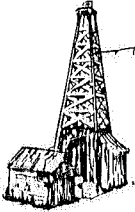


19-18s-42w



WHITEHALL EXPLORATION
CORPORATION

Wellsite Geological Consulting & Complete Well Logging

KCC
JUL 22 1994

GEOLOGICAL ANALYSIS & WELL REPORT

AXEM RESOURCES, INC.

Betty J No. 4-19

660' FNL & 660' FWL
Section 19-Township 18 South-Range 42 West
Greeley County, Kansas

API# 15-071-20621

March 16, 1994

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MAR 21 1994
CONSERVATION DIVISION
Wichita, Kansas

TABLE OF CONTENTS

General Information	1
Daily Drilling Chronology	2
Mud Properties	3
Bit Record	3
Reference Wells	4
Deviation Surveys	4
Drill Stem Tests	4
Formation Tops	5
Zones of Interest	5
Electric Logs-Morrow Section:	
Dual Induction-SFL	6
Comp. Neutron/Density	7
Summary	8

GENERAL INFORMATION

Elevation: K.B. 3,870' G.L. 3,862'
(All measurements are from K.B.)

Field: Wildcat

Contractor: Emphasis Oil Operations-Russell, KS

Rig: No. 10

Surface Casing: 8 5/8" set at 312.72'

Total Depth: 5,237' LTD 5,250' RTD

Drilling Time: 4,600' to 5,250' RTD

Samples Saved: 4,700' to 5,250' RTD

Samples Examined: 4,700' to 5,250' RTD

Wellsite Geologist: Peter J. Debenham
Wellsite Geological Consultant
Whitehall Exploration Corp.

Mudlogging Unit: None

Type Unit: None

Mudlogging Geologist: None

DST Company/Tester: None

Number of Tests: None

Mud up Depth/Displace: 4,000'

Mud Company/Engineer: Mud Co.-Service Mud/Tony Maestas

Mud Type: Chemical

Electric Logging Company: BPB Wireline Services

Type Logs: •Dual Induction Log (surf. csg.-5237')
•Neutron/Density (3200'-5237')
•Borehole Sonic (surf. csg.-5237')

Total Depth Formation: Mississippian

Samples: 1 dry cut sent to Kansas Geological
Survey-Wichita, KS

Well Status: Dry and Abandoned

DAILY DRILLING CHRONOLOGY

<u>1994</u> <u>DATE</u>	<u>7:00 A.M.</u> <u>DEPTH</u>	<u>24 HOUR</u> <u>FOOTAGE</u>	<u>7:00 A.M. OPERATION; 24 HOUR ACTIVITY</u>
3/2	0	0	MIRU; mix mud and drill rat hole, spud 12 1/4" hole @ 4:45 P.M., drilling, 1/2' rig repair, circ., drop dev. survey & trip out w/bit, run 7 jts 23# 8 5/8" surf. csg. tally 302.72', set @ 312.72' w/200 sx Allied cement, plug down @ 2:15 A.M., WOC.
3/3	317'	317'	Waiting on cement; drill out 38' cement and plug @ 10:15 A.M., drilling.
3/4	1,520'	1,203'	Drilling ahead; 1/2' rig repair, drilling, 1/2' rig repair, drilling, 1' rig repair, drilling, drop dev. survey & trip for bit @ 2705' strapping pipe.
3/5	2,459'	939'	Rig repair (1/2'); drilling, add flush, 1/4' rig repair, drilling, add flush, drilling.
3/6	3,124'	665'	Drilling ahead; circ. & trip out for plugged bit @ 3174', drilling.
3/7	3,530'	406'	Drilling ahead; displace mud system @ 4000', drilling.
3/8	4,050'	520'	Drilling ahead; 1/4' rig repair, drilling, clean pit 1/4', drilling.
3/9	4,474'	424'	Drilling ahead; start geological supervision @ 4700', drilling.
3/10	4,803'	329'	Drilling ahead; 1/4' rig repair, drilling, CFS @ 5071', drilling.
3/11	5,110'	307'	Drilling ahead; reach 5250' RTD @ 6:00 P.M., CFS 1', 20 stand short trip, circ. 1 1/2', drop dev. survey & trip out strapping pipe for e. logs, rig up & run e. logs.
3/12	5,250'	140'	Running e. logs; WO logger 3' for caliper tool malfunction, rig down e. logs, lay down drill collars, trip in hole, rig up cementers and plug & abandon well, lay down drill pipe, rig down.

MUD PROPERTIES

1994 DATE	DEPTH (FT)	TIME	WEIGHT (lbs)	VISCOSITY	FILTRATE	pH	YIELD POINT	CHLORIDES (p.p.m.)	LCM (lbs)
3-Mar	317	7:00 AM			N/C			300	
5-Mar	2,474	6:45 AM	9.8	30	N/C	7		126,000	TR
6-Mar	3,175	7:00 AM	9.7	31	N/C	7		75,000	TR
7-Mar	3,552	7:00 AM	9.7	32	N/C	7		57,000	TR
8-Mar	4,085	9:00 AM	8.6	41	12.8	11	16	4,500	1
9-Mar	4,492	7:00 AM	9	39	13.6	10	15	8,000	TR
10-Mar	4,832	8:00 AM	9.2	48	8.8	10	20	7,500	TR
11-Mar	5,126	7:00 AM	9.2	46	9.6	10	20	7,500	TR
12-Mar	5,250	6:30 AM	9.2	60	10.4	10	23	9,500	TR

N/C = No Control

TR = Trace

No significant lost circulation zones were encountered in this well.

BIT RECORD

NUMBER	SIZE	MAKE	TYPE	DEPTH OUT	FOOTAGE	HOURS RUN
1	12 1/4	HTC	TOOTH	317	317	3 3/4
2	7 7/8	HTC	ATJ 05	2,459	2,142	28 3/4
3	7 7/8	HTC	ATJ II C	5,250	2,791	132
TOTAL ROTATING HOURS						164 1/2

REFERENCE WELLS

Reference Well "A": MW Petroleum Corporation
Sell No. 13-31
330' FWL & 1,980' FSL
Section 13-T18S-R43W
Greeley County, Kansas
LTD: 5,296'
Elevation: 3,893' KB 3,882' GL
TD Formation: Mississippian
Status: Dry and Abandoned

Reference Well "B": Axem Resources, Inc.
Lawson No. 10-12
1,980' FEL & 1,750' FSL
Section 12-T18S-R43W
Greeley County, Kansas
LTD: 5,249'
Elevation: 3,866' KB 3,858' GL
TD Formation: Mississippian
Status: Dry and Abandoned

DEVIATION RECORD

<u>Survey</u> <u>Depth</u>	<u>Deviation</u> <u>(Degrees)</u>	<u>Method</u>
317'	3/4	Drop
2,459'	1	Drop
3,175	1	Drop
5,250' RTD	1 1/2	Drop

DRILL STEM TESTS

None

CORES

None

FORMATION TOPS

FORMATION	Betty J No. 4-19			Sell 13-31 REFERENCE WELL "A"	Lawson REFERENCE WELL "B"	DIFFERENCE TO REFERENCE WELL	
	SAMPLE TOPS	ELECTRIC LOG TOPS	DATUM			"A"	"B"
	**						
PERMIAN B / S.C. Anhydrite	2580	2573	1297	1291	1269	6	28
PENNSYLVANIAN							
Topeka	NC	3796	74	83	52	-9	22
Heebner Shale	NC	4045	-175	-165	-194	-10	19
Lansing	NC	4104	-234	-228	-258	-6	24
Marmaton	NC	4536	-666	-663	-684	-3	18
Cherokee Shale	4676	4664	-794	-809	-826	15	32
Atoka	4875	4863	-993	-1029	-1014	36	21
Morrow Shale	5009	5000	-1130	-1167	-1148	37	18
Morrow Sh-Lower Mo. Ls Isopach		101		132	98	-31	2
Stockholm Sand	Absent	Absent	Absent	Absent	Absent	NA	NA
Morrow Limestone	5112	5101	-1231	-1299	-1246	68	-15
MISSISSIPPIAN							
Mississippian	5202	5183	-1313	-1343	-1322	30	9

Note: LTD (5,237') is 13 feet higher than RTD (5,250').

** Geologic Supervision started at 4,700'

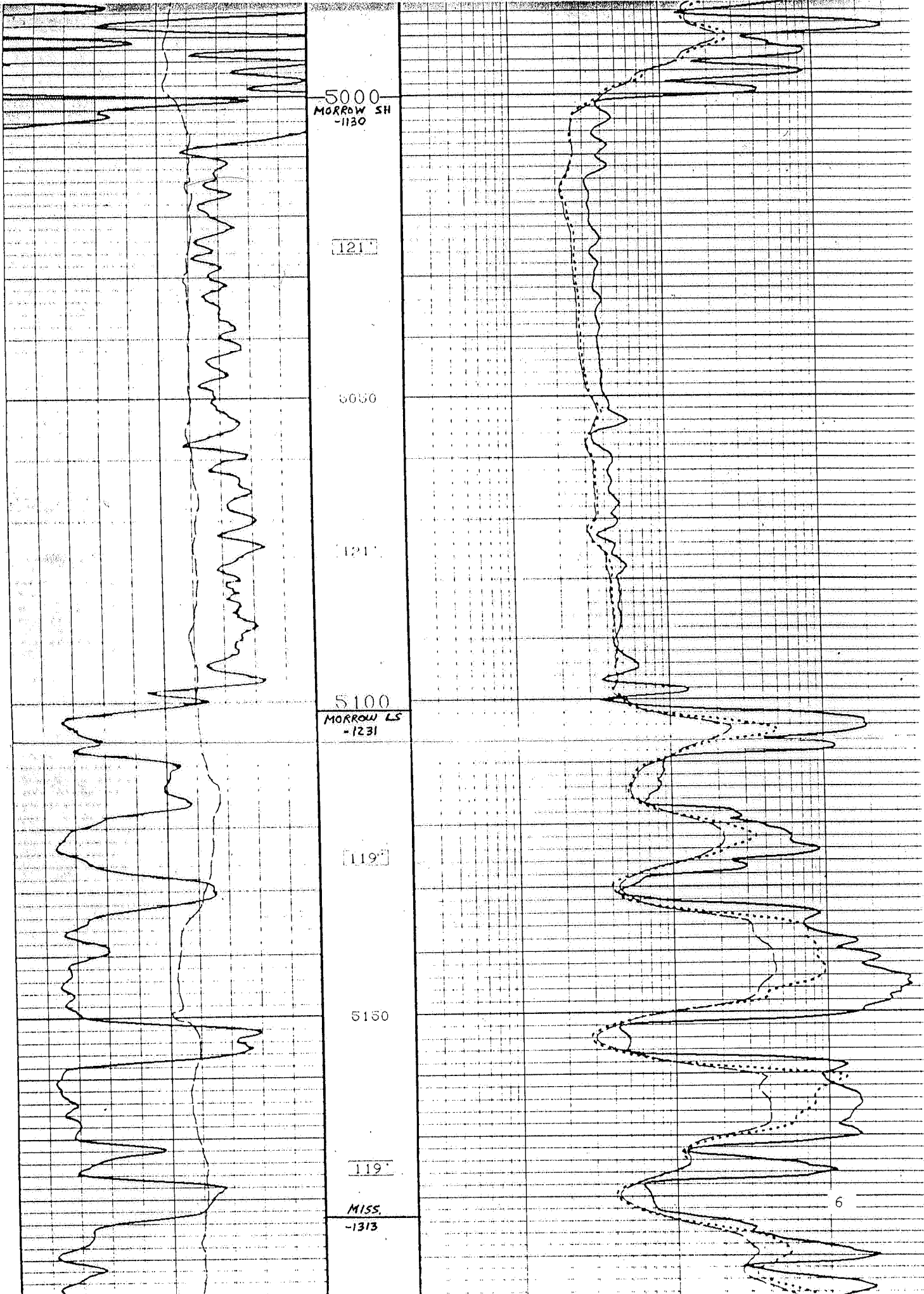
NC = Not Called-Prior to start of geological supervision.

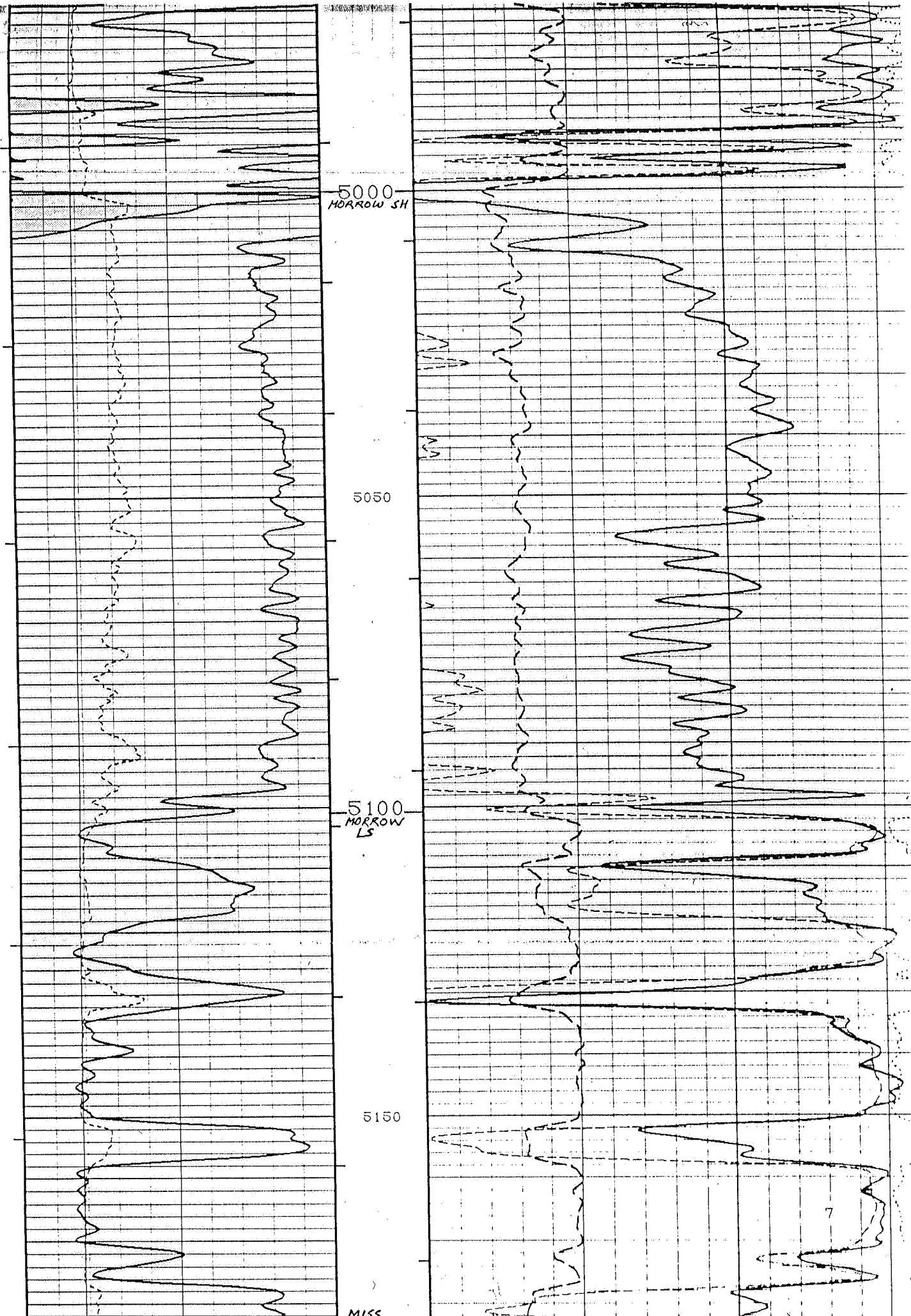
NDE=Not Deep Enough

NA = Not Available

ZONES OF INTEREST

<u>Formation</u>	<u>Log Depth</u>	<u>Lithologic & Show Descriptions, Remarks</u>
Upper Morrow Formation	5,000' -5,101'	No valley fill sequence or channel sandstone development are present in this well.





5000
MORROW SH

5050

5100
MORROW
LS

5150

MICC

7

WELL AND GEOLOGIC SUMMARY

General

The Betty J No. 4-19 was drilled as a wildcat on the Sunflower Prospect, and was drilled to test a potential basal Upper Morrow Formation valley fill channel system as interpreted through seismic control. The well's location is approximately 1 3/4 miles southeast of the Morrow Sandstone producing Moore-Johnson Field. The Betty J No. 4-19 is located slightly less than two (2) miles east of the Colorado/Kansas Stateline.

The primary objectives in this test were the basal Upper Morrow Formation Sandstone(s) informally known as the Stockholm Sandstone, which produces throughout the Moore-Johnson Field.

The Betty J No. 4-19 was spudded on March 2, 1994, and 5,250 feet RTD was reached on March 11, 1994 with no drilling problems encountered. The well was plugged and abandoned on March 12, 1994. No drill stem tests were performed in this well.

Ten (10) foot wet and dry drilling samples were caught by the drilling crews from 4,700-5,250 feet, with five (5) foot drilling samples caught over the Upper Morrow Formation. Lithologic descriptions were lagged by the consulting wellsite geologist. The Betty J No. 4-19 was under geologic supervision from 4,700-5,250 feet without gas detection equipment.

Reference Wells used for correlation and control for this report, are the:

Reference Well "A": MW Petroleum Corporation
 Sell No. 13-31
 330' FWL & 1,980' FSL
 Section 13-T18S-R43W
 Greeley County, Kansas
 LTD: 5,296'
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 Greeley County, Kansas
 LTD: 5,249'
 Elevation: 3,866' KB 3,858' GL
 TD Formation: Mississippian
 Status: Dry and Abandoned

Hydrocarbon Shows

No hydrocarbon shows were observed in the drilling samples in the portion of the well under geologic supervision (Cherokee through the Mississippian Formations).

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A trace of sand was observed in the drilling samples but no sandstone development is present in the Upper Morrow Formation.

Structure

The Betty J No. 4-19 ran structurally mixed compared to Reference Well "A" ranging from +6 feet at the Base/Stone Corral Anhydrite, structuraaly low from the Topeka through the Marmaton Formations (-3 to -10 feet), then structurally high from the Cherokee Shale through the Mississippian Formations (+15 to +68 feet).

Compared to Reference Well "B", the Betty J No. 4-19 ran structurally high throughout the well (+9 to +32 feet) with the exception of the Morrow Limestone which runs -15 feet low.

Compared to Reference Wells "A" and "B" respectively, the Betty J No. 4-19 is +37 feet and +18 feet at the Morrow Shale datum; +68 feet and -15 feet at the Lower Morrow Limestone datum; and +30 feet and +9 feet at the Mississippian datum.

The Betty J No. 4-19 has a 101 foot thick Morrow Shale to Lower Morrow Limestone Isopach interval compared to a 132 foot thick interval in Reference Well "A" and a 98 foot thick section in Reference Well "B".

Morrow Formation Stratigraphy

There is no evidence of any valley fill sequence present in the Betty J No. 4-19, and therefore, the primary objective Morrow Stockholm Sandstone, which produces hydrocarbons throughout the Moore-Johnson Field, is absent in the Betty J No. 4-19. No sand development exists within the Upper Morrow Formation.

Summary

Therefore, due to the lack of: any observed hydrocarbon shows in the portion of the well under geological supervision, any sand development in the primary objective Stockholm interval or in the Upper Morrow Formation samples, and the confirming electric logs showing the absence of any sandstone development within the Upper Morrow Formation, the Betty J No. 4-19 was plugged and abandoned as a dry hole.

Respectfully Submitted,

Peter J. Debenham
Richard J. Hall
Wellsite Geological Consultants
Whitehall Exploration Corp.