

# SAMPLE LOG

350' N + 165' E of Gray #8

DRILL HOLE: MLZ #1 Hiller LOC.: Approx. 2830' FSL; 675' FEL, Sec. 34,  
PROP. OWNER: J.M. & M.J. Hiller T30S, R21E, Neosho Co., Ks.  
DRILL CONTRACTOR: L-K Drilling Co. LOGGED BY: ZHT  
DRILL OPERATOR: H. Laverty ELEV.: +845 topog SURVEY ELEV. 661.8  
DATE STARTED: 6/22/78 DATE COMPLETED: 6/24/78  
CASING LEFT IN HOLE: 45' of 7" O.D. surface casing,  
258' of 4½" O.D. casing, cemented in  
TOTAL DEPTH: 265'

0- 1 - soil  
1- 10 - Clay soil and gravel (Driller: "Gravel from 9-12')  
10- 15 - Limestone, light brown, with abundant coral; river gravel,  
orange brown, 5%  
15- 20 - Limestone, medium gray-brown, fine grain, some argillaceous;  
limestone as above, with coral, 10%; river gravel 5%  
20- 25 - Limestone, medium to medium-dark gray, sparse fossils, fine  
grain, 60%; limestone, light brown, coral, 10%; river gravel,  
orange, 30%  
23- 25 - Shale, medium dark gray, fissile, 80%; shale, black, fissile,  
20%; trace limestone, gray; limestone light brown, coral,  
gravel  
25- 30 - Shale, black, 90%; shale, medium gray, 10%  
30- 35 - Limestone, medium gray, very fossiliferous; limestone, light  
brown, coral, 5%; orange river gravel, 10%  
35- 40 - Limestone, dark gray-brown, fine grain, some fossiliferous;  
trace limestone, light brown, coral; orange river gravel  
40- 45 - Black shale, 50%; limestone as above 50%; trace orange river  
gravel  
45- 50 - Black shale, 90%; shale, light gray, 10%; also light gray  
selvage; trace brown limestone  
50- 55 - Limestone, light gray (some medium & dark gray light brown),  
fine grain  
55- 60 - Shale, light gray (75%), medium gray (25%); trace pyrite  
60- 75 - Shale, medium gray; trace pyrite; some is silty  
75- 80 - Shale, medium gray, some is silty  
80-105 - Shale, medium gray, silty  
105-110 - Shale, medium gray, silty; trace black shale  
110-115 - Shale, medium gray  
115-125 - Shale, medium gray; trace brown siltstone  
125-130 - Limestone, very dark gray, fossiliferous, 35%; shale, black,  
35%; shale, medium gray, 30% (Driller: Coal @129-130')  
130-135 - Coal, black, 30%; shale, black, 45%; limestone, dark gray  
with trace pyrite, very fossiliferous, 25%; trace brown  
siltstone  
135-140 - Shale, medium & dark gray, 85%; limestone, dark gray, fossili-  
ferous with pyrite, 15%  
140-145 - Shale, black, 55%; shale, medium and light gray, 20%; limestone,  
dark gray, dark gray-brown, some fossiliferous, 25%  
145-150 - Shale, black, 60%; shale, light gray, 40% (Driller: shale and  
lime streaks at 143-146')  
150-152 - Limestone, dark gray, medium grain, pyritic, fossiliferous  
(Driller: hit (H<sub>2</sub>S) gas at 152'. Smells like rotten eggs)  
152-155 - Limestone as above; trace light gray shale  
155-160 - Shale, light gray, silty, 70%; shale, black, 20%; limestone,  
pyritic, medium gray-brown, fine grain (some oolitic), 10%  
160-165 - Shale, black  
CFS@166 - Shale, gray with black carbon specks  
Core begins at 167  
167-168 - Shale  
168-207 - Sandstone

207-215 - Sandstone, dark gray-brown, fine-medium grain, oil  
215-220 - Sandstone, dark gray-brown, fine-medium grain, minor mica, oil  
220-230 - Sandstone, dark gray-brown, fine-medium grain  
230-235 - Sandstone, dark gray-brown (70%) and medium brown (30%), fine-medium grain  
235-240 - Sandstone, dark gray-brown, fine-medium grain 70%; sandstone, medium brown, fine grain, 30%; trace limestone, medium gray-brown, fine grain  
240-245 - Sandstone, dark gray-brown, fine-medium grain; trace shale, light and medium gray  
CFS@245 - Shale, medium gray (HL-shale at 242)  
245-250 - Shale, medium gray; trace light gray selvage, trace pyrite  
250-255 - Shale, medium gray  
255-260 - Shale, dark Gray, trace siltstone, medium gray (Driller: hit coal at 259 or 260')  
260-265 - Shale, black, 50%; shale, light gray, 30%; coal, 20%, also light gray selvage  
CFS@265 - Shale, light to medium greenish-gray, silty, 80%; shale, black, 20%; trace pyrite  
265 - TD

#### Remarks

1. Driller says, "Flowing oil as much as Gray #4. Gas is hard to compare as it came in higher stratigraphically. Gas has rotten smell ( $H_2S$ )".
2. The drill hole was standard rotaried with water, no additives. The interval 167-207' was cored and sent for basic analysis to Oil Field Research, Chanute.
3. Circulation time in lower part of hole averaged 3 minutes (a 3 ft. time lag).
4. The oil-bearing sand, including shale and siltstone lenses, is 74' thick (168 to 242').
5. A strip log is attached which compares five types of logs of Hiller #1 with each other:
  - a. ZHT composite (5' interval) sample log.
  - b. ZHT spot sample log.
  - c. Driller's log.
  - d. Geograph log.
  - e. Gamma ray-neutron log.
6. The well has been perforated at 168.7' to 176.5' and fractured.
7. Water salinity of oil sand = 13,500 ppm