

BJC

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ORIGINAL

Geological Report

15-097-21426

Advantage Resources, Inc.
#2 HAL ROSS
Center NE/4
Section 20-T28S-R17W
Kiowa County, Kansas

ORIGINAL

October 15, 1997

**#2 HAL ROSS
Center NE/4
Section 20-T28S-R17W
Kiowa County, Kansas**

Field:
Elevations: 2222 Kelly Bushing
2219 Derrick Floor
2211 Ground Level
Wellsite Geologist: J.E. Jespersen
Contractor: Duke Drilling Inc. -Rig #5
Commenced: September 26, 1997
Completed: October 5, 1997
Rotary Total Depth: 4943 feet
Log Total Depth: 4941 feet
Surface Casing: 8 5/8" @ 433 feet with 275 sacks
Production Casing: 4 1/2" @ 4940 feet with 175 sacks
Electrical Surveys: ELI Wireline: Dual Induction, Compensated Density/Neutron
Hole Size: 12 1/4" from surface to 445 feet
7 7/8" from 445 to 4943 feet
General Information: Samples saved from 3600 feet to 4943 feet (RTD).
Drilling time kept from 3600 to 4943 feet (RTD).
Samples examined from 3600 to 4943 feet (RTD).
Drilling supervised from 4000 feet to RTD. Mud up
at 3600 feet. Mud type, chemical.

FORMATION	<u>LOG</u>		<u>SAMPLE</u>		STRUCT COMP.
	TOP	DATUM	TOP	DATUM	
Anhydrite	1124	+1098			1' High
Howard	3656	- 1434	3656	- 1434	2' High
Heebner	4084	- 1862	4085	- 1863	2' Low
Brown Lime	4232	- 2010	4235	- 2013	4' High
Lansing	4250	- 2038	4253	- 2031	6' Low
Stark Shale	4543	- 2321	4549	- 2327	3' High
B/Kansas City	4630	- 2408	4639	- 2417	Flat
Cherokee	4771	- 2549	4774	- 2552	5' High
Mississippian	4818	- 2596	4821	- 2599	6' High
Kinderhook	4890	- 2678	4896	- 2674	8' Low
Total Depth	4941	- 2719	4943	- 2721	

Reference Well/Structural Comparison: Advantage Res., Inc. #1 Hal Ross, NE/4 SE/4,
20-28S-17W, Kiowa County, Kansas

NOTE: Pipe strap at 4270 feet was 5.91 feet short to the board.

DAILY PENETRATION

<u>DATE</u>	<u>DEPTH</u>	<u>REMARKS</u>
9/26/97	- 0 -	Spud 7:15 pm Set 8 5/8" @ 443' with 275 sx Plug down 2:45 am 9/27/97 - WOC
9/27	445'	Drilled plug 10:45 am 9/27/97
9/28	1488'	Drilling
9/29	2650'	Drilling
9/30	3325'	Drilling
10/1	3980'	<u>DST #1</u> <u>4256-4270</u>
10/2	4270'	Drilling
10/3	4740'	<u>DST #2</u> <u>4807-4834</u>
10/4	4834'	<u>DST #3</u> <u>4835-4851</u>
10/5	4943'	RTD @ 6:45 am ELI Log 4 1/2" csg set @ 4940 'w/175 sx

BIT RECORD

NO.	SIZE	MAKE	TYPE	DEPTH OUT	FEET	HOURS
S	12 1/4	Smith	RR	445	445	2 1/2
1	7 7/8	W/Mc	42 CF	4943	4498	97 1/4

MUD RECORD

Dombar Mud Inc.

CHK	DEPTH	WT	VIS	FIL	PH	PV	YP	GELS	CHLORIDES	SOL
1	1873	-	-	-	-	-	-	-	-	-
2	3574	8.6	37	17.2	11.0	14	8	6/10	8,500	1.7%
3	4173	9.0	32	12.0	10.5	17	14	8/20	5,200	4.7%
4	4270	9.1	48	16.0	10.0	16	12	8/20	6,500	5.3%
5	4796	9.3	48	12.8	10.0	17	14	8/22	5,600	6.8%
6	4851	9.3	46	12.8	10.0	17	14	10/22	8,200	6.7%

DRILL STEM TESTS

(Trilobite)

NO	INTERVAL	IFP	ISIP	FFP	FSIP	IHP/FHP
1	4256-4270 Recovery:	89-78/15 Trace of gas in pipe 35' Oil & gas cut muddy water (6%O, 70%W, 24%M)	1272/45	111-89/45	1217/60	2148-2049
2	4807-4834 Recovery:	51-30/30 GTS in 43 min. - IFP Gauge: 13.4 MCF - 5 min., 12.9 MCF - 10 min., 12.9 MCF 15 thru 30 min., 12.9 MCF FFP Gauge: 31.4 MCF - 5 min., 16.7 MCF - 10 min. thru 25 min., 11.3 MC 30 min., 10.7 MCF - 40 min., 10.1 MCF - 50 min., 6.33 MCF - 60 min., 5.86 MCF 45' Slightly oil cut muddy water (6%O, 24%W, 70%M)	1256/60	41-20/60	1246/90	2278-2258
2	4835-4861 Recovery:	89-56/30 1430' Gas in pipe 30' Mud cut oil (58%O, 30%M, 42%W) 30' Free Oil (34 deg. API) 30' Mud cut oil (66%O, 34%M)	1327/60	111-78/15	NA	2478-2258

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Geological Formations and Porosity Zones

A detailed lithological log was maintained from **3600 feet to 4943 feet** (RTD). The following are formation tops, recoveries of drillstem tests, descriptions of reservoirs containing shows of oil and descriptions of reservoirs felt pertinent to the accumulation of hydrocarbons in the area. The depths are interpolated from drillers measurements and measured from the kelly bushing.

Anhydrite	Sample	Not called
	E-Log	1124 +1098
B/Anhydrite	Sample	Not called
	E-Log	1144 +1078
Howard	Sample	3656 -1434
	E-Log	3656 -1434

SL 3658-3677
EL 3658-3671

Limestone, white to light buff, fine crystalline, fossiliferous, slightly chalky. Fair to good intergranular porosity. No shows; no fluorescence.
Judged this zone to be of no commercial value.

Topeka	Sample	3685 -1463
	E-Log	3681 -1459

SL 3709-3718
EL 3706-3710

Limestone, white to light grey, fine crystalline, fossiliferous. Fair to good interfossiliferous porosity. No shows; no fluorescence.
Judged this zone to be of no commercial value.

SL 3736-3746
EL 3736-3742

Limestone, white to light grey, fine crystalline, fossiliferous. Fair to good interfossiliferous porosity. No shows; no fluorescence.
Judged this zone to be of no commercial value.

SL 3777-3785
EL 3776-3780

Limestone, white to light grey, very fine crystalline, fossiliferous, chalky. Good intergranular porosity. No shows; no fluorescence.
Judged this zone to be of no commercial value.

Geological Formations and Porosity Zones

- SL 3794-3830 Limestone, light buff, fine crystalline, sucrosic. Good
EL 3814-3828 intercrystalline porosity. No shows; no fluorescence.
Judged this zone to be of no commercial value.
- SL 3834-3858 Limestone, light buff, fine crystalline, sucrosic. Good
EL 3842-3854 intercrystalline porosity. No shows; no fluorescence.
Judged this zone to be of no commercial value.
- SL 3887-3894 Limestone, light buff, fine crystalline, fossiliferous. Fair to good
EL 3885-3890 interfossiliferous and vugular porosity. No shows; no
fluorescence.
Judged this zone to be of no commercial value.
- SL 3933-3949 Limestone, white to light grey, fine crystalline, fossiliferous,
EL 3930-3946 w chert, fresh, fossiliferous. Fair intercrystalline porosity. No
shows; no fluorescence.
Judged this zone to be of no commercial value.
- SL 3993-4018 Limestone, white to light buff, fine crystalline, fossiliferous, cherty.
EL 3995-4004 Fair intercrystalline and vugular porosity. No shows; no
fluorescence.
Judged this zone to be of no commercial value.
- SL 4050-4071 Limestone, white to light grey, fine crystalline, chalky. Fair to
EL 4050-4070 good intercrystalline and intergranular porosity. No shows; no
fluorescence.
Judged this zone to be of no commercial value.

Heebner

Sample	4085 -1863
E-Log	4084 -1862

Toronto

Sample	4102 -1880
E-Log	4102 -1880

Geological Formations and Porosity Zones

SL 4102-4109

Limestone, light grey to light buff, very fine to fine crystalline, fossiliferous, cherty. Fair intercrystalline porosity. No shows; no fluorescence.
Judged this zone to be of no commercial value.

Douglas Shale	Sample	4138	-1916
	E-Log	4144	-1922

Brown Lime	Sample	4235	-2013
	E-Log	4232	-2010

Lansing	Sample	4253	-2031
	E-Log	4250	-2028

SL 4257-4261
EL 4253-4258
Limestone, buff, medium crystalline, oolitic. Good interoolitic and oolitic porosity. **No free oil.** Good fluorescence; very faint odor. **50-unit gas kick on hot wire.** Tested this zone. (See DST #1) Due to the test results, judged this zone to be of no commercial value.

Drillstem Test #1

Weak to fair blow during IFP
Fair blow throughout FFP
Recovered:

4256-4270

Trace of gas in pipe
35' O&GC Mdy SlitWtr
(6%O, 70%W, 24%M)

Initial Flow Pressures:	89# to 78# / 15 min.
Initial Shut-In Pressure:	1272# / 45 min.
Final Flow Pressures:	111# to 89# / 45 min.
Final Shut-In Pressure:	1217# / 60 min.
Initial Hydrostatic Pressure:	2148#
Final Hydrostatic Pressure:	2049#
Bottomhole Temperature:	141 degrees

Geological Formations and Porosity Zones

- SL 4280-4294 Limestone, white to light grey, fine crystalline, fossiliferous, chalky,
EL 4280-4290 intercrystalline and intergranular porosity. No shows; no
fluorescence. No odor.
Judged this zone to be of no commercial value
- SL 4306-4314 Limestone, white, fine to medium crystalline, fossiliferous, oolitic.
EL 4302-4308 Fair to good intercrystalline and oolitic porosity. No shows.
No fluorescence. No odor.
Judged this zone to be of no commercial value.
- SL 4345-4355 Limestone, white to cream, very fine crystalline, oolitic, sucrosic.
EL 4342-4352 Good oolitic and intergranular porosity. No shows. No
fluorescence; no odor.
Judged this zone to be of no commercial value.
- SL 4368-4383 Limestone, light buff, fine crystalline, sucrosic, chalky. Fair to
EL 4366-4382 good intercrystalline and intergranular porosity. No shows; no
fluorescence; no odor.
Judged this zone to be of no commercial value.
- SL 4413-4420 Limestone, white to light buff, fine crystalline, fossiliferous. Good
EL 4410-4416 intercrystalline and vugular porosity. No shows; no fluorescence;
no odor.
Judged this zone to be of no commercial value.
- SL 4432-4436 Limestone, white, very fine crystalline, cherty, chalky. Fair
EL 4429-4432 intergranular porosity. No shows; no fluorescence; no odor.
Judged this zone to be of no commercial value.
- SL 4460-4465 Limestone, light buff, fine crystalline, fossiliferous. Fair
EL 4456-4462 interfossiliferous porosity. No shows; no fluorescence; no odor.
Judged this zone to be of no commercial value.
- SL 4470-4480 Limestone, light buff, fine crystalline, sucrosic. Fair to good
EL 4470-4476 intercrystalline porosity. No shows; no fluorescence; no odor.
Judged this zone to be of no commercial value.

Geological Formations and Porosity Zones

SL 4486-4494 Limestone, light grey, fine crystalline, fossiliferous. Fair to good
EL 4483-4490 interfossiliferous and intercrystalline porosity. No shows; no
fluorescence; no odor.
Judged this zone to be of no commercial value.

SL 4504-4515 Limestone, light buff, fine crystalline, sucrosic. Fair to good
EL 4499-4511 intercrystalline porosity. No shows; no fluorescence; no odor.
Judged this zone to be of no commercial value.

Stark Shale	Sample	4549 -2327
	E-Log	4543 -2321

SL 4570-4576 Limestone, light grey to light buff, fine crystalline, dense,
EL 4560-4564 translucent. No visible porosity. No shows; no fluorescence; no
odor.
Judged this zone to be of no commercial value.

Hushpuckney Shale	Sample	4597 -2375
	E-Log	4590 -2368

SL 4605-4639 Limestone, light grey, dense. No visible porosity. No shows. No
EL 4600-4630 fluorescence; no odor.
Judged this zone to be of no commercial value.

Base Kansas City	Sample	4639 -2417
	E-Log	4630 -2408

Altamont	Sample	4695 -2473
	E-Log	4690 -2468

SL 4706-4730 Limestone, light buff, very fine crystalline, cherty, dense. Poor
EL 4700-4704 intercrystalline porosity. No shows; no fluorescence; no odor.
Judged this zone to be of no commercial value.

Pawnee	Sample	4736 -2514
	E-Log	4732 -2510

Geological Formations and Porosity Zones

SL 4736-4742 Limestone, light grey, fine crystalline, fossiliferous, slightly shaley.
EL 4732-4736 Poor interfossiliferous and intercrystalline porosity. No shows; no
fluorescence; no odor.
Judged this zone to be of no commercial value.

Cherokee Shale

Sample 4774 -2552
E-Log 4771 -2549

Base Cherokee Lime

Sample 4810 -2588
E-Log 4804 -2582

Mississippian

Sample 4821 -2599
E-Log 4818 -2596

SL 4821-4834 Chert, white, amber, fresh, some tripolitic, fossiliferous. **Trace of**
EL 4820-4826 **black inert oil stain**; little or poor fluorescence; No odor.
18-unit gas kick on hot wire. Tested this zone. (See DST #2)
Due to test results, recommend this zone be perforated and
further tested.

Geological Formations and Porosity Zones

Drillstem Test #2

4807-4834

Gas to surface 13 min. into IFP

Gauged 13.4 mcf after 5 min. to 30 min. of IFP

Gas gauged 12.9 mcf

FFP - Gas gauged 31.4 mcf

5 min.	16.7 mcf
10 min.	15.1 "
15 min.	11.3 "
20 min.	11.3 "
25 min.	11.3 "
30 min.	10.7 "
40 min.	10.1 "
50 min.	6.33 "
60 min.	5.86"

Recovered:

45' Slightly oil cut muddy saltwater
(6%O, 24%W, 70%M)

Initial Flow Pressures:

51# to 30# / 30 min.

Initial Shut-In Pressure:

1256# / 60 min.

Final Flow Pressures:

41# to 20# / 60 min.

Final Shut-In Pressure:

1246# / 90 min.

Initial Hydrostatic Pressure:

2278#

Final Hydrostatic Pressure:

2258#

Bottomhole Temperature:

151 degrees

SL 4834-4842

EL 4830-4834

Chert, white, milky, amber, fresh, fossiliferous, fractured. **No free oil. Spotted dark oil stain on fractured edges.** No fluorescence; no odor. **Good gas kick on hot wire (18 units).** Tested this zone. (See DST #3) Due to the recovery of the test, recommend this zone be perforated and further tested.

Geological Formations and Porosity Zones

Drillstem Test #3

4835-4861

Good blow throughout IFP
Off bottom bucket in 2 min.
Good blow throughout FFP
Recovered:

1430' Gas in pipe
30' Mud cut oily water
(58%O, 38%M, 4%W)
30' Free oil (34 deg. API)
30' Mud cut oil
(66%O, 34%M)
89# to 56# / 30 min.
1327# / 60 min.
111 to 78# / 15 min.
Not taken
2478#
2258#

Initial Flow Pressures:
Initial Shut-In Pressure:
Final Flow Pressures:
Final Shut-In Pressure:
Initial Hydrostatic Pressure:
Final Hydrostatic Pressure:

Kinderhook

Sample 4896 -2674
E-Log 4890 -2668

SL 4939-4940
Not Logged

Sandstone, white, quartitic, fine grained, friable. Good
intergranular porosity. No shows; no fluorescence; no odor.
Judged this zone to be of no commercial value.

Rotary Total Depth

4943 -2721

Electric Log Total Depth

4941 -2719

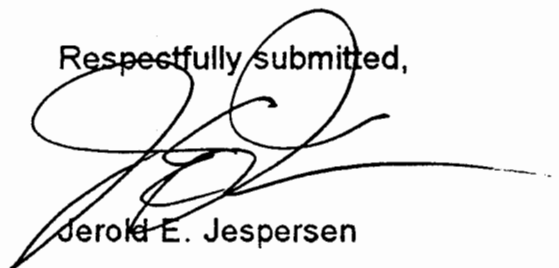
Ran ELI Wireline: Dual Induction, Comp Density/Neutron Logs

4 1/2" casing set @ 4940' with 175 sacks

REMARKS and RECOMMENDATIONS

Recommend running 4 1/2" casing to be set @ 4940 feet to further evaluate the **Mississippian** formation through **perforations** (using electric log depths) **4830-4833 and 4818-4822.**

Respectfully submitted,

A handwritten signature in black ink, appearing to be 'J.E. Jespersen', written over the printed name.

Jerold E. Jespersen

JEJ

9/26/97-10/05/97:10/15/97