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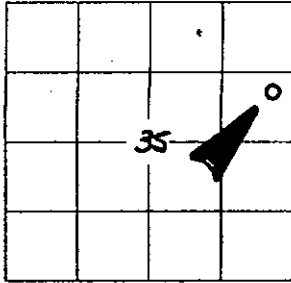
GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

COMPANY <u>LARSON ENGINEERING, INC</u> LEASE <u>SPLITTER-HILGENBERG #1-35</u> FIELD <u>DIGHTON SW EXT</u> LOCATION <u>1802' ENL & 62' FEL</u> SEC <u>35</u> TWSP <u>18S</u> RGE <u>R29W</u> COUNTY <u>CANE</u> STATE <u>KANSAS</u>	ELEVATIONS KB <u>2806</u> DF _____ GL <u>2799</u> Measurements Are All From <u>KB 2806</u>
CONTRACTOR <u>H.D. DRILLING #3</u> SPUD <u>9-22-2010</u> COMP <u>10-07-2010</u> RTD <u>4650(-1844)</u> LTD <u>4653(-1847)</u> MUD UP <u>3800</u> TYPE MUD <u>CHEMICAL</u>	CASING SURFACE <u>8 5/8" @ 262'</u> PRODUCTION <u>5/2</u> ELECTRICAL SURVEYS Log Tech: <u>CDL/CNL, D.I.L & Micro.</u>

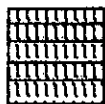
SAMPLES SAVED FROM	<u>3800</u>	TO	<u>RTD</u>
DRILLING TIME KEPT FROM	<u>3800</u>	TO	<u>RTD</u>
SAMPLES EXAMINED FROM	<u>3800</u>	TO	<u>RTD</u>
GEOLOGICAL SUPERVISION FROM	<u>3850</u>	TO	<u>RTD</u>
GEOLOGIST ON WELL	<u>STEVE DAVIS</u>		

FORMATION TOPS	LOG	SAMPLES
<u>ANHYDRITE</u>	<u>2151 +655</u>	<u>2151</u>
<u>B/ANHYDRITE</u>	<u>2176 +630</u>	<u>2177</u>
<u>HEBNER</u>	<u>3960 -1154</u>	<u>3957</u>
<u>LANSING</u>	<u>4003 -1197</u>	<u>3999</u>
<u>MUNDIE CREEK</u>	<u>4178 -1372</u>	<u>4174</u>
<u>STARK</u>	<u>4278 -1472</u>	<u>4278</u>
<u>PANNEE</u>	<u>4476 -1670</u>	<u>4483</u>
<u>CHEROKEE SH</u>	<u>4548 -1742</u>	<u>4551</u>
<u>JOHNSON ZONE</u>	<u>4580 -1774</u>	<u>4584</u>
<u>MISSISSIPPI</u>	<u>4618 -1812</u>	<u>4615</u>

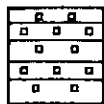


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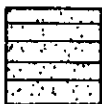
LEGEND



Anhydrite



Salt



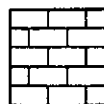
Sandstone



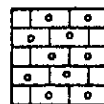
Shale



Carb sh



Limestone



Ool. Lime



Chert



Dolomite

SCALE " = 100'

DAV103-6.

DRILLING TIME		DEPTH	SAMPLE DESCRIPTION	REMARKS				
In Minutes								
0	5	10	15	15				
		50	ANHYDRITE 2151 (1655)					
		2200	ANHYDRITE 2177 (1629)					



3800

50

Smp's 99% vari calc shale

AA

Smp's most vari calc shale

Vis SG WT 86 Fl 72
Chl. 1.000 PH 11.5 ccm. S#
(9-27-10)

3900

CS brownish white dense mud &
shale AA

CS cream gray fine foss. ool P. mold
N.S. chky IP

CS tan clay fine foss. ool IP
chky IP dense mud

50

HEEDNER
3957(1151)

shale black carb

shale gray green & rust some
silty

CS cream-olt white fine fine foss.
ool, chky IP P. mold N.S.
About shale AA

shale gray & green

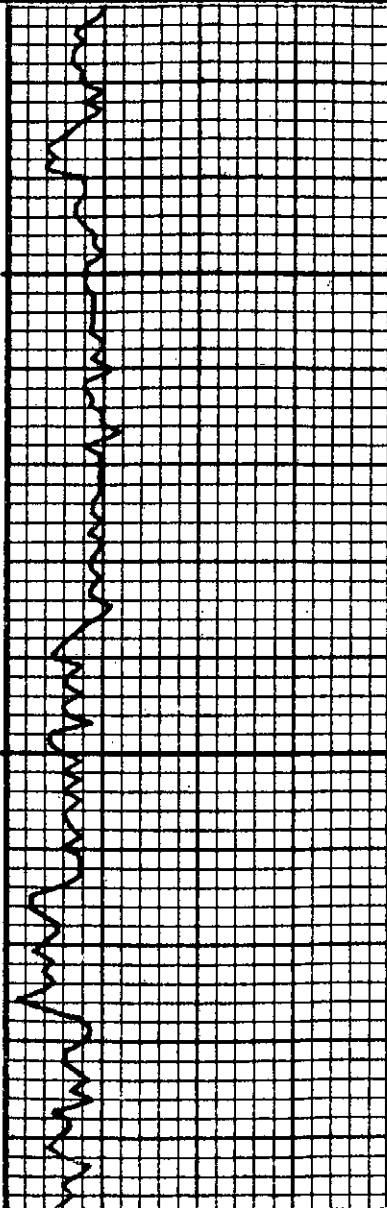
Bit Trip @ 3994
Pipe Strap @ 3994
2.96 long

ZANSTALG
3999(1193)

4000

CS gray-tan white dense mud

AA + CS cream-olt white fine fine
ool-ool IP P. mold N.S.



50

shale gray-green

LS con - all white f. ls. ool
P. ool mold & low pr's f. ls. n.s.

LS con - all white v. fine
dense

shale black-gray + LS tan con.
all white f. ls. silty, l. ss. chky IP
dense n.s.

Vis. 58 Wt. 8.8 Fil. 6.8
CN 1.600 PH 11.5 CCM .5 #
(9.28.10)

shale black-gray

4100

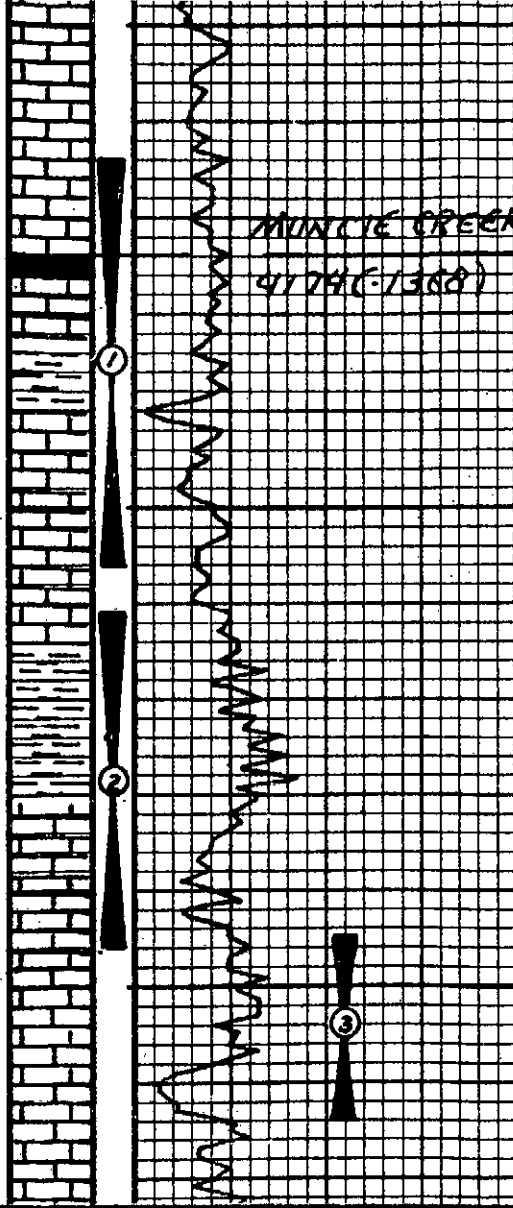
Abat shale AB + LS con -
all white f. ls. ool IP
P. ool mold & some chky n.s.

LS tan gray white dense silty
l. ss - ool

LS con - tan f. ls. ool f. ls. ool mold
n.s.

LS con - tan f. ls. ool IP dense
n.s.

LS tan - all white v. fine



MUNCIE CREEK
4174 (-1388)

50
dense
CS gray-tan f. v. l. a silty loss
ool dense v. d.
AA + CS brown micro v. l. dense
shale black sub carb. & pyr
CS tan-gray v. l. a silty ool. loss
dense same chky, v. d.
AA + shale black gray green
CS tan, brown f. v. l. a silty loss
P. v. l. a v. s. f. a rare spid sta
v. l. fluor. plat odor
CS brown-gray f. v. l. a dense
v. d.
CS AA w/abst shale gray, black &
green
shale gray, black & green
CS tan-white f. v. l. a silty
loss f. v. l. a s. f. s. f. a spid sta
dull spid fluor. v. l. a odor
same chky
50
CS gray-tan f. v. l. a ool f. v. l. a ool
F.P. v. l. a s. f. s. f. a rare spid sta
dull spid fluor. lat odor
CS, tan, pl. white f. v. l. a silty

4200

100's

100's

50

100's

OST #1 4164-4206

15-30-15-30

BLOW:

I.F. Weak surface
F.F. No blow

RECOVERY: 5'M

I.H.P. 2015#

I.F.P. 18-27#

I.S.I.P. 1053#

F.F.P. 28-32#

F.S.I.P. 1021#

F.H.P. 1966# B.H.T. 115°F

Vis. 52 wt. 9.1 Fil. 7.2
CN. 1,900 PH 10.5 CCM. 5#
(9-29-10)

OST #2 4211-4246

15-30-30-60

BLOW:

I.F. Built 8"

F.F. BOB. 27 min.

(No return I.S.I. or F.S.I.)

RECOVERY:

216 M.W. w/oil spots (50% W 50% M)

204 M.W. (90% W 10% M)

420 TOTAL FLUID chl. 40,000

I.H.P. 2055#

I.F.P. 26-109#

I.S.I.P. 769#

F.F.P. 113-187#

F.S.I.P. 768#

F.H.P. 2054# B.H.T. 125°F

STARTER

42706 (4272)



4275

4300

4315

4325

4335

4345

4355

50

VIS 9.2 WT 9.2 F.F.P. 29.44
CHL 2,400 PH 10.5 CCM 5.8
(9.3-10)

LS fine to coarse NVA some chky

shale black carb

LS con. off white f. v. silty
ool. fine to c. F.P. ool. mold. S.S.F.O.
spid. sta. spid. blue. lat. odor

LS tan. off white f. v. silty
lacc. chky. IP dense. mid. a. chky
gray. app.

LS con. off white f. v. silty
ool. lacc. P. mold. S.S.F.O. +
chky. gray. app.

shale black carb
Abat. shale + LS con. white low pr. c.
lim. chky. P. mold. S.S.F.O. +
oil. spid. sta. d. blue. lat. odor

LS tan. gray. f. v. silty. lacc. ool. P. mold. S.S.F.O. + S.S. res. secondary
oil. spid. sta. dull. N. odor

99% shale after fishing for tool

Most shale (trip sample)

LS gray. tan. v. silty. lacc. dense. mid.

LS gray-brown f. v. silty. lacc. NVA some chky

LS AA. ulina. shale black sub. carb

Abat. shale black gray + green
LS gray-brown f. v. silty. lacc. dense. mid.

LS brown. micro. v. dense. mid. shale AA

DST #3 4245-4264

15.30.30.60

BLOW:

I.F. Surface blow

F.F. Surface blow

RECOVERY:

60' M w/oil spots

I.H.P. 2070#

I.F.P. 16.28#

I.S.I.P. 715#

F.F.P. 29.44#

F.S.I.P. 716#

F.H.P. 2051# B.H.T. 116°F

@4264 VIS. 50 WT 9.2 Fil. 7.6

CHL 2,400 PH 10.5 CCM 5.8

(9.3-10)

Pipe Strap @4290

4.31 long

DST #4 4275-4290

15.30.30.60

BLOW:

I.F. B.O.B. 5 min.

F.F. B.O.B. 7 min.

(No return I.S.I. or F.S.I.)

RECOVERY:

S.F.O. (100% O)

744' S.W. (100% W)

749' TOTAL FLUID

I.H.P. 2109# CHL 4,000

I.F.P. 37.196#

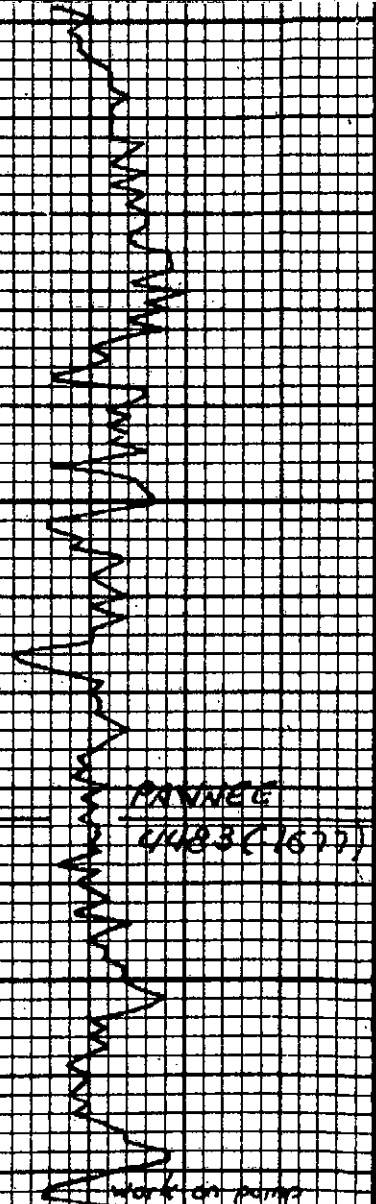
I.S.I.P. 627#

F.F.P. 203.361#

F.S.I.P. 629#

F.H.P. 2056# B.H.T. 122°F

@4324 VIS. 81 WT 9.2 Fil. 6.8



4100
 405
 50
 400
 4500
 work on pump
 405

CS. AA + Shale gray, black green
 rust

CS brown-gray f. l. in flow
 loss frag. dense v.p. v. g. d. v. s. s. f. a.
 rare spots dk. sh. n. blue n. odor

CS tan-gray f. l. in flow
 dense mud + abnt. shale black,
 gray, green & rust

shale AA

CS. cm. gray f. l. in silty loss. ool
 chky. IP. P. in v. s. s. f. o. n. sh.
 n. blue, v. l. t. odor, CS tan
 gray v. l. in dense mud

CS. tan. gray v. l. in mica. v. l. dense
 mud. Most shale gray, black &
 green

CS. tan. white f. l. in loss. ool, chky.
 P. ool. n. s.

shale black sub ool

CS. white-tan f. l. in silty loss.
 ool. chky. mud. chky. white. gray
 silty base.

CS. tan. gray v. l. in few loss frag.
 v. l. dense

shale black ool

CS. tan. gray v. l. in ool. ool. IP. some
 chky. rare P. ool. ool. n. s.
 Abnt. shale vari. ool.

shale. most shale

chl. 2.500 PH 10.0 CCM 1#
 (10-1-10)

DST #5 4315-4324
 15-30-15-30
 BLOW:
 I.F. No blow
 F.F. No blow (flushed no help)
 RECOVERY: 2'M
 I.H.P. 2104#
 I.F.P. 13.13#
 I.S.I.P. 15#
 F.F.P. 14.14#
 F.S.I.P. 17#
 F.H.P. 2111# B.H.T. 113°F

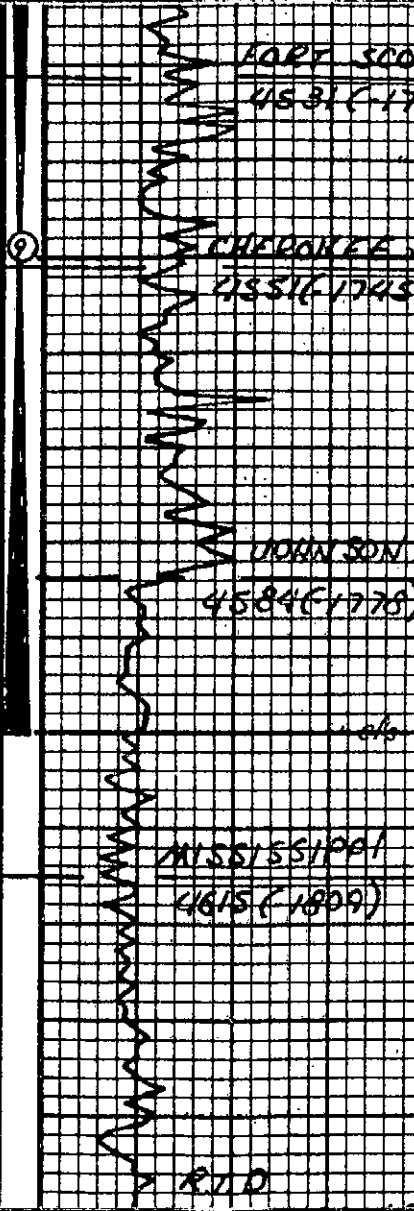
DST #6 4314-4334
 Lost tool, had to fish.

DST #7 4314-4336
 15-30-30-60
 BLOW:
 I.F. Built to 5"
 F.F. B.O.B. 24 min.
 (No return I.S.I. or F.S.I.)
 248' SW w/ oil spots (100%W)
 chl. 30.000

I.H.P. 2122#
 I.F.P. 21-118#
 I.S.I.P. 459#
 F.F.P. 121-198#
 F.S.I.P. 458#
 F.H.P. 2104# B.H.T. 124°F

@4445 vis 52 wt. 9.3 fl. 8.0
 chl. 2.900 PH 10.5 CCM 1#
 (10-4-10)

DST #8 4387-4445
 15-30-15-30
 BLOW:
 I.F. Surface died 10 min.



after repairs

Shale black carb

CS brown, con. v. l. dense mud + ch. brown

CS con. gray l. l. ool. Purple some chky. v. s. s. f. o. v. sta. n. fluor. nodar

Shale black carb

CS gray con. l. l. ool. chky. - chky. l. P. n. v. d.

CS con. gray l. l. ool. chky. l. P. n. v. d. + CS brown - gray l. l. ool. silty. l. s. ool. dense mud

Shale black sub carb & gray + CS brown - gray micro. v. l. dense mud

CS con. tan l. l. ool. l. s. ool. Purple s. s. f. o. con. solid l. l. sta. dull fluor. v. l. nodar + Shale gray - black

Shale black, gray, green, rust & tan. Silty w/ ch. tan, yellow, orange, l. s. nodar. s. s. white ulgea. oil well salt. F.P. g. d. s.

CS tan - all white l. l. ool. ool. l. P. dense some chky. mud

CS tan - all white l. l. ool. ool. chky. l. P. mud

CS AA + CS tan - brown white ool. l. s. dense mud

CS con. - gray l. l. ool. - ool. l. P. same chky. mud

FF No blow

RECOVERY: S.M

I.H.P. 2221#

I.F.P. 37-38#

I.S.I.P. 45#

F.F.P. 36-38#

F.S.I.P. 44#

F.N.P. 2186# B.N.T. 115°F

Vis. 62 Wt. 9.2 Fl. 8.0

Chl. 3.200 PH 10.5 CCM. 5#

(10.5-10)

O.S.T. #9 4498. 4600

15.30.30-60

BLOW:

I.F. Built 7"

I.S.I. surface return

F.F. Built 9"

F.S.I. no return

RECOVERY:

30' F.O.

124' G.C.O.M. (5% G 45% 50% M)

112' G.C.M.O. (10% A 50% 40% M)

60' G.C.O.M. (10% A 30% 60% M)

326' TOTAL FLUID

I.H.P. 2358#

I.F.P. 59. 115#

I.S.I.P. 1143#

F.F.P. 120-154#

F.S.I.P. 1126#

F.N.P. 2312# B.N.T. 123°F

Vis. 62 Wt. 9.2 Fl. 8.0

4650 (RR47)
10-6-2010
1:00 PM

50

4700

CH. 3.200 PH 11.0 CCM .5#
(10-6-10)
SURVEY @ 4650 1°

In Minutes

0 5 10 15 15

DRILLING TIME

DEPTH

SAMPLE DESCRIPTION

REMARKS