



OILFIELD RESEARCH LABORATORIES

536 NORTH HIGHLAND - CHANUTE, KANSAS 66720 - PHONE (316) 431-2650

September 8, 1982

Zoandra Petroleum, Inc.
8126 E. Long Place
Englewood, Colorado 80112

Gentlemen:

Attached hereto are the results of tests run on the rotary cores taken from the Harder Lease, Well No. Z-3, located in Section 22, T-25S, R-15E, in Woodson County, Kansas.

The cores were sampled and sealed in plastic bags by a representative of the client and were submitted to our laboratory on September 3, 1982.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Sanford A. Michel

SAM/rmc

4 c to Englewood, Colorado
1 c to Aurora, Colorado

- REGISTERED ENGINEERS -

CORE ANALYSIS - WATER ANALYSIS - REPRESSURING ENGINEERING - SURVEYING & MAPPING - PROPERTY EVALUATION & OPERATION

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LOGCompany Zoandra Petroleum, Inc. Lease Harder Well No. Z-3

<u>Depth Interval, Feet</u>	<u>Description</u>
	<u>UPPER SQUIRREL SANDSTONE</u>
1068.0 - 1068.5	Brown sandstone with scattered shale partings.
1068.5 - 1069.0	Brown sandstone.
1069.0 - 1070.8	Grayish brown slightly shaly sandstone.
1070.8 - 1071.5	Dark brown sandstone.
1071.5 - 1072.0	Gray slightly sandy shale.
1072.0 - 1073.5	Grayish brown very shaly sandstone with scattered shale partings.
1073.5 - 1073.7	Gray slightly sandy shale.
	<u>LOWER SQUIRREL SANDSTONE</u>
1111.0 - 1112.0	Alternate layers of gray shale and grayish brown shaly sandstone.
1112.0 - 1114.0	Grayish brown very shaly sandstone with scattered shale partings.
1114.0 - 1114.5	Alternate layers of gray shale and grayish brown shaly sandstone.
1114.5 - 1115.4	Gray shale with widely scattered brown sandstone partings.
1115.4 - 1116.4	Brown sandstone with scattered shale partings.
1116.4 - 1119.2	Dark brown sandstone.
1119.2 - 1121.0	Brownish black sandstone with widely scattered very fine shale and micaceous partings.
1121.0 - 1122.0	Grayish black very shaly sandstone with scattered fine shale and micaceous partings.

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1

Company Zoandra Petroleum, Inc. Lease Harder Well No. Z-3

Sample No.	Depth, Feet	Porosity Percent	Percent Saturation			Oil Content Bbls. / A Ft.	Perm., Mill.
			Oil	Water	Total		
<u>UPPER SQUIRREL SANDSTONE</u>							
1	1068.6	17.7	32	31	63	439	14.
2	1069.6	16.3	41	33	74	519	8.9
3	1070.6	16.5	50	28	78	640	8.7
4	1071.4	15.3	57	28	85	677	12.
5	1072.5	13.7	51	45	96	542	0.37
6	1073.4	15.0	35	60	95	407	0.73
<u>LOWER SQUIRREL SANDSTONE</u>							
7	1111.6	11.1	40	30	70	345	Imp.
8	1112.6	15.8	52	36	88	637	1.2
9	1113.6	15.4	59	35	94	705	0.75
10	1115.7	21.4	39	19	58	648	58.
11	1116.5	22.4	49	15	64	852	203.
12	1117.5	22.8	55	14	69	973	145.
13	1118.5	23.3	45	21	66	813	241.
14	1119.6	22.4	64	7	71	1112	24.
15	1120.5	25.5	74	10	84	1464	19.
16	1121.5	19.6	66	12	78	1004	0.52