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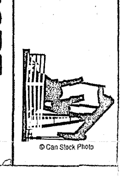

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GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

COMPANY Ad Astra Oil, LLC
LEASE Becker #5
FIELD Fred
LOCATION SW-NW-NE-NE
SEC 14 TWSP 9S RGE 21E
COUNTY Leavenworth STATE Kansas
CONTRACTOR Hatt Drilling, LLC
SPUD 8/4/2017 COMP 8/9/2017
RTD 1538 LTD 1538
MUD UP 1150 TYPE MUD

ELEVATIONS
KB
DF
GL 1097 est
Measurements Are All From Ground Level

CASING
SURFACE 8 5/8"
PRODUCTION 4 ½"

ELECTRICAL SURVEYS
Density/Neutron & Dual Induction

FORMATION TOPS AND STRUCTURAL POSITION

FORMATION	SAMPLE TOP	ELECTRIC LOG TOP	SUB-SEA DATUM	STRUCTURAL POSITION A	B	C
Upper McClouth	1340	1304	-207			
Lower McClouth		1356	-259	-277	-286	-273
Burgess Sand	1426	1420	-323	-337	-345	-340
Miss	1442	1438	-341	-355	-359	-357

REFERENCE WELLS FOR STRUCTURE
A. Becker #1 (Victor J. Leis) sec 14 T9/R21E
B. Fredericks #2 (Victor J. Leis) sec 11 T9/R21E
C. Becker #3 (Victor J. Leis) sec 14 T9/R21E

Becker #5
Geologist Report

Ad Astra Oil, LLC

Geologist: Jarred Leis

Dear Sirs,

The following information is based on my microscopic examination of the drilling cuttings in this well from 1290 ft to Total Depth. All measurements for this well were taken from an estimated ground level elevation of 1097ft. Also, I will add analysis of the *Open Hole logs* that were run.

The Zones of interest in the Becker #5 were the Burgess Sand and Mississippi (1490-1496). The Burgess was comparable to the completed wells in this field, and appeared economic. The zone in the Miss looks economic on the open hole logs however with loss of circulation shortly after cutting this zone, cuttings were somewhat inconclusive. They are described in detail below.

Burgess Sand (1420-1436 e-log's)

1426-1436 sample log: Sandstone: fine-grained, loose grains, very friable, good inter-crystalline porosity, good odor, samples saturated in heavy oil, gas bubbles, great show of free oil, dull blue fluorescence. The open hole logs indicate that the upper 6 ft. of the Burgess has extremely good porosity (30-37%) with great gas crossover. As well as great porosity, the dual induction log shows 15-17 ohms resistivity in the upper 6ft which indicates good hydrocarbon saturation.

Miss Zone (1490-1496 e-log's)

1500 - 1510 on sample log after circulation was regained: Limestone: tan to grey, very fine grained, fair to good crystalline porosity, very scattered free oil, faint odor, poor fluorescence. The open hole logs indicate great porosity from 1490-1496 (26-36%) with great gas crossover. As well as great porosity, the dual induction log shows ~30 ohms resistivity which could indicate a good saturation of hydrocarbons.

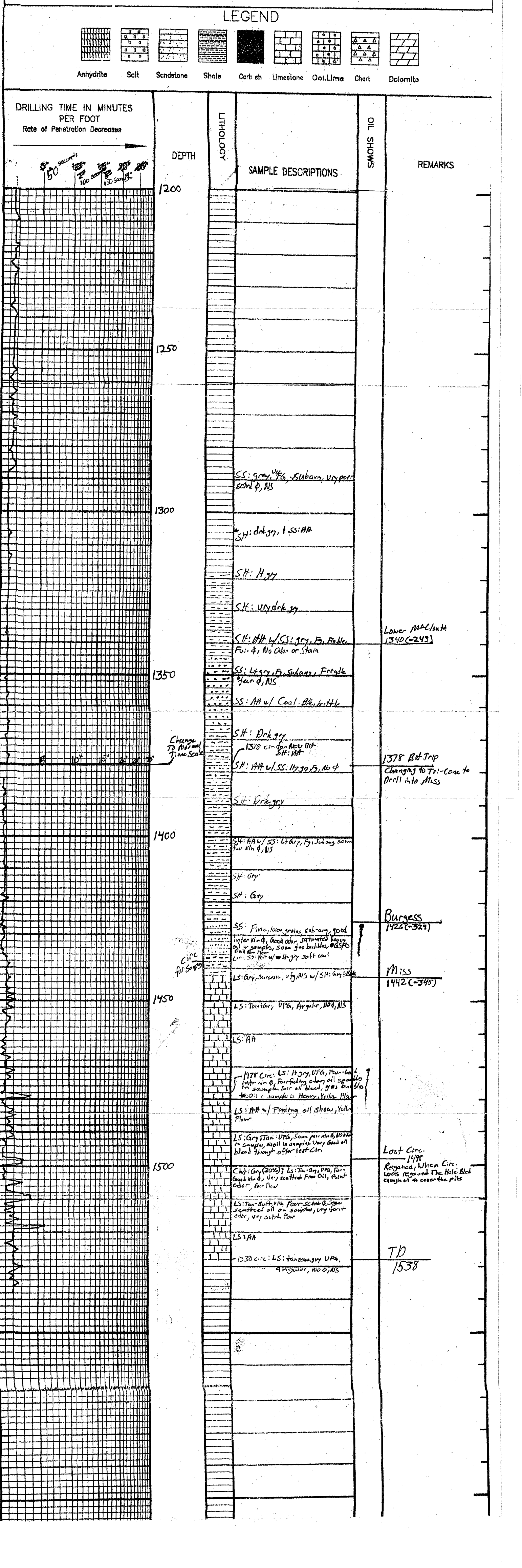
Summary

Due to significant oil shows in the Burgess Sand and an abundant amount of oil bleed on the pits while drilling the Mississippi, as well as great attributes for both zones on the open hole logs the decision was made to run 4 ½" casing to further evaluate these zones.

Respectfully Submitted,

Jarred Leis
Petroleum Geologist

REMARKS



LEGEND
Anhydrite
Salt
Sandstone
Shale
Carb sh
Limestone
Ool.Lime
Chert
Dolomite
DRILLING TIME IN MINUTES PER FOOT
Rate of Penetration Decreases
50 seconds
100 seconds
150 seconds
DEPTH
LITHOLOGY
SAMPLE DESCRIPTIONS
OIL SHOWS
REMARKS
1200
1250
1300
1350
1400
1450
1500
SS: grey, vfG, Subang, vry porr scthd ф, NS
SH: drk gry, 1 SS: AA
SH: lt gry
SH: vry drk gry
SH: AA w/ SS: gry, Fg, Friable, Fair ф, No Odor or Stain
SS: Lt gry, Fg, Subang, Friable, fair ф, NS
SS: AA w/ Coal: Blk, brittle
SH: Drk gry
1378 circ for New Bit SH: AA
SH: AA w/ SS: lt gry, Fg, No ф
SH: Drk gry
SH: AA w/ SS: Lt Gry, Fg, Subang, some fair xln ф, NS
SH: Gry
SH: Gry
SS: Fine, loose grains, sub-ang, good inter xln ф, Good odor, saturated heavy oil in samples, Some gas bubbles, GSFO Dull Blue Flour
Cir: SS: AA w/ lt gry soft coal
LS: Gry, Sucrosic, vfg, NS w/ SH: Gry: Blk
LS: Tan: Gry, VFG, Angular, NO ф, NS
LS: AA
1478 Circ: LS: lt gry, VFG, Fair-Good inter xln ф, Fair fading odor, oil speckles in sample. Fair oil bleed, gas bubbles Oil in samples is Heavy, Yellow Flour
LS: AA w/ Fading oil show, Yellow Flour
LS: Gry: Tan: VFG, Some poor xln ф, NO odor in samples, No oil in samples. Very Good oil bleed though after lost Circ.
Cht: Gry (20%); LS: Tan-Gry, VFG, Fair-Good xln ф, Very scattered Free Oil, Faint odor, Poor Flour
LS: Tan-Buff, VFG, Poor sctrd ф, Some scattered oil on samples, vry faint odor, vry sctrd flour
LS: AA
1530 circ: LS: tan some gry VFG, angular, NO ф, NS
Change To Normal Time Scale
Circ for Samples
Lower McClouth 1340 (-243)
1378 Bit Trip Changing to Tri-Cone to Drill into Miss
Burgess 1426 (-329)
Miss 1442 (-345)
Lost Circ. 1498 Regained, When Circ. was regained The Hole Bled enough oil to cover the pits
TD 1538