

TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name HAROLD LUNDGREN #1 Test No. 1 Date 11/14/93
Company RITCHIE EXPLORATION, INC. Zone LKC-"C"
Address 125 N MARKET SUITE 1000 WICHITA KS 67202 Elevation 2589
Co. Rep./Geo. KEVIN KESSLER Cont. WHITE & ELLIS RIG #9 Est. Ft. of Pay _____
Location: Sec. 4 Twp. 15S Rge. 29W Co. GOVE State KS

Interval Tested 3677-3707 Drill Pipe Size 4.5" XH
Anchor Length 30 Wt. Pipe I.D. - 2.7 Ft. Run _____
Top Packer Depth 3672 Drill Collar - 2.25 Ft. Run _____
Bottom Packer Depth 3677 Mud Wt. 9.2 lb/Gal.
Total Depth 3707 Viscosity 48 Filtrate 8.8

Tool Open @ 1:20 PM Initial Blow SURFACE BLOW SLOWLY BUILT TO 7"
ISI: BLED OFF BLOW - SURFACE RETURN BUILT TO 1"
Final Blow SURFACE BLOW BUILT TO 2"
FSI: BLED OFF BLOW - NO RETURN

Recovery - Total Feet 270 Flush Tool? NO

Rec. 30 Feet of DRILLING MUD
Rec. 240 Feet of SALT WATER
Rec. _____ Feet of _____
Rec. _____ Feet of _____
Rec. _____ Feet of _____

BHT 114 °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API
RW 0.12 @ _____ °F Chlorides 45000 ppm Recovery Chlorides 7000 ppm System

(A) Initial Hydrostatic Mud 1778.6 PSI AK1 Recorder No. 13339 Range 4025

(B) First Initial Flow Pressure 45.3 PSI @ (depth) 3697 w / Clock No. 19960

(C) First Final Flow Pressure 77.5 PSI AK1 Recorder No. 13276 Range 4000

(D) Initial Shut-in Pressure 156.4 PSI @ (depth) 3702 w / Clock No. 22992

(E) Second Initial Flow Pressure 148.6 PSI AK1 Recorder No. _____ Range _____

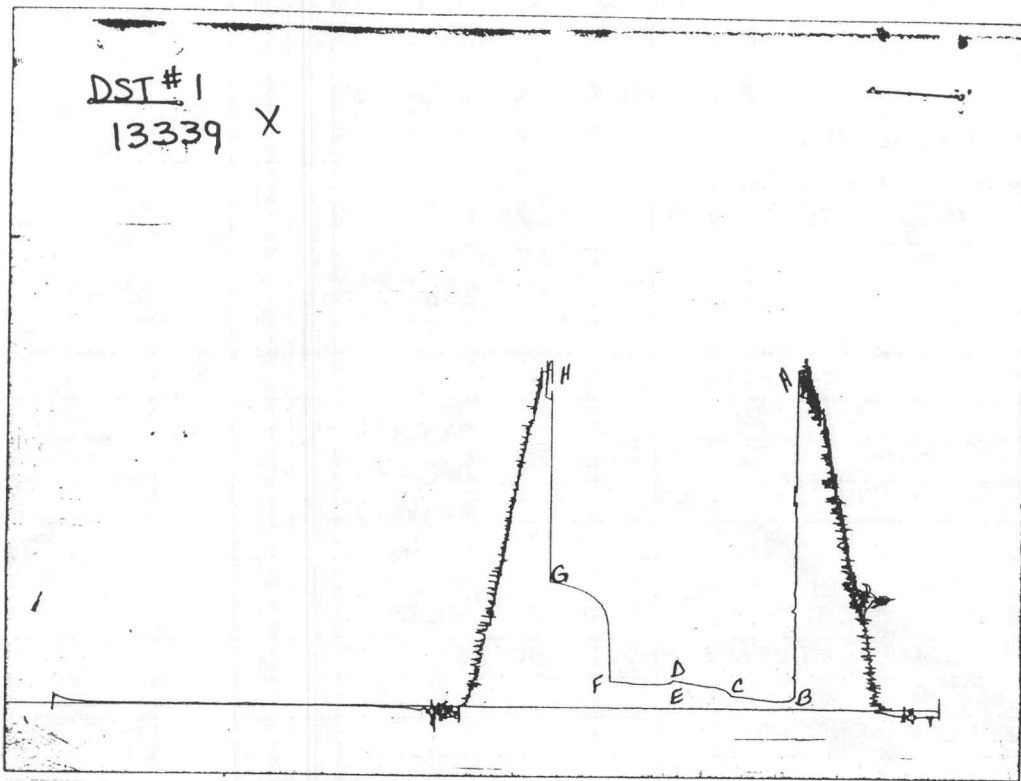
(F) Second Final Flow Pressure 164.2 PSI @ (depth) _____ w / Clock No. _____

(G) Final Shut-in Pressure 694.2 PSI Initial Opening 45 Final Flow 45

(H) Final Hydrostatic Mud 1755.3 PSI Initial Shut-in 45 Final Shut-in 45

Our Representative ROD STEINBRINK

CHART PAGE



This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	1772	1778.6
(B) FIRST INITIAL FLOW PRESSURE	41	45.3
(C) FIRST FINAL FLOW PRESSURE	72	77.5
(D) INITIAL CLOSED-IN PRESSURE	155	156.4
(E) SECOND INITIAL FLOW PRESSURE	145	148.6
(F) SECOND FINAL FLOW PRESSURE	155	164.2
(G) FINAL CLOSED-IN PRESSURE	689	694.2
(H) FINAL HYDROSTATIC MUD	1752	1755.3

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Drill-Stem Test Data

Well Name HAROLD LUNDGREN #1 Test No. 2 Date 11/15/93
Company RITCHIE EXPLORATION, INC. Zone LKC
Address 125 N MARKET SUITE 1000 WICHITA KS 67202 Elevation 2589
Co. Rep./Geo. KEVIN KESSLER Cont. WHITE & ELLIS RIG #9 Est. Ft. of Pay 4
Location: Sec. 4 Twp. 15S Rge. 29W Co. GOVE State KS

Interval Tested	<u>3830-3850</u>	Drill Pipe Size	<u>4.5" XH</u>
Anchor Length	<u>20</u>	Wt. Pipe I.D. - 2.7 Ft. Run	<u> </u>
Top Packer Depth	<u>3825</u>	Drill Collar - 2.25 Ft. Run	<u> </u>
Bottom Packer Depth	<u>3830</u>	Mud Wt.	<u>9.1</u> lb/Gal.
Total Depth	<u>3850</u>	Viscosity	<u>46</u> Filtrate <u>9</u>

Tool Open @ 11:22 AM Initial Blow WEAK SURFACE BLOW BUILT TO 1/2"

Final Blow SURGE AT OPEN-NO RETURN BLOW

Recovery - Total Feet 10 Flush Tool? NO

Rec. 10 Feet of DRILLING MUD
Rec. Feet of
Rec. Feet of
Rec. Feet of
Rec. Feet of

BHT 115 °F Gravity °API @ °F Corrected Gravity °API
RW @ °F Chlorides ppm Recovery Chlorides 5600 ppm System

(A) Initial Hydrostatic Mud 1906.4 PSI AK1 Recorder No. 13339 Range 4025

(B) First Initial Flow Pressure 55.3 PSI @ (depth) 3840 w / Clock No. 19960

(C) First Final Flow Pressure 54.2 PSI AK1 Recorder No. 13276 Range 4000

(D) Initial Shut-in Pressure 946.4 PSI @ (depth) 3845 w / Clock No. 22992

(E) Second Initial Flow Pressure 54.2 PSI AK1 Recorder No. Range

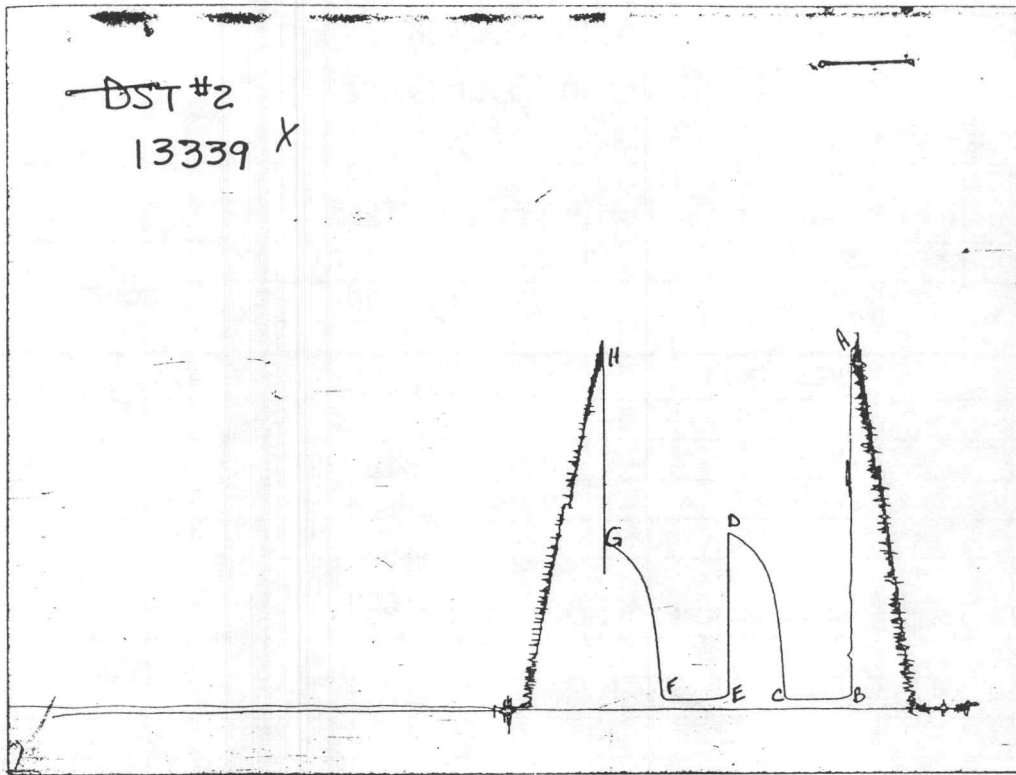
(F) Second Final Flow Pressure 54.2 PSI @ (depth) w / Clock No.

(G) Final Shut-in Pressure 897.5 PSI Initial Opening 45 Final Flow 45

(H) Final Hydrostatic Mud 1884.2 PSI Initial Shut-in 45 Final Shut-in 45

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CHART PAGE



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	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	1902	1906.4
(B) FIRST INITIAL FLOW PRESSURE	52	55.3
(C) FIRST FINAL FLOW PRESSURE	52	54.2
(D) INITIAL CLOSED-IN PRESSURE	939	946.4
(E) SECOND INITIAL FLOW PRESSURE	52	54.2
(F) SECOND FINAL FLOW PRESSURE	52	54.2
(G) FINAL CLOSED-IN PRESSURE	889	897.5
(H) FINAL HYDROSTATIC MUD	1882	1884.2

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Drill-Stem Test Data

Well Name HAROLD LUNDGREN #1 Test No. 3 Date 11/16/93
Company RITCHIE EXPLORATION, INC. Zone LKC-"I&J"
Address 125 N MARKET SUITE 1000 WICHITA KS 67202 Elevation 2589
Co. Rep./Geo. KEVIN KESSLER Cont. WHITE & ELLIS RIG #9 Est. Ft. of Pay _____
Location: Sec. 4 Twp. 15S Rge. 29W Co. GOVE State KS

Interval Tested 3846-3905 Drill Pipe Size 4.5" XH
Anchor Length 59 Wt. Pipe I.D. - 2.7 Ft. Run _____
Top Packer Depth 3841 Drill Collar - 2.25 Ft. Run _____
Bottom Packer Depth 3846 Mud Wt. 9.2 lb/Gal.
Total Depth 3905 Viscosity 46 Filtrate 9

Tool Open @ 3:00 AM Initial Blow SURFACE BLOW SLOWLY BUILT TO 2"
ISI: BLED OFF BLOW-NO RETURN
Final Blow NO RETURN - FLUSHED TOOL - 1/2" RETURN BLOW STAYED
STEADY THROUGHOUT/FSI: BLED OFF BLOW-NO RETURN

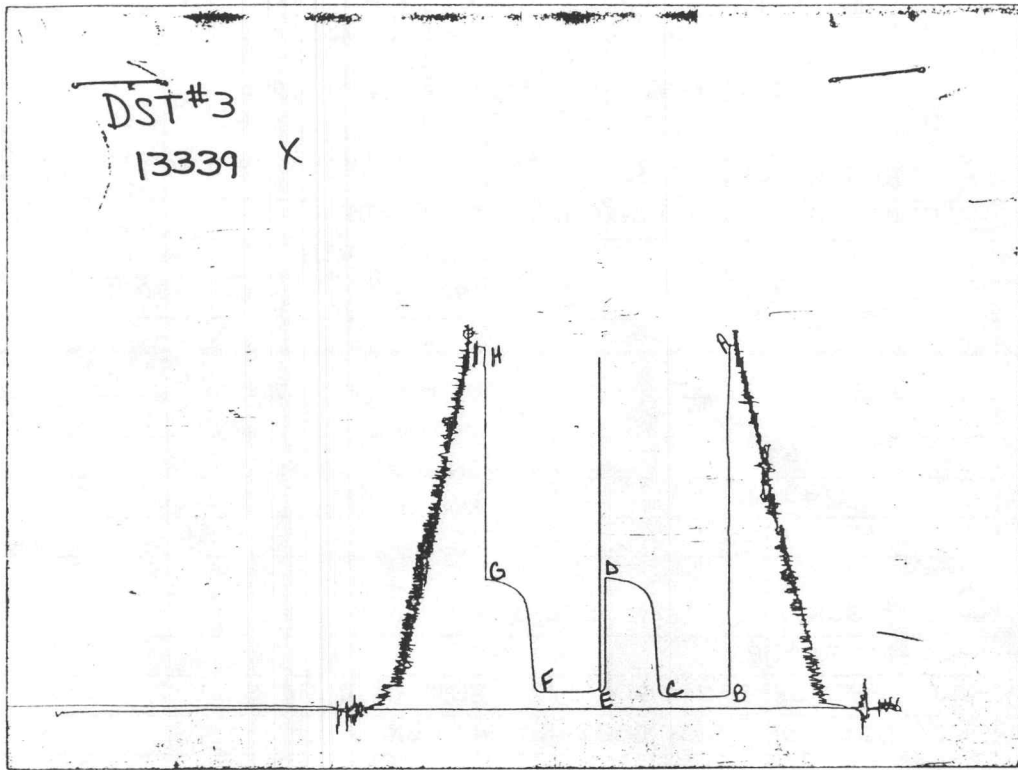
Recovery - Total Feet 80 Flush Tool? YES
Rec. 80 Feet of DRILLING MUD WITH OIL AT TOP
Rec. _____ Feet of _____
Rec. _____ Feet of _____
Rec. _____ Feet of _____
Rec. _____ Feet of _____

BHT 114 °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API
RW _____ @ _____ °F Chlorides _____ ppm Recovery Chlorides 5600 ppm System

(A) Initial Hydrostatic Mud 1933.1 PSI AK1 Recorder No. 13339 Range 4025
(B) First Initial Flow Pressure 56.4 PSI @ (depth) 3865 w / Clock No. 19960
(C) First Final Flow Pressure 56.4 PSI AK1 Recorder No. 13276 Range 4000
(D) Initial Shut-in Pressure 704.2 PSI @ (depth) 3900 w / Clock No. 22992
(E) Second Initial Flow Pressure 86.4 PSI AK1 Recorder No. _____ Range _____
(F) Second Final Flow Pressure 86.4 PSI @ (depth) _____ w / Clock No. _____
(G) Final Shut-in Pressure 694.2 PSI Initial Opening 45 Final Flow 45
(H) Final Hydrostatic Mud 1894.2 PSI Initial Shut-in 45 Final Shut-in 45

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CHART PAGE



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	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	1922	1933.1
(B) FIRST INITIAL FLOW PRESSURE	52	56.4
(C) FIRST FINAL FLOW PRESSURE	52	56.4
(D) INITIAL CLOSED-IN PRESSURE	699	704.2
(E) SECOND INITIAL FLOW PRESSURE	83	86.4
(F) SECOND FINAL FLOW PRESSURE	83	86.4
(G) FINAL CLOSED-IN PRESSURE	689	694.2
(H) FINAL HYDROSTATIC MUD	1892	1894.2

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Drill-Stem Test Data

Well Name HAROLD LUNDGREN #1 Test No. 4 Date 11/16/93
Company RITCHIE EXPLORATION, INC. Zone LKC-"K"
Address 125 N MARKET SUITE 1000 WICHITA KS 67202 Elevation 2589
Co. Rep./Geo. KEVIN KESSLER Cont. WHITE & ELLIS RIG #9 Est. Ft. of Pay 7
Location: Sec. 4 Twp. 15S Rge. 29W Co. GOVE State KS

Interval Tested 3905-3932 Drill Pipe Size 4.5" XH
Anchor Length 27 Wt. Pipe I.D. - 2.7 Ft. Run _____
Top Packer Depth 3900 Drill Collar - 2.25 Ft. Run _____
Bottom Packer Depth 3905 Mud Wt. 9.1 lb/Gal.
Total Depth 3932 Viscosity 43 Filtrate 9.4

Tool Open @ 4:00 PM Initial Blow WEAK 1/4" BLOW STEADY THROUGHOUT

Final Blow SURFACE RETURN DIED IN 15 MINUTES

Recovery - Total Feet 45 Flush Tool? NO

Rec. 45 Feet of OIL STAINED DRILLING MUD
Rec. _____ Feet of _____
Rec. _____ Feet of _____
Rec. _____ Feet of _____
Rec. _____ Feet of _____

BHT 115 °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API
RW _____ @ _____ °F Chlorides _____ ppm Recovery Chlorides 4200 ppm System

(A) Initial Hydrostatic Mud 1926.4 PSI AK1 Recorder No. 13339 Range 4000

(B) First Initial Flow Pressure 43.1 PSI @ (depth) 3922 w / Clock No. 19960

(C) First Final Flow Pressure 43.1 PSI AK1 Recorder No. 13276 Range 4025

(D) Initial Shut-in Pressure 376.4 PSI @ (depth) 3927 w / Clock No. 22992

(E) Second Initial Flow Pressure 66.4 PSI AK1 Recorder No. _____ Range _____

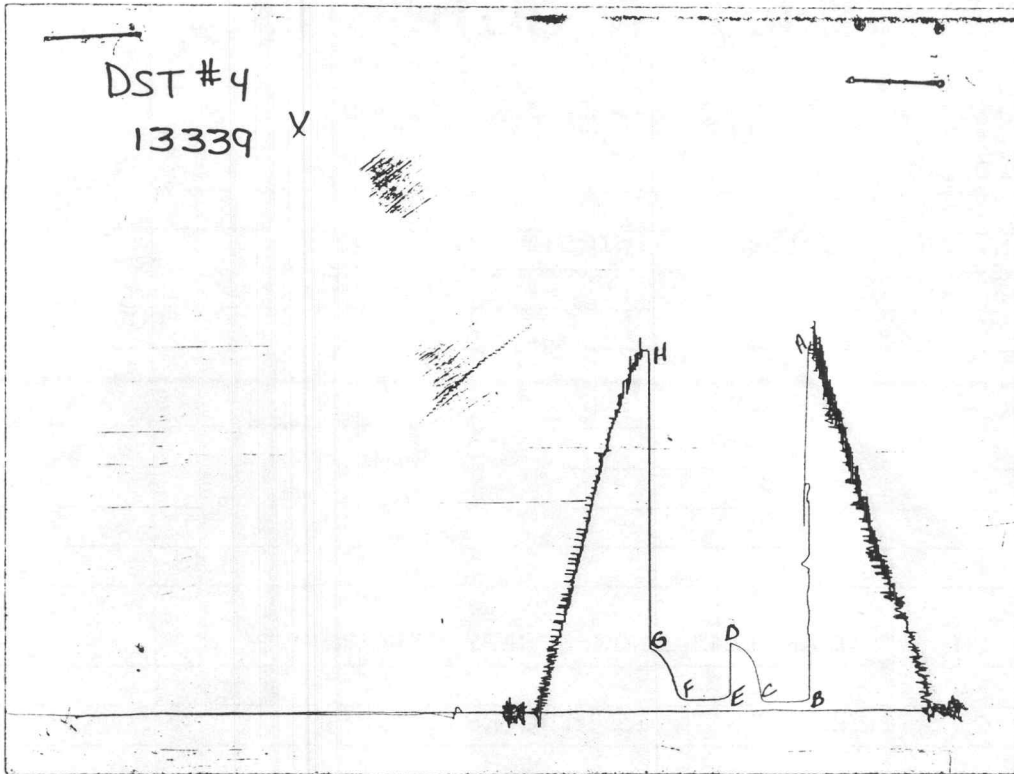
(F) Second Final Flow Pressure 66.4 PSI @ (depth) _____ w / Clock No. _____

(G) Final Shut-in Pressure 345.3 PSI Initial Opening 30 Final Flow 30

(H) Final Hydrostatic Mud 1905.3 PSI Initial Shut-in 30 Final Shut-in 30

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CHART PAGE



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	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	1922	1926.4
(B) FIRST INITIAL FLOW PRESSURE	41	43.1
(C) FIRST FINAL FLOW PRESSURE	41	43.1
(D) INITIAL CLOSED-IN PRESSURE	374	376.4
(E) SECOND INITIAL FLOW PRESSURE	62	66.4
(F) SECOND FINAL FLOW PRESSURE	62	66.4
(G) FINAL CLOSED-IN PRESSURE	343	345.3
(H) FINAL HYDROSTATIC MUD	1902	1905.3

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Drill-Stem Test Data

Well Name HAROLD LUNDGREN #1 Test No. 5 Date 11/18/93
Company RITCHIE EXPLORATION, INC. Zone PAWN/JOHNSON
Address 125 N MARKET SUITE 1000 WICHITA KS 67202 Elevation 2589
Co. Rep./Geo. KEVIN KESSLER Cont. WHITE & ELLIS RIG #9 Est. Ft. of Pay 9
Location: Sec. 4 Twp. 15S Rge. 29W Co. GOVE State KS

Interval Tested 4085-4250 Drill Pipe Size 4.5" XH
Anchor Length 165 Wt. Pipe I.D. - 2.7 Ft. Run _____
Top Packer Depth 4080 Drill Collar - 2.25 Ft. Run _____
Bottom Packer Depth 4085 Mud Wt. _____ 9.3 lb/Gal.
Total Depth 4250 Viscosity 45 Filtrate 9

Tool Open @ 9:05 AM Initial Blow SURFACE BLOW BUILT OFF BOTTOM IN 15 MINUTES
ISI: BLED OFF BLOW-SURFACE RETURN BUILT TO 1/4"
Final Blow WEAK TO FAIR BLOW OFF BOTTOM IN 15 MINUTES
FSI: BLED OFF BLOW-SURFACE RETURN BUILT TO 1/2"

Recovery - Total Feet 320/400' GIP Flush Tool? NO

Rec. <u>20</u>	Feet of	<u>OIL CUT MUD</u>
Rec. <u>60</u>	Feet of	<u>GSY OIL CUT MUD-15%GAS/10%OIL/ 75% MUD</u>
Rec. <u>60</u>	Feet of	<u>GSY OIL CUT MUD-20%GAS/15%OIL/65%MUD</u>
Rec. <u>60</u>	Feet of	<u>GSY OIL CUT MUD-50%GAS/20%OIL/30%MUD</u>
Rec. <u>60/60</u>	Feet of	<u>GSY OIL CUT MUD-25%/GAS/35%OIL/40%MUD</u>

BHT 115 °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API
RW _____ @ _____ °F Chlorides _____ ppm Recovery Chlorides 2400 ppm System

(A) Initial Hydrostatic Mud 2115.3 PSI AK1 Recorder No. 13339 Range 4025

(B) First Initial Flow Pressure 124.2 PSI @ (depth) 4120 w / Clock No. 19960

(C) First Final Flow Pressure 156.4 PSI AK1 Recorder No. 13276 Range 4000

(D) Initial Shut-in Pressure 1144.2 PSI @ (depth) 4245 w / Clock No. 22992

(E) Second Initial Flow Pressure 204.2 PSI AK1 Recorder No. _____ Range _____

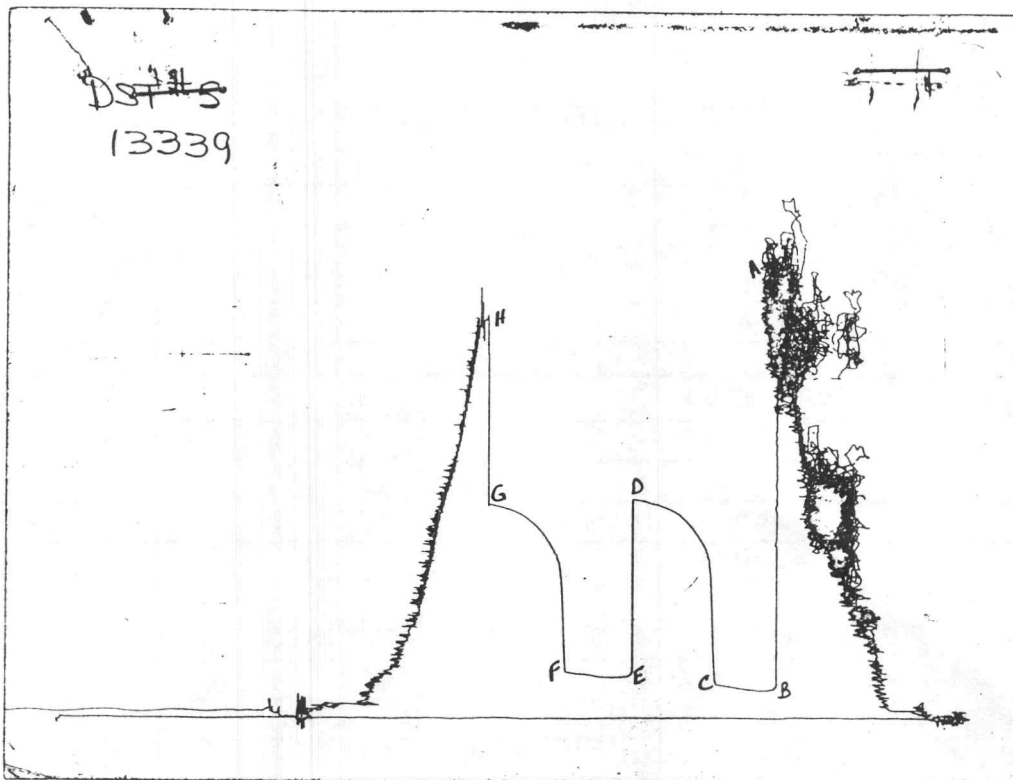
(F) Second Final Flow Pressure 234.2 PSI @ (depth) _____ w / Clock No. _____

(G) Final Shut-in Pressure 1125.3 PSI Initial Opening 45 Final Flow 45

(H) Final Hydrostatic Mud 2084.2 PSI Initial Shut-in 60 Final Shut-in 60

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CHART PAGE



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	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	2113	2115.3
(B) FIRST INITIAL FLOW PRESSURE	124	124.2
(C) FIRST FINAL FLOW PRESSURE	155	156.4
(D) INITIAL CLOSED-IN PRESSURE	1140	1144.2
(E) SECOND INITIAL FLOW PRESSURE	197	204.2
(F) SECOND FINAL FLOW PRESSURE	228	234.2
(G) FINAL CLOSED-IN PRESSURE	1120	1125.3
(H) FINAL HYDROSTATIC MUD	2083	2084.2

DST #		CALCULATED RECOVERY ANALYSIS				DRILL	PIPE	
5		TICKET				6801		
SAMPLE #	TOTAL FEET	GAS %	OIL FEET	OIL %	WATER FEET	WATER %	MUD FEET	MUD %
1	20	0	0	15	3	0	0	85
2	60	15	9	10	6	0	0	75
3	60	20	12	15	9	0	0	65
4	60	50	30	20	12	0	0	30
5	60	25	15	35	21	0	0	40
6	60	25	15	5	3	0	0	70
TOTAL	320	25.3125	81	16.9	54	0	0	57.8

			HRS	BBL/DAY
BBL OIL=	0.76788	*	1.5	12.286
BBL WATER=	0	*		0
BBL MUD=	2.6307			
BBL GAS	1.15182			

