

ROGER L. MARTIN

PETROLEUM GEOLOGIST WICHITA, KANSAS

GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

COMPANY MULL DRILLING Co., Inc.

LEASE Tempe/ A' #1-6

FIELD Quiver (~SW/NW/4)

LOCATION 2500' FNL & 600' FWL

SEC 6 TWSP 17s RGE 47W

COUNTY Kiowa STATE Colorado

CONTRACTOR Cheyenne Drlg. Rig #5

SPUD 6-21-01 COMP 7-4-01

RTD 5130 (-1001) LTD 5125 (-996)

MUD UP 3624' TYPE MUD Chem.

ELEVATIONS

KB 4129'

GL 4118'

Measurements Are All
From: KB: 4129

API # 05-061-
06778

24# CASING
SURFACE 8 5/8" @ 437'
PRODUCTION none P & A

ELECTRICAL SURVEYS
ELI: CNL/CDL/PE
DIL ML

SAMPLES SAVED FROM 3500 (20' & 10') TO RTD: 5130'

DRILLING TIME KEPT FROM (1') 3500' TO RTD: 5130'

SAMPLES EXAMINED FROM 3500' TO RTD: 5130'

GEOLOGICAL SUPERVISION FROM ~3700' TO RTD: 5130'

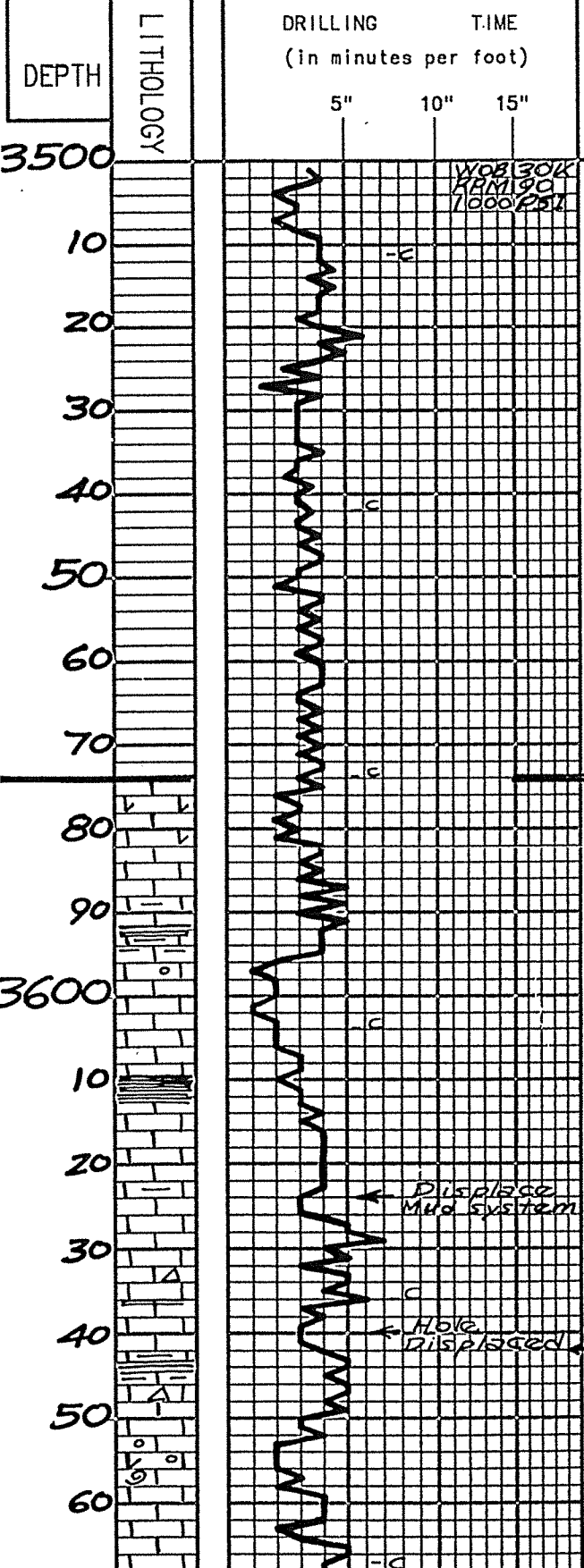
GEOLOGIST ON WELL Roger L. Martin

FORMATION TOPS	LOG	SAMPLES	2500' FNL 600' FWL (~ 5/2 SW/NW/4)			
<u>SHAWNEE</u>	<u>3572 (+557)</u>	<u>3574 (+555)</u>				
<u>LANSING</u>	<u>3818 (+311)</u>	<u>3820 (+309)</u>				
<u>MARMATON</u>	<u>4181 (-52)</u>	<u>4179 (-50)</u>				
<u>CHEROKEE</u>	<u>4338 (-209)</u>	<u>4343 (-214)</u>				
<u>ATOKA</u>	<u>4523 (-394)</u>	<u>4528 (-399)</u>				
<u>MORROW</u>	<u>4700 (-571)</u>	<u>4706 (-577)</u>				
<u>Keyes</u>	<u>4964 (-835)</u>	<u>4968 (-839)</u>				
<u>MISS. ST. LOUIS</u>	<u>4984 (-855)</u>	<u>4988 (-859)</u>				
<u>SPERGEN</u>	<u>5013 (-884)</u>	<u>5020 (-891)</u>				
<u>SPERGEN Ø</u>	<u>5030 (-901)</u>	<u>5035 (-906)</u>				
<u>WARSAW LS</u>	<u>5110 (-981)</u>	<u>5112 (-983)</u>				

R. 47W.

T. 17 S.

W=White, T=Tan, B=Brown, G=Gray, g=green, V.C=Vari-colored
 LEGEND cm=cream, bf=buff, Blk=Black, blu=blue, mrn=maroon, rd=red
 μ=micro, X=Xln=crystalline, 2nd REX=secondary recrystallization,
 X's=crystals, fn=fine, md=medium, Grs=Coarse, VCRS=Very coarse,
 Gr'd=Grained, Gr's=Grains, clr=clear, Trc=Trace, Vrr=Very rare,
 Rr=Rare, sm=some, Abndt=Abundant, pred=predominantly,
 X=Inter, ϕ=Porosity, ppϕ=pinpoint ϕ, visϕ=visible ϕ, NVϕ=No visϕ
 aprnt=apparent Frac=Fracture, FLR=Fluorescence, Y=yellow, old=gold
 MNRL.FLR=Mineral FLR. NF=No FLR. NC=No Cut. N.S.E.O=No Show Free Oil.



S.F.O.=S.F.Oil=Show Free Oil, N.S.=No Show
 V=Very, Pr=Poor, Sl=Slight, Fr=Fair, Gd=Good
 sat=saturated, spt'd=spot'd, O.STN=Oil Stain
 dd.STN=dead asphaltic stain, Gils=Gilsonite
 Cond=Condensate, -C=connection.

20' wet (dry) samples samples Pred Perm. rd beds & g-g SH - cavings

Vrr LS: W-T-G, μXln - fnXln pred dn Mdst, Trc Pkst. Prϕ - NVϕ. NS

Pred rd beds - caving. Vrr LS: AA Vrr LS: mrn-T-B μXln - fnXln dn, Mdst. Vprϕ - NVϕ. NS

Incrs LS: T-W, μXln - fnXln pred dn Mdst. sm fgs whst. Pkst - Trc Dolomc LS: VlnXln Prϕ - NVϕ. NS. (3580 smpl) Incrs Blk carb SH

(Vpr - Pr samples - Pred rd beds - SH cavings)

SHAWNEE

3574 (±555) LS: W-T-G, μXln - fnXln, Trc mdst's Pred dn Mdst to chky Rr frag - fgs Pkst. Vrr dolomc Pr visϕ to NVϕ. NS

(Vpr to Pr samples - Pred rd beds - cavings)

SH: Blk carb

LS: T-G-Gm, μXln - fnXln, Trc mdst - Grs X's, sm ool & fgs Pkst - Grst w/ Pr - Fr visϕ. L.fgs, T.ool & TXϕ. N.S.E.O.

sm w chky & subchky LS. sm dn Mdst - wkst, Vpr - NVϕ SH: Blk carb

LS: G-T-W, μXln - fnXln, pred dn Mdst - wkst, sm fgs ool Pkst - Grst w/ Prϕ - NVϕ N.S.E.O. sm subchky to chky LS. Vprϕ - NVϕ. NS

(Pr - Fr smpls.)

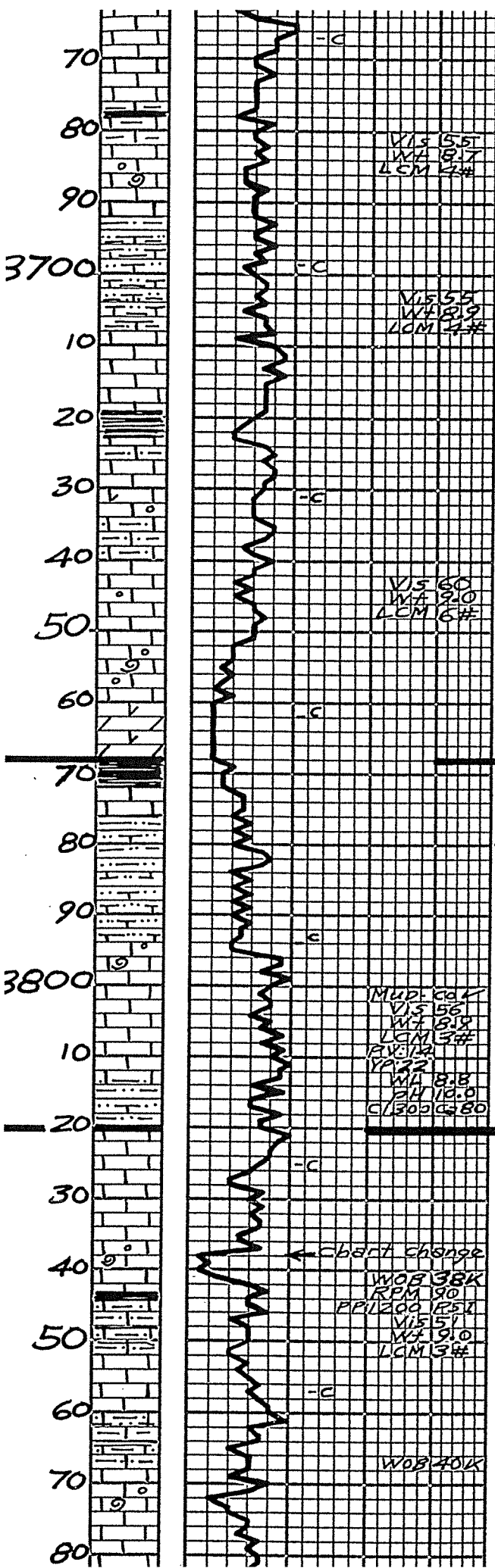
LS: AA, sl incrs chky LS, Pred dn Mdst. Trc Chrt. Prϕ - NVϕ. NS

(MUD-LOG 7:30P 6:27:01 3540' WT: 8.7 VIS: 48 PV: 13 VP: 19 PH: 10.0 WL: 8.8 CT: 1.72 CI: 300 Ca: 60 Solids: 28% LCM: 4#/bbl)

SH: Blk carb & subcarb

LS: G-Blk, μXln - fnXln & G-B dn Mdst. Rr Blk vit Chrt. Vpr - NVϕ. NS

LS: cm-G-T, μXln - fnXln, sm fgs & ool Pkst - Grst w/ Vpr - Pr visϕ: L.fgs, T.ool & TXϕ. Rr dolomc LS w/ Pred Pr lxp & Prϕ. N.S.E.O. sm w chky & G-W subchky LS. Prϕ - NVϕ N.S.E.O.



G-W SUBCHIKY L.S. PRD-NVØ
NSFO.

L.S. cm-T-G sm G-B Uxin-fnx
fnx pred Moist-Wkst
w/ Vpr Ø-NVØ. sm subchiky
to chiky. NS

Vpr MFRAC'S
9/10 Ø W/FLR
TRC S.F.Oil

L.S. W-G-T-B Uxin-fnx
sm subchiky-prt chiky
sm ool & fns Wkst-plst
Vpr Grst. Vpr Pr vis Ø
MFRAC'S & IXØ M.ool & fns
Vpr bft spt'd FLR & TRC
S.F.Oil pred barren.
SILTS: g-G calc sndy. Vtn Gr
Vpr SS-SD clust G-W Vtn
Grd calc. Vpr-Pr vis Ø. NS

L.S. G-B G-BK Uxin-fnx
Vpr Mdx's pred dn sm
argil st fns Moist-Wkst
Vpr Ø-NVØ. Vpr MFRAC'S &
Edg's & Vpr IXØ W/FLR &
TRC S.F.Oil.
SH: Bk carb.

SILTS: G calc. sndy.
L.S. T-G cm Uxin-fnx pred dn
Moist-Wkst. sm dolomc. Vpr
Pr Ø. Vpr Plst-Grst. ool & fns
Pr-Fc.ool & fns Vpr spt'd
FLR TRC S.F.Oil. pred
barren w/ Pr Ø to NVØ.
SILTS: AA.

L.S. G-T-Cm Uxin-fnx pred
dn Moist-Wkst. Pr Plst:
ool & fns w/ Pr Ø to NVØ.
Vpr Mdx's.

L.S. cm-T-G Uxin-fnx sm
ool & fns Plst-Grst w/ Pr to
Fr.ool & fns Vpr Ø. Vpr
spt'd FLR TRC S.F.Oil & TRC
spt'd O. STN

Vpr spt'd FLR
TRC S.F.Oil
HEEBNER
3768(4361)

SH: Bk carb
L.S. dk-lt G-T Uxin-Vfnx dn
TRC MFRAC W/FLR Vpr Ø
to NVØ 299% barren.

SILTS: g-G, calc, sm sndy.
(Dolomc L.S. & Dolo: AA)

L.S. cm-T-G Uxin-fnx
Pr ool & fns Plst-Grst. pred
Vpr-Pr vis Ø W/NSFO.

L.S. G-T-W Uxin-fnx Moist to
Wkst sm subchiky to chiky.
Vpr Ø-NVØ. NS.

(Fr samples)

L.S. G-T Uxin-fnx pred dn
Moist. sm argil. sm fns &
ool Wkst. Vpr Ø-NVØ. NS.
SILTS: g-G, calc, sm sndy.

L.S. W-T-G Uxin-fnx pred
dn to subchiky Moist-Wkst
w/ Pr Ø to NVØ. NSFO.

sm w. chiky L.S. sm pyrtc

Rf L.S. Plst-Grst. W-T-G. ool &
fns Pr-Fr vis J.ool & fns Ø.
NSFO.

SH: Bk carb & g-G.

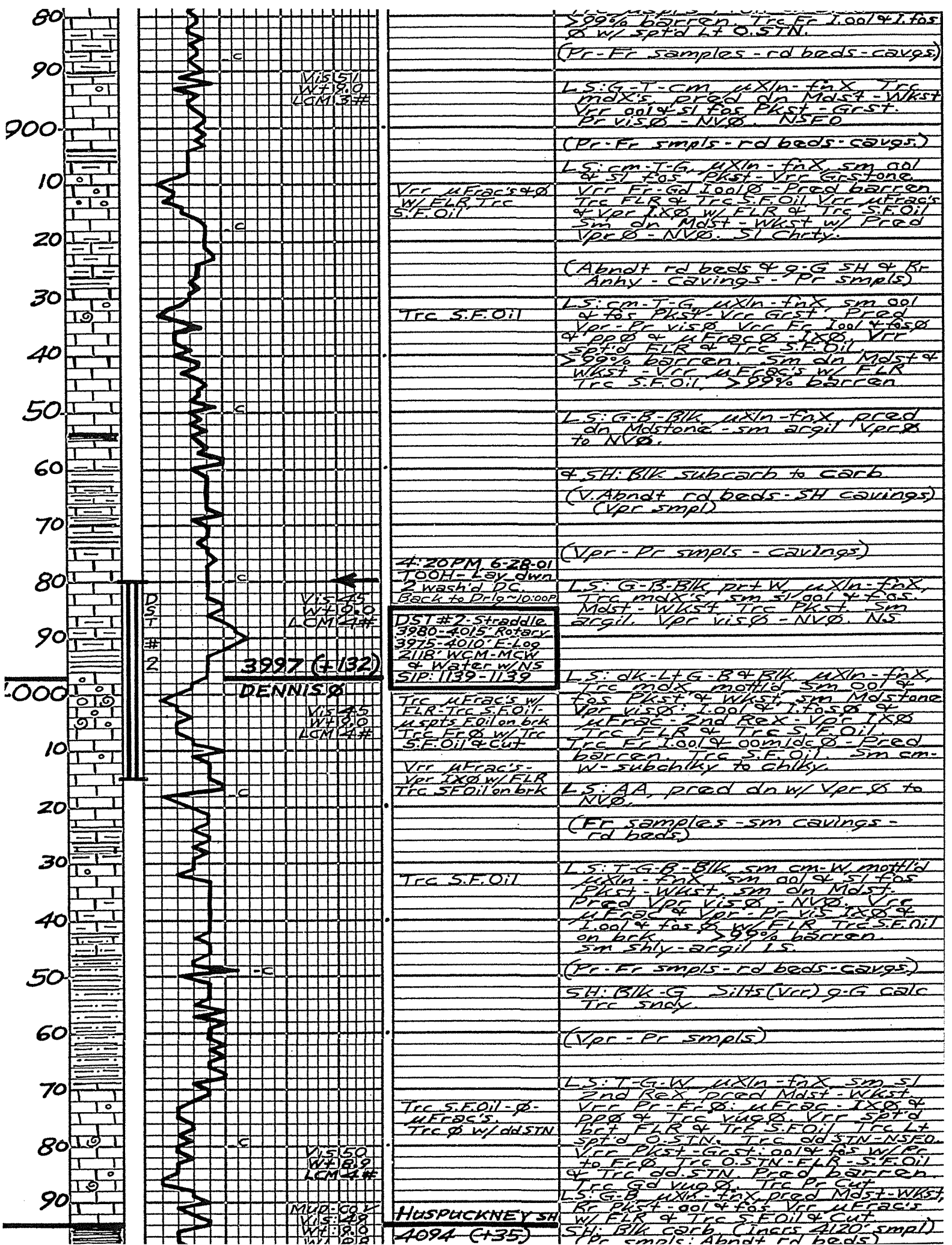
SILTS: g-G, calc.

L.S. W-T-G Uxin-fnx pred
dn to chiky Moist-Wkst.
Vpr Plst-Pr Ø-NVØ
NSFO.

SILTS: SH: AA.

L.S. G-T-W Uxin-Rf fnx
pred dn Moist-Wkst
Rf ool & fns Plst-Grst w/
Pr-Vpr Fr vis Ø: J.ool & MFRAC
Vpr spt'd FLR & TRC S.F.Oil.
TRC Mdx's F.Oil on bck.

TRC S.F.Oil



VIS 5.1
Wt 18.0
LCM 13.7

VIS 4.5
Wt 19.0
LCM 14.7

VIS 4.5
Wt 19.0
LCM 14.7

VIS 5.0
Wt 18.9
LCM 14.7

MUD 60.2
VIS 4.5
Wt 18.0
Wt 18.0
Wt 18.0

Vrr uFracs & Ø
W/FLR Trc
S.F.Oil

Trc S.F.Oil

4:20PM 6-28-01
TOOH - Lay down
2 wash'd DC.
Back to Drlg ~10:00P

DST #2 - Straddle
3980-4015 Rotary
3975-4010 F-Log
2118' WCM-MCW
& Water w/NS
SID: 1139-1139

Trc uFracs w/
FLR-Trc S.F.Oil
uFracs F.Oil on brk
Trc Fr Ø w/Trc
S.F.Oil & Cut

Vrr uFracs
Vrr IX Ø w/FLR
Trc S.F.Oil on brk

Trc S.F.Oil

Trc S.F.Oil - Ø
uFracs
Trc Ø w/ddSTN

HUSPUCKNEY SH
4094 (+135)

>99% barren. Trc Fr 1.001 & 1.1 fcs
Ø w/ sp'd Lt 0.5TN.
(Pr-Fr samples - rd beds - cavg's)

L.S.: G-T-CM, uXln-fnx Trc
mdx's pred dn Mdst-Wkst
Vrr only sl fcs Pkst - Grst.
Pr vis Ø - NVØ. NSFØ

(Pr-Fr smpls - rd beds - cavg's)

L.S.: cm-T-G, uXln-fnx, sm ool
& sl fcs Pkst - Vrr Grstone

Vrr Fr-Gd 1.001 Ø - Pred barren
Trc FLR & Trc S.F.Oil Vrr uFracs
& Vrr IX Ø w/FLR & Trc S.F.Oil
sm dn Mdst - Wkst w/ Pred
Vpr Ø - NVØ. Sl Chrt'y.

(Abndt rd beds & g.G SH & Rr
Anhy - cavg's - Pr smpls)

L.S.: cm-T-G, uXln-fnx, sm ool
& fcs Pkst - Vrr Grst. Pred
Vrr - Pr vis Ø - Vrr Fr 1.001 & fcs
& pp Ø & uFracs Ø - IX Ø, Vrr
sp'd FLR & Trc S.F.Oil, Vrr
>99% barren. sm dn Mdst &
Wkst - Vrr uFracs w/FLR
Trc S.F.Oil, >99% barren

L.S.: G-B-Blk, uXln-fnx, pred
dn Mdstone - sm argil Vpr Ø
to NVØ.

& SH: Blk subcarb to carb
(V. Abndt rd beds - SH cavg's)
(Vpr smpl)

(Vpr - Pr smpls - cavg's)

L.S.: G-B-Blk, prt w uXln-fnx,
Trc mdx's sm sl ool & fcs.
Mdst - Wkst Trc Pkst - sm
argil. Vpr vis Ø - NVØ. NS

L.S.: dk-Lt G-B & Blk, uXln-fnx,
Trc mdx, mottld sm ool &
fcs Pkst & Wkst, sm Mdstone
Vrr vis Ø: 1.001 & 1.1 fcs &
uFracs - 2nd Rex - Vpr IX Ø
Trc FLR & Trc S.F.Oil,
Trc Fr 1.001 & 0.001 md Ø - Pred
barren. Trc S.F.Oil. sm cm-
w - subchky to chky.

L.S.: AA, pred dn w/ Vpr Ø to
NVØ.

(Fr samples - sm cavg's -
rd beds)

L.S.: T-G-B-Blk, sm cm-w, mottld
uXln-fnx, sm ool & sl fcs
Pkst - Wkst, sm dn Mdst.
Pred Vpr vis Ø - NVØ. Vrr
uFracs & Vrr - Pr vis IX Ø &
1.001 & fcs w/FLR Trc S.F.Oil
on brk, >99% barren.
sm shly - argil ls.

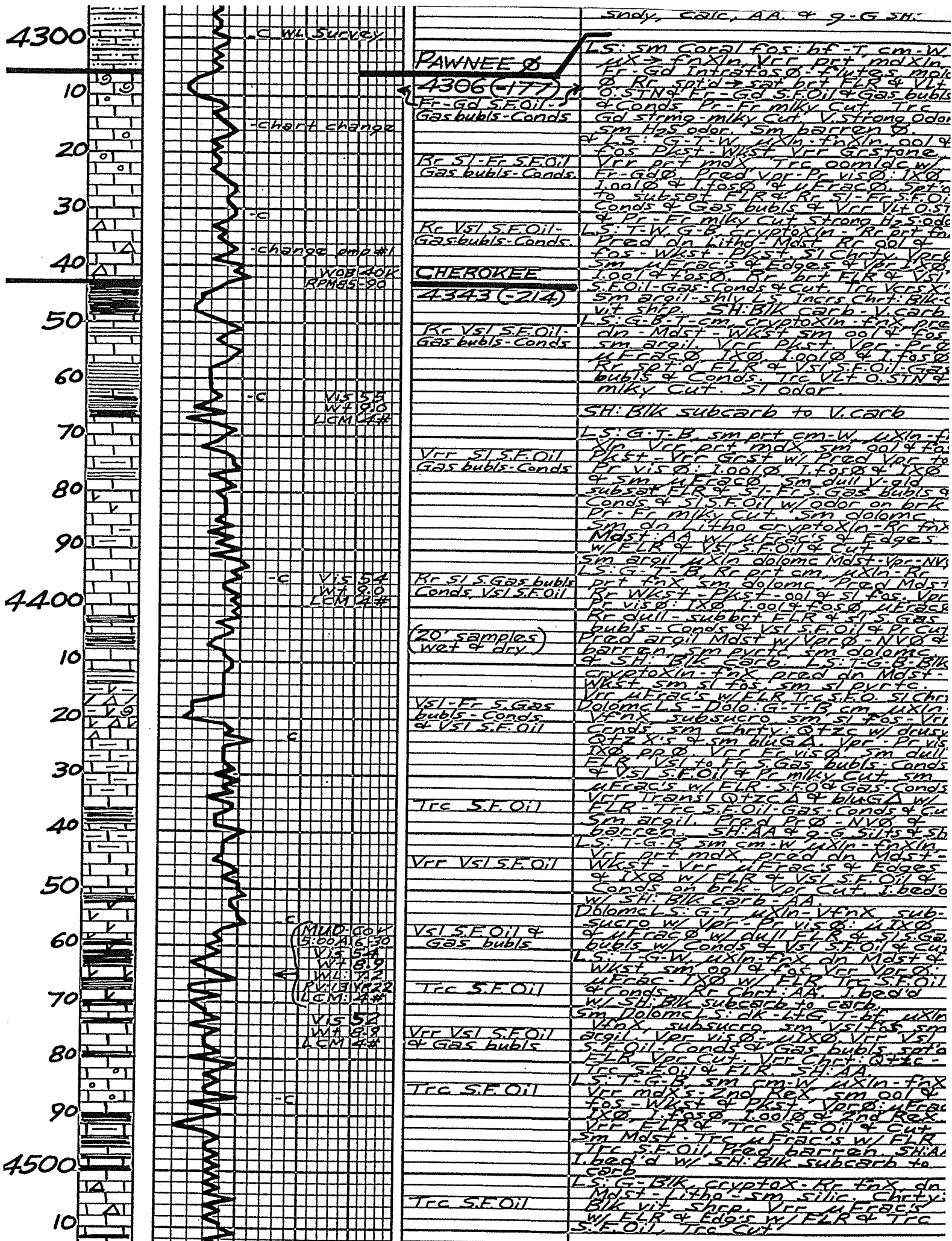
(Pr-Fr smpls - rd beds - cavg's)

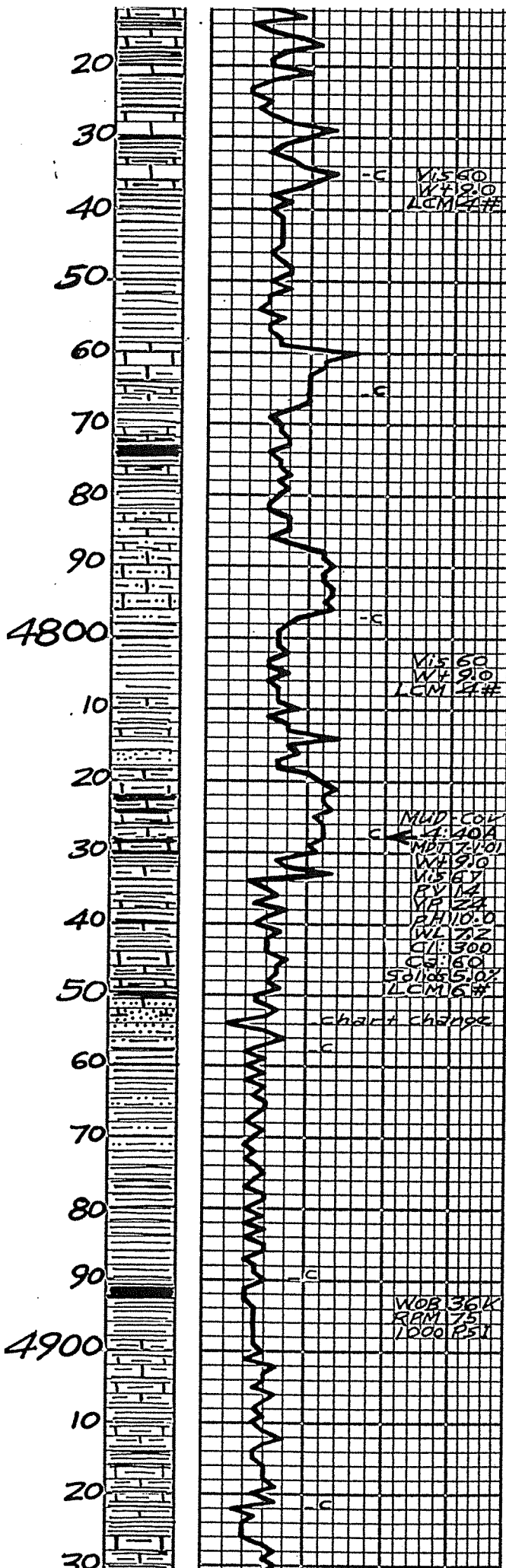
SH: Blk-G Silts (Vrr) g-G calc
Trc sand.

(Vpr - Pr smpls)

L.S.: T-G-W, uXln-fnx, sm sl
2nd Rex, pred Mdst - Wkst
Vrr Pr-Fr Ø: uFracs - IX Ø &
pp Ø & Trc vu Ø. Vrr sp'd
bet FLR & Trc S.F.Oil, Trc Lt
sp'd 0.5TN, Trc Ø dSTN-NSFO.
Vrr Pkst - Grst: 0.01 & fcs w/Pr
to Fr Ø Trc 0.5TN-FLR - S.F.Oil
& Trc Ø dSTN, Pred barren
Trc Gd vu Ø. Trc Pr Cut

L.S.: G-B, uXln-fnx, pred Mdst - Wkst,
Rr Pkst - ool & fcs Vrr uFracs
w/FLR & Trc S.F.Oil & Cut
SH: Blk carb. (Incrs 4120' smpl)
(Pr smpls: Abndt rd beds)





Trc S.F.Oil
prf fnX Trc mdX's - sm 2nd Re2
Vfr uErac's & Edg's w/ FLR &
(10' samples)
wet & dry) Trc S.F.Oil on brk. Pred Mdst.
dn w/ vpr Ø - NVØ & barren. Si-
vsl fcs, sl pyrtc.
SH: Lt-dk g-G, sm soft-bentc,
& Blk carb SH: AA.

Trc S.F.Oil
L.S.: T-G-W, cryptox, Rr-fnXln, pre
dn to subchky, Mdst, sm argil-
shly, sl pyrtc, Vfr uErac's w/
2nd Re2 w/ FLR & Trc S.F.Oil's
brk, sm PolomLS: T-B-G, uXln-v
Xln, vpr Ø - NVØ - dn hd, sm dull Fl
Trc uErac's & Edg's w/ soft Fl
& Trc S.F.Oil on brk. 99% barre
Pred SH: Lt-dk g-G, sm soft-
bentc-sm, sl pyrtc & micac.
sm Blk subcarb-carb, sm sl pyrt
& micac.
sm LS: AA, incrs argl-shly.
Pred SH: As Above (AA)

Trc S.F.Oil
Sm LS: T-G-B, cryptox-VfnXln dn,
hd Mdst, sm argil-shly, sl pyrtc
Vfr uErac's & Edg's w/ hft FL
& Trc S.F.Oil - uspts F.Oil on brk
Rr cm-w-subchky L.S., sm G-Blk,
cryptox-uXln, sl fcs-wkst. Pred
vpr Ø - NVØ & barren.
Pred SH: Blk subcarb-carb, sm
lmy & calc, sm pyrtc

Trc Coal
SH: dk-LtG & g-G, sm pyrtc.
Rr silts: G-Blk, calc, pyrtc.
& SH: VC-Lt-dk g-G & Blk, & g-G
rd-mcn-viol, sm pyrtc
(Sm LS: AA)

Trc S.F.Oil
L.S.: Blk-G-B, cryptox-uXln, pred
dn & argil-shly & pyrtc w/ vpr Ø
NVØ. Trc uErac's w/ FLR &
Trc S.F.Oil on brk. 99% barren.
Vfr sd clust: G-Blk, ven Gr'd - fn
Gr'd, v.calc, v.well cmt'd shly
(10' samples)
wet & dry) silty, vpr Ø - NVØ, & silts: G-Blk
sndy calc.
SH: VC, g-G-Blk-sm rd-viol-mrr
sm pyrtc.

SH: AA, sm lmy & calc (Rr LS: AA)
Vfr LS: T-G-B, uXln dn pyrtc, shly.
Vfr sd clusters: G-Blk, vfn-fn Gr'
v.calc-silty-shly, vpr Ø - NVØ. NS
Vfr LS: dk G-Blk, uXln, sndy, ven
fn Gr'd, v.argil-shly & silty, vpr
to NVØ, NS.
SH: AA, incrs lmy & calc. Incrs
pyrtc, g-G-SH, & Blk subcarb t
carb SH.
Pred SH: Blk subcarb to carb, sm
pyrtc, sm LtG & dkG & g-G, sm
pyrtc. (Vfr LS: AA)

SH: AA.

Sm LS: Blk-G-B-T, uXln-vfnX, argl
shly, pyrtc dn, vpr - NVØ, sm
prf cm-w-subchky, vpr - NVØ, NS.

Trc sd clusters: G, vfn-fn Gr'd well
cmt'd calc. vpr Ø - NVØ, NS, NC.
Pred SH: G-Blk subcarb, sm Blk-
carb, sm g-G & VG-AA.
(Rr LS: AA)

SH: Pred Blk subcarb-carb, fis
sm pyrtc, sm v.carb, sm G-Blk
micac SH.

Sm silts: LtG, g-G, sm micac

SH: AA.

Incrs Silts: LtG-dove.G, sm micac

SH: Pred Blk-dkg-subcarb, micac
& Blk carb, sm pyrtc, sm Lt
to dk g-G-SH. Rr G-B-SH.

Trc Coal: Blk vit.

SH: AA, sm G-Blk lmy & calc

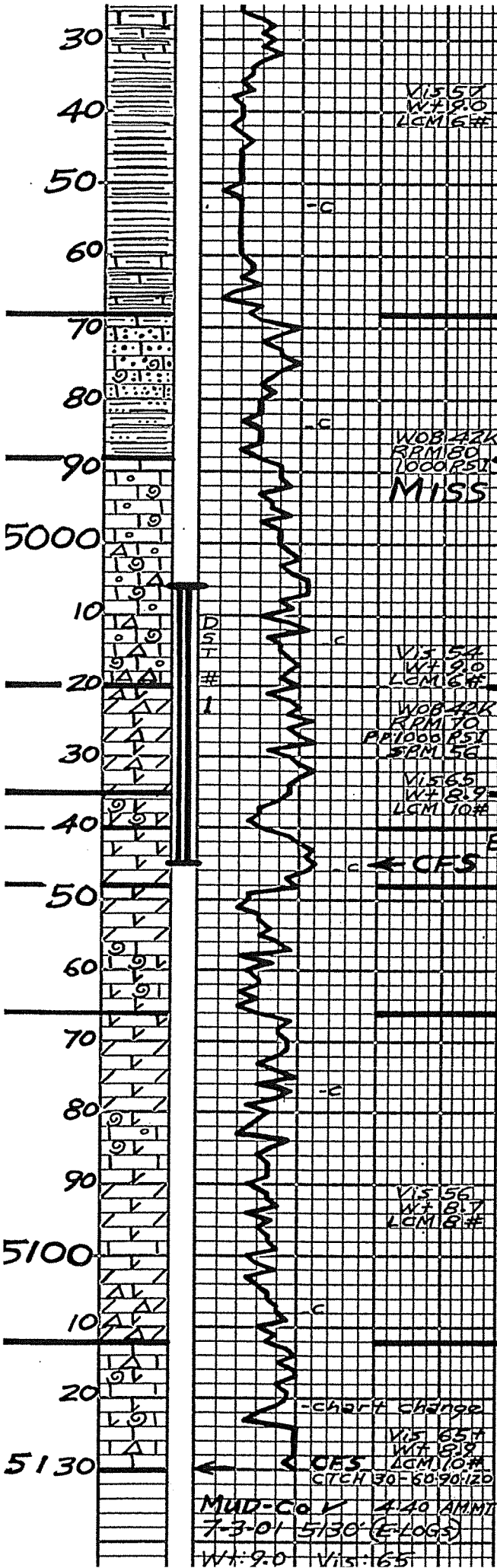
(10' samples)
wet & dry) Vfr LS: G-Blk, uXln, v.argil-
shly, Mdst, sl pyrtc, vsi fcs
vpr - NVØ, NS.

Pred SH: AA.

Rr LS: A-G-B-T, cryptoxln-Rr
fnX, trc mdx, sm fragmentl
fcs, argil-shly, wkst & Mdst,
sm pyrtc, vpr - NVØ, NSFO.

SH: AA, pred Blk subcarb-carb
fis. (Rr LS: AA)

Vfr LS: T-W-G, cryptoxln-fnX dn,



FIS. (CR LS:AA)

Vfr LS: T-W G. cryptoXln-fnx, dr
Mdst to chiky, Trc of fos Vpr
to NVØ. Trc LS: G-B-T Bk
fxln-fnx frag-fos argil dr
Wkst & Mdst. Vpr Ø to NVØ.
NS.

Pred SH: Bk subcarb to carb
& G-Bk FIS, sm micac, Rr
pyrtc. Rr Lt-dk q-G-SH.
Trc rd-mcn-SH.

Pred SH:AA.

SH: pred Bk carb & subcarb, sl
incls pyrtc, sm lmy & calc

KEYES
4968(-839)

LS: cm-T-G-B, mottld, uX-fnxln, sm
sandy md to Vgrd Grd, rnd to argil
Gr's sm argil-shly-sm pyrtc, sm
fragmtl-fos-Pkst, sm subchiky
to chiky LS. Vfr sandy Vfr-fn Gr's
Vfr-Pr vis Ø. NS. Rr Crinods
Vfr sd clusters: q-G Vfr-fn Gr'd
Vcalc, Vwell cm'd, glauc. Vpr Ø. NS

ST. LOUIS
4988(-859)

Abndt SH:AA. (LS:AA & sd:AA.)
LS: T-G-W. uXln to Rr mdx. fragm-
fos & ool. Wkst & Pkst. Vpr vis Ø.
I.ool Ø & I.fos Ø. IXØ. uFrac Ø-Tr
FLR & Trc S.F.Oil & Conds. Pred
barrn w/ Vpr Ø-NVØ. Vfr prt
Lithogr Mdst: cryptoXln-uX dr.
Vfr QtzC Chrt w/ FLR & Trc S.F.Oil
LS: T-W & G-B mottld, uX & mdXln
Vfr CrsX's, pred fragmtl-fos
sl ool. Pkst & Wkst, sm subchiky
to chiky. Pred Vpr-Pr vis Ø: IXØ
I.fos Ø, I.Gr Ø, uFrac Ø. Vfr sp'd
brt FLR & Vst-S.F.Oil-Gas bubls
& Conds. Trc Fr vu Ø & IXØ w/ sub
sat brt FLR & S.F.Oil-Gas bubls
& Conds on brk. Chrt: AA & q-G-SH.

Trc S.F.Oil

MISSISSIPPIAN

WOB 42K
RPM 180
1000 PSI

Vis 54
Wt 9.0
LCM 15#

SPERGEN
5020(-891)

DST #1 → 10' MD
SIP: 84.2 → 65.1

SPERG. Ø

5035(-906)

B/Ø 5040(-911)

SPERG. Ø

5048(-919)

Vst-S.F.Oil
& milky Cut
Trc Fr S.F.Oil & Cut

B/SPERG. Ø

5066(-937)

Vfr Vst-S.F.Oil

Vst-S.F.Oil

Trc S.F.Oil

Trc S.F.Oil

WARSAW LS
5112(-983)

LTD: 5125
(-996)

RTD: 5130
(-1001)

MULL DRILLING CO., INC.
Tempel "A" #1-6
7500 EMI & EMI-EMI

1710 Grad. 468
PH: 10.0 WL: 7.6
CT: 1/32 ALK: 2 CL: 300
Ca: 80 Solids 5.0%
LCM: 10#/661

(Pipe Strap)
6.76' short
to board
@ 5045'

Sec: 6-T.17S-R.47W
Kiowa Cnty, Colorado
API #05-061-06778
KB: 4129' GL: 4118'

Deviation Surveys

1 1/2° @ 242'
3/4° @ 256'
1° @ 440'
2 1/4° @ 1266'
2° @ 1455'
3 3/4° @ 1703'
2° @ 1766'
1 1/2° @ 1860'
1° @ 2077'
2° @ 2670'
2° @ 2951'
1 1/4° @ 3107'
1 1/4° @ 3667'
1/2° @ 4300'
2° @ 5045'
2° @ 5130'

DST #1
(SPERGEN)

5006' → 5045' Miss.
Times: 15-45-30-60 min.

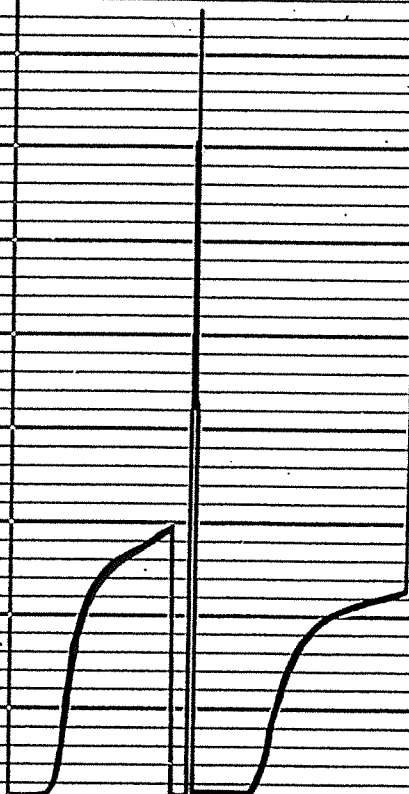
IF: Weak surface blow throughout
FF: No blow - flushed tool - surge -
No blow

Rec: 10' Drilling MUD w/ NS.

Alpine Electronic Recorder
ISIP: 842 IEP: 21-23
FSIP: 651 FEP: 25-30
IHP: 2339 Temp: 142°
FHP: 2330

Trilobite
Testing
INC.

Alpine
Recorder
chart →
DST #1
(SPERGEN)



MULL Drilling Co. INC.
Temper A
1-6
2500' FNL
600' FWL
Sec: 6-17S-47W
Kiowa Cnty,
Colorado
API #05-061-
06778 00

DST #2 Straddle → KC: Dennis
LTD: 5125' E-Log meas: 3975' → 4010'
RTD: 5130' Rotary meas: 3980' → 4015'
(35' anchor) (1115' tail pipe)

Times: 10-30-60-120 min.

IF: Strong blow - Off Btm of Bucket
in 2 min
ISI: No blow back
FF: Strong blow - OBOB in 3 min
EST: No blow back

Rec: 187' SI Water Cut Mud NS.

2500' FNL
600' FWL
Sec: 6-175-47W
Kiowa Cnty.,
Colorado
API# 05-061-
06778 00
KB: 4129'
GL: ~4118'

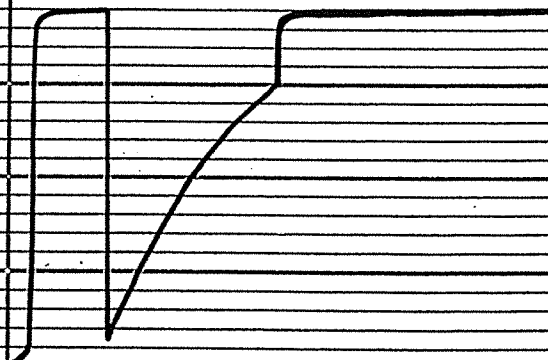
(35' anchor) (1115' + tail pipe)
Times: 10-30-60-120 min.
IF: Strong blow - Off Btm of Bucket in 2 min
IS: No blow back
FF: Strong blow - OBOD in 3 min
EST: No blow back
Rec: 187' Sl Water Cut Mud NS.
(20% Wtr, 80% Mud)
187' Mud Cut Water NS.
(55% Wtr, 45% Mud)
748' Sl Mud cut Water NS.
(85% Wtr, 15% Mud)
996' Water (100% Wtr) NS.
2118' Total Fluid

R_w of DST Wtr: 0.311 Ω @ 64°F. by Trilobite
Corrected R_w: 0.162 Ω @ 129°F

Alpine electronic recorder
ISIP: 1139 IFP: 161-299
ESIP: 1139 FFP: 308-949

IHP: 2045 Temp: 129°F
EHP: 1943

Trilobite
Testing
Alpine
chart →



MULL DRLG. Co.
Tempe/A#1-6

2500' FNL
600' FWL
Sec: 6-175-47W
Kiowa Cnty., Colo.
API# 05-061-
06778
KB: 4129'

E-LOG TOPS

CRETACEOUS

F+Hays 638 (+3491)
Codell ss 694 (+3435)
Greenhorn 889 (+3240)
Dakota 1125 (+3004)
Kiowa 1293 (+2836)
Cheyenne 1396 (+2733)
Morrison 1597 (+2532)

JURASSIC →

PERMIAN →

Taloga 1750 (+2379)
Day Creek 1970 (+2159)
Blaine Anhy. 2152 (+1977)
Cedar Hills ss 2286 (+1843)
B/Cedar Hills ss 2329 (+1800)
Stone Corral 2432 (+1697)
B/S.C. Anhy. 2473 (+1656)

	B/Cedar Hills 55 2329 (+1800)
	Stone Corral 2432 (+1697)
	B/S.C. Anhy. 2473 (+1656)
	Neva 3110 (+1019)
	Foraker 3186 (+943)
PENNSYLVANIAN	
	Shawnee 3572 (+557)
	Heebner SH 3766 (+363)
	Lansing 3818 (+311)
	Dennis Ø 3994 (+135)
	Hushpuckney SH 4094 (+35)
	Marmaton 4181 (-52)
	Pawnee 4301 (-172)
	Cherokee 4338 (-209)
	Atoka 4523 (-394)
	Morrow 4700 (-571)
	Keyes 4964 (-835)
MISSISSIPPIAN	
	St. Louis 4984 (-855)
	Spergen 5013 (-884)
	Spergen Ø 5030 (-901)
	2nd sperg Ø 5043 (-914)
	Warsaw LS 5110 (-981)
	LTD 5125 (-996)
	RTD 5130 (-1001)

MULL DRILL CO. INC.
 Tempel "A" #1-6
 2500' FNL
 600' FNL
 (~5/2/SW/NW/4)
 Sec. 6-T17S-R4TW
 Kiowa Cnty, Colo.

7 7/8" hole
 under surface

CHRONOLOGY

6-21-01	MIRU. Cheyenne Rig 5 Spud 12 1/4" hole (3 3/4 hrs Drlg.) (Drl'd 350')
6-22-01	Drlg. surface hole @ 350' Ran II jts 8 5/8" 24# surf. csg. (tally: 424') set @ 437' Cmt'd w/ 125 SX common, 3% CaCl +150 SX LF, 3% CaCl, 1/4# /sk floeal (8 hrs Drlg.) (Drl'd 857')
6-23-01	LOST CIRC @ 1203' (5 1/2 hrs LG) (Lost ~500 bbls @ 1203') (7 7/8" hole) (18 1/4 hrs Drlg.)
6-24-01	Drlg @ 1829' (Drl'd 626') (Lost circ @ 1586' ~400 bbls) (18 1/2 hrs Drlg.) (Drl'd 591')
6-25-01	Packing Swivel @ 2420' (4 1/2 hrs TOOH-Pack Swivel-TIH)
6-26-01	Drlg @ 2975' (21 1/4 hrs Drlg.) (Drl'd 555')
6-27-01	Drlg @ 3410' (22 1/2 hrs Drlg.) (Drl'd 435')
	(22 1/2 hrs Drlg.)

40sx @ 4931'
 40sx @ 3937'
 40sx @ 1723'
 40sx @ 1317'
 40sx @ 1004'
 40sx @ 451'
 10sx @ 40'
 5sx in rat hole
 5sx in mouse hole

6-25-01 Packing Swivel @ 2420'
 (4 1/2 hrs TOOH-Pack Swivel-TIH)
 (21 1/4 hrs Drlg)
 6-26-01 Drlg @ 2975' (Drlg 555')
 (22 1/2 hrs Drlg)
 6-27-01 Drlg @ 3410' (Drlg 435')
 (22 1/2 hrs Drlg)
 6-28-01 Drlg @ 3820' (Drlg 410')
 (17 3/4 hrs Drlg)
 6-29-01 Drlg @ 4111' (Drlg 291')
 (22 1/2 hrs Drlg)
 6-30-01 Drlg @ 4470' (Drlg 359')
 (23 1/2 hrs Drlg)
 7-1-01 Drlg @ 4840' (Drlg 320')
 (11 1/4 hrs Drlg) (Drlg 205')
 7-2-01 On Btm w/ DST #1 @ 5045'
 (3 hrs CFS & CTCH)
 (1 hr 18 std short trip)
 (3 hrs TOOH w/ survey & strap)
 (3 hrs PU & MU tool & TIH)
 (2 3/4 hrs DST #1 - on btm)
 (3 hrs TOOH w/ tool) (4 1/4 hrs TIH)
 (5 1/2 hrs Drlg)
 7-3-01 Logging @ RTD: 5130' (Drlg 88')
 LTD: 5125'
 (2 hrs CFS/CTCH @ TD)
 (2 3/4 hrs survey & TOOH)
 (5 3/4 hrs Logging)
 DST #2
 7-4-01 Plugged & Abandoned
 Rig Released @ 4:45 PM 7-4-01
 MULL DRILLING Co., INC
 Tempel 'A' #1-6
 1200' FNL & 600' FWL
 Sec: 6-T.175-R.47W
 Kiowa Cnty, Colorado
 API # 05-061-06778-00

Dept. Memo
 2-13-02