM 50
PP 1750

WT 9.0
VIS 38
FIL 15
PH 10.5
CL 100

WOB 35/45
RPM 50
SPM 75
PP 1750

META IGN VOLC, QTZ FLDSPR, KAOL I.P., BIOT, SERICITN, TR TOUR, PYR,

META IGN A/A, TR EPID

META IGN SL INCR TOUR, EPID, TR SHEARING, INCR MLKY QTZ, CATACLASTIC TEX I.P., BRECCIA I.P., TR SILIC, CALC VNS

META IGN WHT-GRN, QTZ, KAOL FLDSPR, VF-F GR MUSC, BIOT, SERICITE, ANEUHED PYR, CALC

META IGN A/A W/FRSH UN-SL ALT BSLT, VF GR, BLK-GRN

META IGN A/A, BSLT F GR I.P., EQUIGRN, V HD

META IGN WH, KAOL FS, APLITIC, PLAG PHENOS, TR MAG, TR TOURM, CALC

INCR SERP

DIABASE DK GY-GRN, BLK FGR VHD FS LATHS, ABNT DIS MAG, CALC IP

GRAN WH, M-C GR, CLR, ANHED QTZ, WH FS-KAOL IP, BIOT-SER, CHLOR, CALC, MNR MAG, TR PYR, VAR EPID

GRAN WH M-C GR, CLR ANH QTZ, WH FS, KAOL, GRN SER-BIOT, CHLOR, TR MUSC, EPID

DIABASE BLK, DK GN, CLR, PLAG LATHS, ABNT F-C GR MAG, MNR CALC, TR SHEAR SURF, SERP

INCR SERP, CRS GR

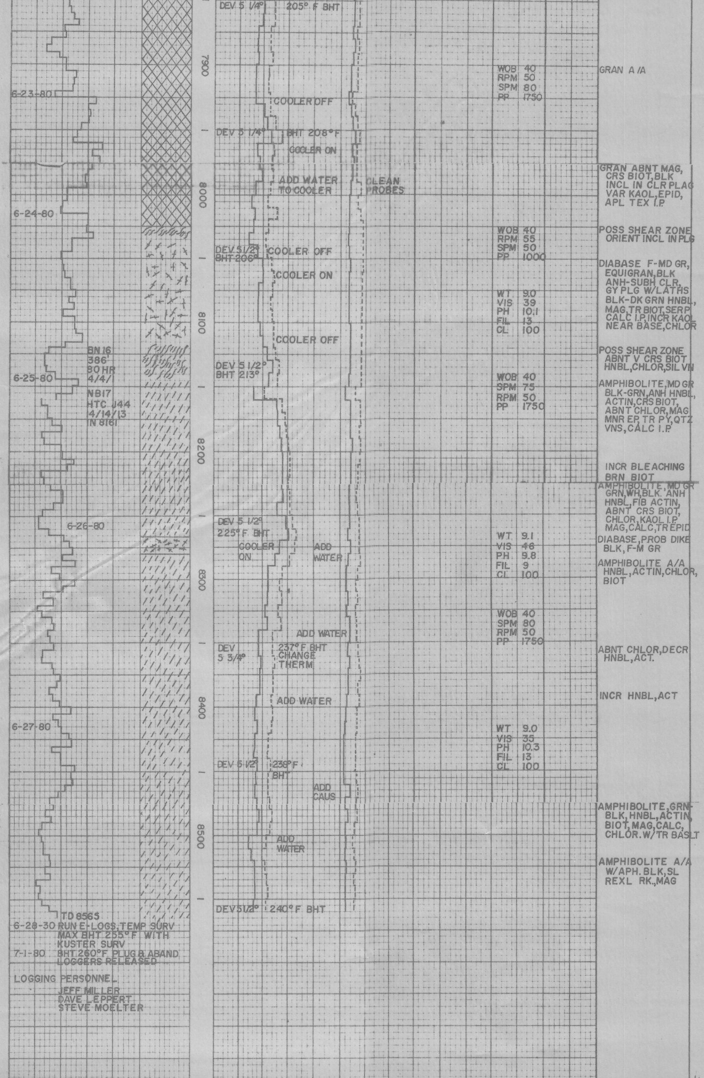
DIABASE FINER GR

GRAN WH, CLR, ANH QTZ, PLAG-KAOL, IP, MNR EP, ALT MICA

ABNT APL TEXT

GRAN SL. ALT. CRS GR., CLR ANH QTZ WH FS-KAOL I.P. BIOT-SER-MUSC, F-M GR MAG, EPID, ABNT CALC, TR PY

GRAN A/A W/TOURM NEEDLES IN QTZ



GRAN A/A

GRAN ABNT MAG, CRS BIOT, BLK INCL IN CLR PLAG VAR KAOL, EPID, APL TEX I.P.

POSS SHEAR ZONE ORIENT INCL IN PLG

DIABASE F-MD GR, EQUIGRAN, BLK ANH-SUBH CLR, GY PLG W/LATHS BLK-DK GRN HNBL, MAG, TR BIOT, SERP CALC I.P, INCR KAOL NEAR BASE, CHLOR

POSS SHEAR ZONE ABNT V CRS BIOT HNBL, CHLOR, SIL VN

AMPHIBOLITE, MD GR BLK-GRN, ANH HNBL, ACTIN, CRS BIOT, ABNT CHLOR, MAG MNR EP, TR PY, QTZ VNS, CALC I.P

INCR BLEACHING BRN BIOT

AMPHIBOLITE, MD GR GRN, WH, BLK. ANH HNBL, FIB ACTIN, ABNT CRS BIOT, CHLOR, KAOL I.P MAG, CALC, TR EPID

DIABASE, PROB DIKE BLK, F-M GR

AMPHIBOLITE A/A HNBL, ACTIN, CHLOR, BIOT

ABNT CHLOR, DECR HNBL, ACT.

INCR HNBL, ACT

AMPHIBOLITE, GRN-BLK, HNBL, ACTIN, BIOT, MAG, CALC, CHLOR. W/TR BASLT

AMPHIBOLITE A/A W/APH. BLK, SL REXL RK., MAG

TD 8565

6-28-30 RUN E-LOGS, TEMP SURV
MAX BHT 255°F WITH
KUSTER SURV
7-1-80 BHT 260°F PLUG & ABAND
LOGGERS RELEASED

LOGGING PERSONNEL
JEFF MILLER
DAVE LEPPERT
STEVE MOELTER