BJC

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Advantage Resources Inc.
BYRD HARDY "C" #1
NE/4 NW/4 SW/4
(2210' FSL & 990' FWL)
Section 24-T28S-R18W
Kiowa County, Kansas

API#15-097-21359

December 10, 1993

December 12, 1993

Advantage Resources - Schulein Company
Byrd Hardy "C" #1
NE/4 NW/4 SW/4
(2210' FSL & 990' FWL)
Section 24-T28S-R18W
Kiowa County, Kansas
API#15-097-21359

Field:	Hardy Extension
Elevations:	2229 Kelly Bushing 2227 Derrick Floor 2220 Ground Level
Wellsite Geologist:	J.E. Jespersen
Contractor:	Duke Drilling Company - Rig #5
Commenced:	November 29, 1993
Completed:	December 07, 1993
Rotary Total Depth:	5000 feet
Log Total Depth:	4995 feet
Surface Casing:	8 5/8" @ 495' with 285 sacks
Production Casing:	4 1/2" set @ 4991' with 200 sacks
Electrical Surveys:	ELI Wireline: Dual Induction, CDCN, RAG
Hole Size:	12 1/4" from surface to 500' 7 7/8" from 500'to 5000' (RTD)
General Information:	Samples saved from 3600 (RTD). Drilling time kept from 1050-1150' and 3600 to 5000' (RTD). Samples examined from 3600 to 5000' (RTD). Drilling supervised from 4000 feet to RTD. Mud up at 3200'. Mud type, Chemical.

Formation	LOG TOPS Top	/ Datum	SAMPLE TOPS Top	/ Datum	Structural Comparison
T/Anhydrite	1141	+1088	1148	+1081	1' Low
Topeka	3646	-1417	3647	-1418	2' Low
Heebner	4067	-1838	4073	-1844	7' Low
Douglas	4105	-1876	4100	-1871	19' Low
Brown Lime	4230	-2001	4236	-2007	10' Low
Lansing	4246	-2017	4252	-2023	11' Low
B/Kansas City	4635	-2406	4644	-2415	1' Low
Cherokee	4768	-2539	4774	-2545	5' Low
Mississippian	4818	-2589	4823	-2594	2' Low
Kinderhook	4899	-2670	4904	-2675	17' Low

Reference Well or Structural Comparison: Advantage Resources W.E. Keller #1, (north offset), 750' FNL & 1000' FWL, Section 24-28S-18W.

Chronological History

Date	Depth	DAILY PENETRATION Remarks
11/29/93	0	Spud 5:15 PM - Set 8 5/8" @ 495' with 285 sacks. Plug down 12:15 AM 11/30/93.
11/30	500	Drilling
12/01	2060	Drilling
11/02	2980	Drilling
11/03	3740	Drilling
11/04	4300	Drilling
11/05	4725	DST #1 4823-4848
11/06	4848	**RTD @ 10:45 PM.**
11/07	5000	ELI Wireline logs run. **Run 4 1/2" set at 4991' with 200 sacks.**

Chronological History (Cont'd)

B I T R E C O R D

No.	Size	Make	Type	Depth Out	Feet	Hours
S	12 1/4"	Sec	RT	500	500	2 1/2
1	7 7/8"	W/M	51PFRR	1762	1262	11
2	7 7/8"	W/M	53CSF	4755	2993	85
3	7 7/8"	W/M	53CSF	5000	245	15 1/4

M U D R E C O R D

(Mud-Co)

CHK	DEPTH	WT	VIS	FIL	PH	PV	YP	GELS	CHLORIDES	SOLIDS
1	783	----------	----------	----------	NATIVE SOLIDS	----------	----------	----------	----------	----------
2	3230	8.7	43	9.6	11.0	10	15	8/28	7,000	2.5%
3	3900	9.4	43	12.0	10.5	13	18	10/26	8,000	7.2%
4	4385	9.3	40	11.2	10.5	10	15	12/32	6,000	6.8%
5	4756	9.4	44	12.0	10.0	13	19	12/30	7,000	7.4%
6	4893	9.3	42	12.0	10.0	12	16	12/28	8,000	6.6%

D R I L L S T E M T E S T S

Western Testing

No.	Interval	IFP	ISIP	FFP	FSIP	IHH-FHH
1	**4823-4848**	96-86/15	1175/60	75-53/60	1175/120	2455-2401

GTS in 8 minutes.
Gauge: First Open
68.8 MCF 10 min.
78.1 MCF 20 min.
Gauge: Second Open
108 MCF 10 min.
94.5 MCF 20-30-40 min.
86.3 MCF 50-60 min.
Rec: 80' Gas cut mud

Geological Formations and Porosity Zones

A detailed lithological log was maintained from 3600 feet to 5000 feet (RTD). The following are formation tops, recoveries of drill stem 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.

T/Anhydrite	Sample	1148	+1081
	E-Log	1141	+1088
B/Anhydrite	Sample	1162	+1067
	E-Log	1162	+1067
Topeka	Sample	3647	-1418
	E-Log	3646	-1417

SL	3698-3712	Limestone, light buff to buff, fine crystalline,
EL	3698-3712	fossiliferous, fair interfossiliferous porosity. No shows. No fluorescence. No odor. Judged this zone to be of no commercial value.
SL	3777-3855	Limestone, white to light buff, fine crystalline,
EL	3760-3840	fossiliferous, slightly chalky. Fair to good interfossiliferous and intergranular porosity. No shows. No fluorescence. No odor. Judged this zone to be of no commercial value.
SL	4041-4062	Limestone, white to light grey, fine crystalline,
EL	4038-4050	fossiliferous, chalky. Fair interfossiliferous and intergranular porosity. No shows. No fluorescence. No odor. Judged this zone to be of no commercial value.

Geological Formations and Porosity Zones (cont'd)

Heebner	Sample	4073	-1844
	E-Log	4067	-1838
Toronto	Sample	4087	-1858
	E-Log	4082	-1853
Douglas Shale	Sample	4100	-1871
	E-Log	4105	-1876
Brown Lime	Sample	4236	-2007
	E-Log	4230	-2001
Lansing	Sample	4252	-2023
	E-Log	4246	-2017

SL 4255-4261
EL 4248-4254
Limestone, buff, fine crystalline, oolitic, good interoolitic and oolicastic porosity. No shows. No odor. Good fluorescence.
Judged this zone to be of no commercial value.

SL 4279-4295
EL 4275-4289
Limestone, light buff to light grey, fine crystalline, cherty, fossiliferous. Poor interfossiliferous porosity. No shows. No dluorescence. No odor.
Judged this zone to be of no commercial value.

SL 4306-4316
EL 4300-4305
Limestone, light buff, fine crystalline, fossiliferous. Fair interfossiliferous and vugular porosity. No shows. No fluorescence. No odor.
Judged this zone to be of no commercial value.

Geological Formations and Porosity Zones (cont'd)

SL 4345-4356
EL 4338-4347

Limestone, cream to light buff, fine crystalline, fossiliferous, sucrosic. Fair intercrystalline and interfossiliferous porosity. No shows. No fluorescence. No odor.
Judged this zone to be of no commercial value.

SL 4365-4382
EL 4356-4375

Limestone, cream to light buff, fine crystalline, oolitic, sucrosic. Fair intercrystalline and interoolitic porosity. No shows. No fluorescence. No odor.
Judged this zone to be of no commercial value.

Drum

Sample 4415 -2186
E-Log 4407 -2178

SL 4415-4424
EL 4410-4418

Limestone, buff, fine crystalline, oolitic, sucrosic, good intercrystalline and oolicastic porosity. No shows. No fluorescence. No odor.
Judged this zone to be of no commercial value.

SL 4436-4442
EL 4432-4434

Limestone, light buff, fine crystalline, fossiliferous, sucrosic, chalky. Fair interfossiliferous and intergranular porosity. No shows. No fluorescence. No odor.
Judged this zone to be of no commercial value.

SL 4458-4463
EL 4453-4458

Limestone, light buff, fine crystalline, sucrosic. Fair intercrystalline porosity. No shows. No fluorescence. No odor.
Judged this zone to be of no commercial value.

SL 4475-4481
EL 4468-4474

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

Geological Formations and Porosity Zones (cont'd)

SL 4503-4509
EL 4496-4499

Limestone, white to cream, very fine crystalline, sucrosic. Fair intercrystalline porosity. No shows. No fluorescence. No odor.
Judged this zone to be of no commercial value.

SL 4606-4616
EL 4600-4609

Limestone, white to buff, fine crystalline, oolitic, fossiliferous. Poor to fair interoolitic and interfossiliferous porosity. No shows. No fluorescence. No odor.
Judged this zone to be of no commercial value.

Base Kansas City Sample 4644 -2415
E-Log 4635 -2406

SL 4704-4715
EL 4712-4716

Limestone, light grey, fine crystalline, fossiliferous, dense. Poor interfossiliferous and intercrystalline porosity. No shows. No fluorescence. No odor.
Judged this zone to be of no commercial value.

SL 4734-4743
EL 4730-4732

Limestone, buff, fine crystalline, fossiliferous. Poor intercrystalline porosity. ***No show of free oil.*** Dendritic residue oil stain; no fluorescence, no odor. No kick on chromatograph or hot wire.
Judged this zone to be of no commercial value.

Cherokee Sample 4774 -2545
E-Log 4768 -2539

Mississippian Sample 4823 -2594
E-Log 4818 -2589

Geological Formations and Porosity Zones (cont'd)

SL 4823-4848
EL 4818-4840

Chert, white to amber, fresh, fossiliferous. Partly tripolitic. ***No free oil.*** **Brown live oil staining on fractured edge and tripolitic (spongy) porosity.** No odor. Very slight fluorescence. 25-unit kick on chromatograph; hot wire not working. Recommend this well be drillstem tested. Due to the results of the test, recommend this zone be further tested.

Drill Stem Test #1		**4823-4848**
Gas to surface in 8 min. of IFP		
Gauge:	10 min. 68.8 MCFPD	
	15 min. 78.1 MCFPD	
Gauge:	10 min. 108.0 MCFPD	
	20 min. 94.5 MCFPD	
	30 min. 94.5 MCFPD	
	40 min. 94.5 MCFPD	
	50 min. 86.3 MCFPD	
	60 min. 86.3 MCFPD	
Recovered:		80' GCM (90%M,10%G)
Initial Flow Pressures:		96# to 86# / 15 min.
Initial Shut-In Pressure:		1175# / 60 min.
Final Flow Pressures:		75# to 53# / 60 min.
Final Shut-In Pressure:		1175# / 120 min.
Initial Hydrostatic Pressure:		2475#
Final Hydrostatic Pressure:		2401#
Bottomhole Temperature:		122 degrees

SL 4848-4890
EL 4840-4894

Chert, white to amber, fresh, partly tripolitic, fossiliferous. Fair to good spongy and fractured porosity. ***No free oil.*** **Spotted brown oil stain in tripolitic pieces and on fractured edges.** Good fluorescence, very slight odor. 10-unit kick on chromatograph. Hot wire not working. This zone appears to be a continuation of the zone above and is not recommended for any further testing.

Geological Formations and Porosity Zones (cont'd)

	Kinderhook	Sample	4904	-2675
		E-Log	4899	-2670

SL 4917-4927
EL 4912-4924

Sandstone, light grey, fine sub-round quartz grains, siliceous, hard. Fair intergranular porosity. No shows. No fluorescence. No odor. No kicks on hot wire or chromatograph.
Judged this zone to be of no commercial value.

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Rotary Total Depth	5000	-2771
Electric Log Depth	4995	-2766

ELI WIRELINE: Dual Induction, Comp Density/Comp Neutron - Gamma Ray Neutron Guard Log

4 1/2" production casing run and set at 4991' with 200 sacks.

Remarks and Recommendations

Due to the recovery and results of DST #1 in the Mississippian "Chat" section, recommend casing be run and set at 4991 feet to further test this section for commercial production.

Recommend the top 25 or 30 feet of the Mississippian be perforated and further tested. No other zones are recommended for further testing.

Respectfully submitted,

J.E. Jespersen