

Thomas J. Funk Petroleum Geologist

785-542-3359

Geologist's Report Drilling Time and Sample Log

OPERATOR L.D. Drilling, Inc.
 LEASE Darrel WELL NO #1-31
 FIELD Lundgren API 15-063-21841
 LOCATION 1650' FSL & 330' FWL
 SEC. 31 TWP. 14S RGE. 29W
 COUNTY Gove STATE Kansas

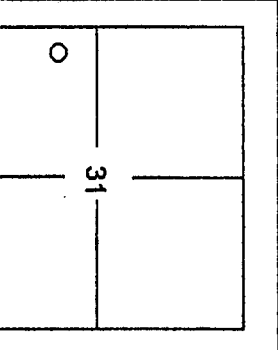
ELEVATION
 KB 2700
 DF
 GL 2695
 Measurements Are All
 From KB

CONTRACTOR Val Dng Co. Rig #4
 COMM 7/3/2010 COMP 7/15/2010
 RTD 4465' LOG TD 4464'
 SAMPLES SAVED FROM 3400 TO TD
 DRILLING TIME KEPT FROM 3200 TO TD
 SAMPLES EXAMINED FROM 3400 TO TD
 GEOLOGICAL SUPERVISION FROM 3610 TO TD
 MUD UP 3100 TYPE MUD Chemical

CASING RECORD
 SURFACE
 8 5/8" at 262' KB w/200sx
 PRODUCTION
 4 1/2" at

FORMATION	LOG TOP DATUM	SAMPLE TOP DATUM	STRUCT COMP
Anhydrite	2107 (+593)	2111 (+589)	-3
B/Anhydrite	2137 (+563)	2141 (+559)	Flat
Heebner Sh	3705 (-1005)	3705 (-1005)	Flat
Lansing	3740 (-1040)	3740 (-1040)	+2
Muncie Crk Sh	3906 (-1206)	3907 (-1207)	-9
Stark Sh	3990 (-1290)	3992 (-1292)	-6
Marmaton	4087 (-1387)	4086 (-1386)	-6
Pawnee	4177 (-1477)	4181 (-1481)	-10
Fort Scott	4238 (-1538)	4238 (-1538)	-1
Cherokee Sh	4266 (-1566)	4266 (-1566)	-2
Mississippia	4346 (-1646)	4346 (-1646)	-6

ELECTRICAL SURVEYS
 Log Tech
 DIL MEL
 CDN/CNL RAG

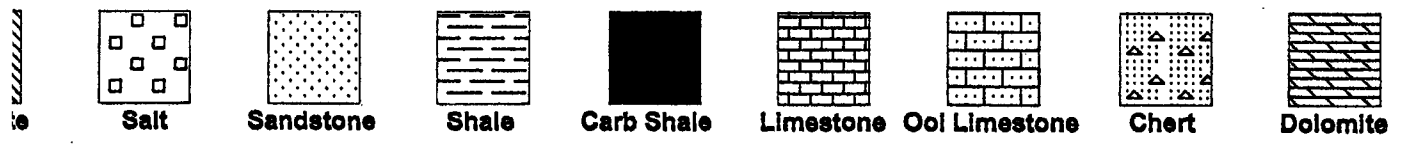


Daily Progress			Bit Record					
Date	Depth	NO	Size	Make	Type	Depth Out	Feet	Hours
7/2/10	Spud	1	12 1/4"	Varel	RR	267	267	2
7/4/10	670'							
7/5/10	1885'	2	7 7/8"	JZ	RR	4234	3967	101
7/6/10	2780'	3	7 7/8"	JZ	RR	4465	231	12
7/7/10	3355'							
7/8/10	3785'							
7/9/10	3815'							
7/10/10	4117'							
7/11/10	4234'							
7/12/10	4340'							
7/13/10	4340'							
7/14/10	4364'							
7/15/10	4465' TD							

Remarks And Recommendations:
 Based upon log analysis, DST recovery, and sample examination it was recommended that casing be run for further testing of the #1-31 Darrel.

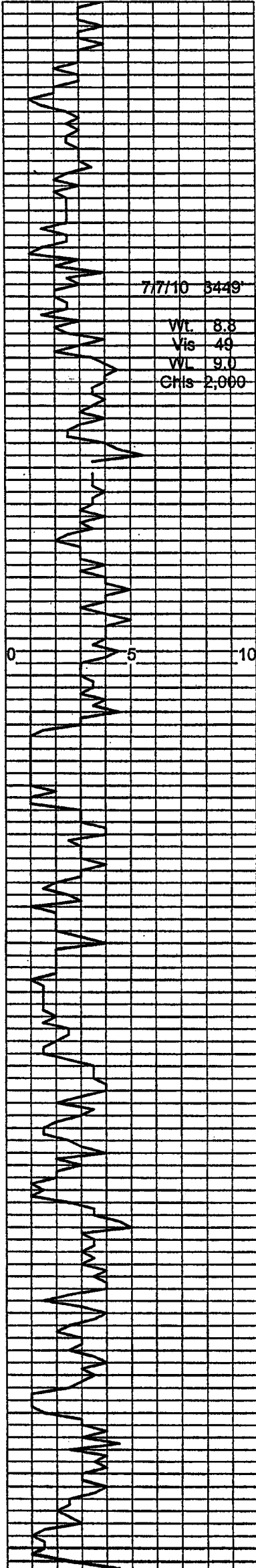
Thomas Funk
 Petroleum Geologist

LEGEND



DRILLING TIME IN MINUTES

h PER FOOT Sample Descriptions Remarks



Sh, gry, md-sft, sm silty

Sh, AA

717110 3449

Wt. 8.3
Vis 49
WL 9.0
GHS 2,000

LS, tn & gry, dns, v f-xln, mott in prt, blocky, tr foss

LS, tn, dns, v f-xln, hrd, foss in prt

LS, gry, dns, mott, v f-xln, argill

LS, lt gry, dns, micro-xln, mott in prt, tr foss -

LS, tn, f-xln, ool, foss frag, sm sft-chalky, pr vis por, NS

Sh, gry + LS, tn, f-xln, micro-ool, brittle

LS, tn, f-xln, gran, foss, md-sft, much cht

LS, crm-tn, f-xln, ool, chalky, sft, pr vis por

Sh, gry & tn, md-sft

LS, tn, dns, v f-xln, sct foss frags, mott

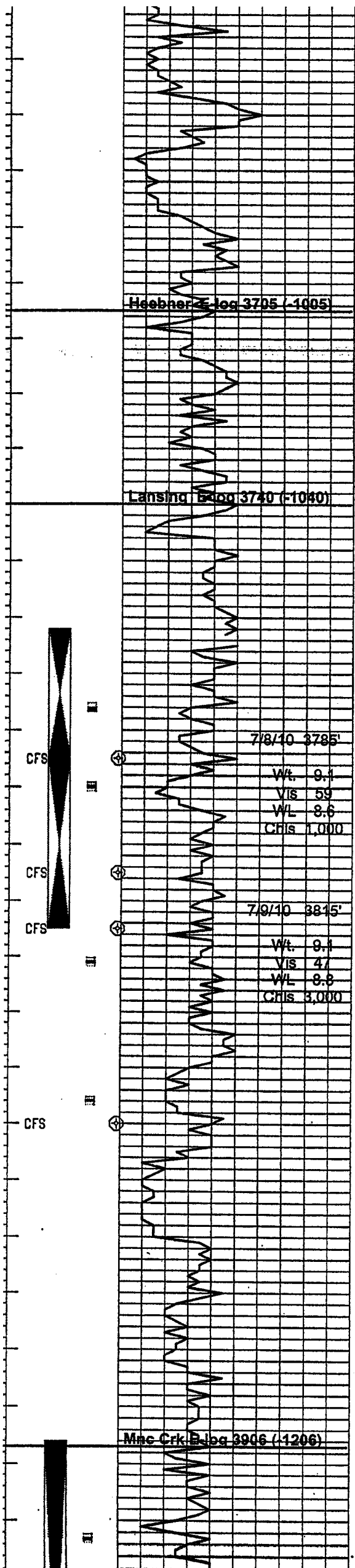
Sh, lt gry, calc

LS, crm, f-xln, ool, chalky, pr vis por

LS, lt gry, dns, v f-xln, mott

LS, crm, f-xln, ool, sm chalky, fr oomold por, NS

Remarks



LS, crm, f-xln, ool, sm chalky, tr moldic por, NS

LS, AA bec lt gry, mott, sm chalky

LS, gry, dns, micro-xln, blocky

LS, crm-tn, f-xln, dns, ool, sm chalky pr vis moldic por, NS

LS, lt gry, dns, v f-xln, blocky, tr foss

Heebner Log 3705 (-1005)

Sh, blk, carb

Sh, tn, gry, and rd, md-sft

LS, crm-tn, f-xln, foss, tr ool, pr vis p pt por, NSFO, fw pcs w/blk stn

Lansing Log 3740 (-1040)

Sh, lt gry, sft

LS, tn, f-xln, ool, brittle, sct moldic por, NSFO, no odor, v sct stn

LS, gry, dns, micro-xln, blocky, tr foss

Sh, gry & green

LS, crm-tn, f-xln, ool in prt, sm chty, brittle, sct moldic & int-ool por, SSFO, fr odor, sct sat sin, dull flour

7/8/10 3785'

Wt. 9.1
Vis 59
WL 8.6
Chls 1,000

LS, crm, f-xln, ool, sm v chalky, mushy sct moldic por, SSFO, fr odor, sct stn

LS, tn-crm, dns, v f-xln, tr foss

7/9/10 3815'

Wt. 9.1
Vis 4.7
WL 8.8
Chls 3,000

LS, tn, crm, f-xln, tr foss, chalky

LS, tn, v f-xln, foss, pr vis por, NSFO, sct stn

Sh, gry, md-sft

LS, crm f-xln, foss, tr ool, v chalky, pr vis moldic por, NSFO, slit odor, sct blk stn

Sh, lt gry

LS, crm-wht, f-xln, ool, v chalky, sft, fr moldic por, NS

LS, crm-lt tn, v f-xln, blocky, tr foss

LS, tn, dns, f-xln, chalky in prt, sft, tr foss

LS, AA bec lt gry, dns, mott, tr foss

LS, gry, dns, v f-xln, mott, tr foss, md-sft

Mnc Crk. Log 3906 (-1206)

Sh, blk, carb

Sh, tn, marr, & gry

LS, crm-tn, f-xln, tr ool, sct foss frags, sm chalky, pr vis por, VSSFO, slit odor, pr vis

DST #1 3762-3785

30"-45"-45"-60"

Blow OBO in 2" on IFP

Blow built to 9 inch on ISIP

Blow OBO in 5" on FFP

Blow built to 9 inch on FSIP

REC: 400' GIP

118' CO (35 deg grav corr API)

155' GOWCM

(6%g,7%o,38%w,49%m)

124' SOCMW (2%o,71%w,27%m)

744' SW (56,000 ppm chls)

1141' Total Fluid

IFP 56-342 ISIP 615

FFP 354-528 FSIP 619

IHP 1786 FHP 1776

Temp: 131 deg F

Strap: 1.26 ft short

Dev: 1/2 deg

DST #2 3785-3815

30"-45"-45"-60"

Weak blow built to 4 inches on IFP

Weak blow built to 3 inches on FFP

REC:

5' CO (35 deg grav corr API)

20' OCMW (2%o, 51%w, 47%m)

62' MW (79%w, 21%m)

87' Total Fluid Recovery

Water Chls: 45,000ppm

IFP 6-21 ISIP 664

FFP 24-42 FSIP 643

IHP 1792 FHP 1785

Temp: 124 deg F

DST #3 3906-3990

30"-30"-30"-30"

Weak blow died in 21" on IFP

No blow on FFP

REC:

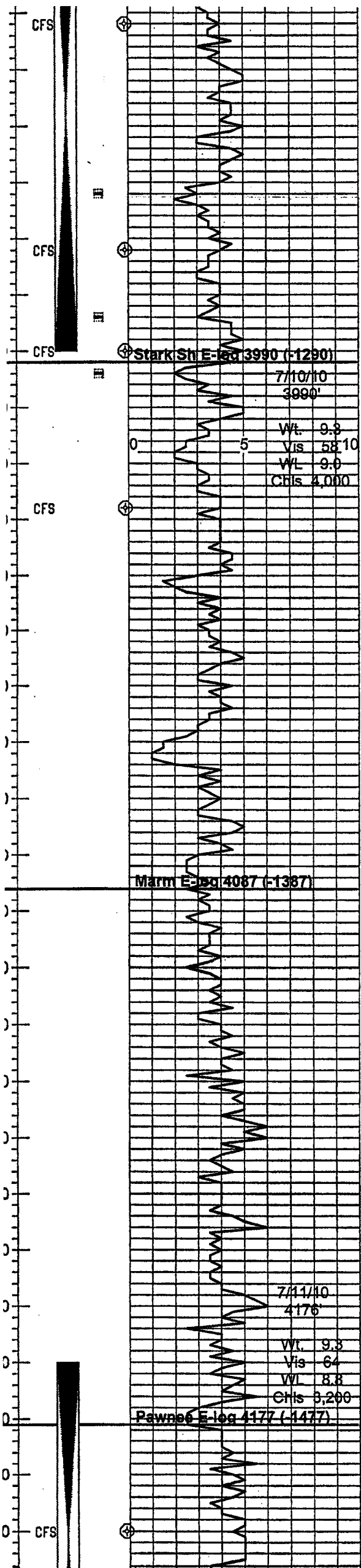
10' Mud

IFP 30-27 ISIP 559

FFP 30-33 FSIP 518

IHP 1891 FHP 1882

Temp: 121 deg F



LS, tn, dns, v f-xln, blocky

Sh, gry & grn-gry

Sh, drk gry + LS, tn, dns, micro-xln, blocky, tr foss

LS, crm-tn, f-xln, micro-ool, brittle, sct int-ool por, SSFO, fr odor, pr vis stn, wk flour

LS, tn, dns, v f-xln, blocky, tr foss + Sh, gry, md-sft

LS, tn, dns, v f-xln, sct ool, tr foss, pr vis por, NSFO, no odor, v sct stn

Sh, blk, carb

LS, crm-lt tn, f-xln, foss in prt, tr ool, sm v chalky, pr vis por, NS

LS, tn, dns, v f-xln, blocky, tr foss, mott gry in prt

LS, lt gry, dns, v f-xln, blocky, tr foss

Sh, blk, carb

LS, tn, dns, v f-xln, foss in prt, blocky

LS, lt gry, dns, v f-xln, tr foss, mott

Dolo, tn & gry, v f-xln, dns, blocky, NS + Sh, gyr, silty

LS, lt gry, dns, v f-xln, tr foss, mott

Sh, gry

LS, tn, dns, micro-xln, ool in prt, brittle, NS

Sh, gry, silty

LS, gry, dns, micro-xln, hrd, chty in prt

LS, AA bec drk gry, mott

Sh, lt gry, sft

LS, gry, dns, mott, argill in prt, tr foss

LS, tn, dns, v f-xln, foss in prt, md-sft, no vis por.

Sh, drk gry

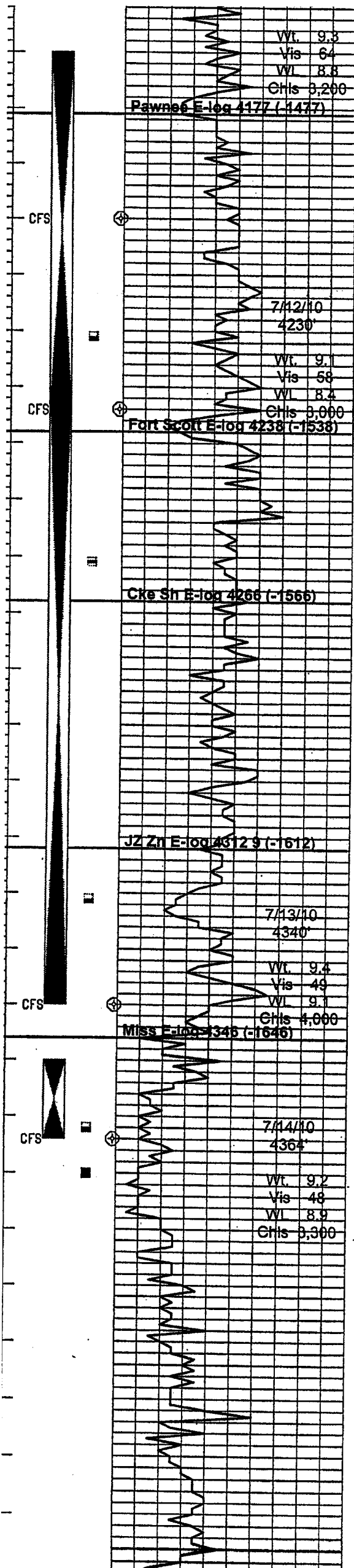
LS, gry, dns, mott, argill, tr foss

Sh, blk, carb

LS, tn, dns, v f-xln, blocky, tr foss, chty

LS, tn, f-xln, foss, gran in prt, pr vis p pt por, SSFO, v slit odor, pr vis stn

DST #4 4170-4234
 30"-45"-45"-60"
 Blow built to BOB in 3" on IFP
 Weak blow on ISP
 Blow built to BOB in 5" on FFP
 Blow built to 10 inches on FSP
 REC: 2200' GIP
 138' CO (37 deg grav corr API)
 155' GCMO (4%g, 80%o, 16%m)
 124' GCMO (22%g, 58%o, 20%m)
 417' Total Fluid
 IFP 34-88 ISIP 625
 FFP 108-165 FSIP 619
 IHP 2043 FHP 2037
 Temp: 134 deg F



Sh, drk gry

LS, gry, dns, mott, argill, tr foss

Sh, blk, carb

LS, tn, dns, v f-xln, blocky, tr foss, chty

LS, tn, f-xln, foss, gran in prt, pr vis p pt por, SSFO, v slt odor, pr vis stn

Sh, blk, carb

LS, tn, f-xln, foss, sm chty, sct moldic por. SSFO, fr odor, sct sat stn

Sh, blk, carb

LS, tn-brn, dns, v f-xln, tr ool, pr vis por, v sct drk stn

Sh, brn

LS, tn, f-xln, foss, mott in prt, sct moldic por, SSFO, slt odor, sct stn

Sh, blk, carb

Sh, bry + LS, tn-gry, dns, mott, foss, pr vis moldic por, NSFO, slt odor, pr vis stn

Sh, blk, fiss

LS, lt gry, dns, micro-xln, brittle, tr foss

LS, tn, dns, foss in prt, mott

LS, tn, dns, f-xln, foss, mushy, fr moldic por, SSFO, fr odor, v sct stn

Sh, gry & yell., sft, sm sd gm inclus

LS, tn-gry, dns, v chty, hrd + Abt Cht, tn & gry, sb-opq, 75% frsh, fw weath pcs w/stn

Dolo, tn, f-xln, dns, blocky, hrd, fw pcs w/fr modic por, SSFO, fr odor, sct stn

Dolo, tn-brn, dns, f to md-xln, fr to gd vug por, FSFO, gd odor, fr sat stn

Dolo, tn & gry, dns, v f-xln, sm w/ sct moldic por, SSFO, slt odor, sct stn

Dolo, gry, dns, blocky, tr cht, hrd

LS, gry, dns, dolo in prt, blocky, tr foss, NS

Dolo, gry & tn, dns, v f-xln, tr foss frags, pr vis por, NSFO, slt odor, v sct stn

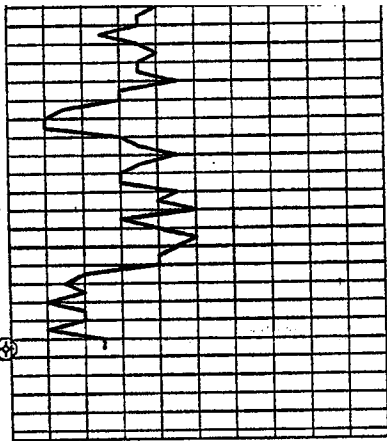
Dolo, lt gry, dns, f-xln, suc, sm chty, fr moldic por, NS

Dolo, AA bec tn, dns, calc

DST #4 4170-4234
 30"-45"-45"-60"
 Blow built to BOB in 3" on IFP
 Weak blow on ISP
 Blow built to BOB in 5" on FFP
 Blow built to 10 inches on FSP
 REC: 2200' GIP
 138' CO (37 deg grav corr API)
 155' GCMO (4%g, 80%o, 16%m)
 124' GCMO (22%g, 58%o, 20%m)
 417' Total Fluid
 IFP 34-88 ISIP 625
 FFP 108-165 FSIP 619
 IHP 2043 FHP 2037
 Temp: 134 deg F

DST #5 4230-4340
 30"-45"-45"-60"
 Blow built to BOB in 3" on IFP
 Weak blow on ISP
 Blow built to BOB in 9" on FFP
 Blow built to BOB on FSP
 REC: 770' GIP
 235' CO (34 deg grav corr API)
 208' GMCO (10%g, 70%o, 20%m)
 155' GMWCO (20%g, 51%o, 17%w, 20%m)
 186' GMWCO (24%g, 52%o, 12%w, 12%m)
 124' GWOCM (52%g, 18%o, 10%w, 20%m)
 908' Total Fluid
 IFP 32-189 ISIP 1017
 FFP 220-375 FSIP 989
 IHP 2077 FHP 2072
 Temp: 135 deg F
 Chls: 11,500 ppm

DST #6 4350-4364
 30"-45"-45"-60"
 Blow built to 6 inches on IFP
 Blow built to 8 inches on FFP
 REC: 90' GIP
 62' CO (34 deg grav corr API)
 31' GOWCM (8%g, 38%o, 15%w, 39%m)
 93' Total Fluid
 IFP 7-19 ISIP 1152
 FFP 38-57 FSIP 1141
 IHP 2094 FHP 2094
 Temp: 134 deg F
 Chls: 5,000 ppm



Dolo, AA bec tn, dns, calc

Dolo AA

LS, tn, dns, v f-xln, dolo in prt, sct foss frags, pr vis por, NS

Depth	DRILLING TIME IN MINUTES		Sample Descriptions	Remarks
	PER FOOT			
IPANY <u>L.D. Drilling, Inc.</u>			ELEVATION <u>2700</u>	<u>KB</u>
SE <u>#1-31</u> <u>Darrel</u>				
LOCATION <u>1650' FSL & 330' FWL</u>			Sec <u>31</u>	TWP <u>14S</u> RGE <u>29W</u>
COUNTY <u>Gove</u>			STATE <u>Kansas</u>	