TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name: HARKNESS-SHERWIN #1-19 Test No. 1 Date 7/21/92

Company: RANKEN ENERGY CORPORATION Zone N/A

Address: 2325 S.W. 15th ST EDMOND OK 73013-2024 Elevation 2592

Co. Rep./Geo.: DOUG BELLIS Cont. EMPHASIS RIG #7 Est. Ft. of Pay 4

Location: Sec. 9 Twp. 18S Rge. 26W Co. NESS State KS

Interval Tested: 4340-4349

Anchor Length: 9

Top Packer Depth: 4335

Bottom Packer Depth: 4340

Total Depth: 4349

Drill Pipe Size: 4.5" XH

Wt. Pipe I.D. - 2.7 Ft. Run:

Drill Collar – 2.25 Ft. Run:

Mud Wt.: 9.1 lb/Gal.

Viscosity: 48 Filtrate: 9.8

Tool Open @: 9:00 AM Initial Blow: VERY WEAK FOR 10 MINUTES

Final Blow: HOLE IN PIPE

Recovery - Total Feet: Flush Tool? NO

Rec. Feet of

Rec. Feet of

Rec. Feet of

Rec. Feet of

Rec. Feet of

BHT °F Gravity °API @ °F Corrected Gravity °API

RW @ °F Chlorides ppm Recovery Chlorides 1000 ppm System

(A) Initial Hydrostatic Mud PSI AK1 Recorder No. 13337 Range 3975

(B) First Initial Flow Pressure PSI @ (depth) 4345 w / Clock No. 31154

(C) First Final Flow Pressure PSI AK1 Recorder No. 10333 Range 4075

(D) Initial Shut-in Pressure 341.2 PSI @ (depth) 4349 w / Clock No. 30401

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

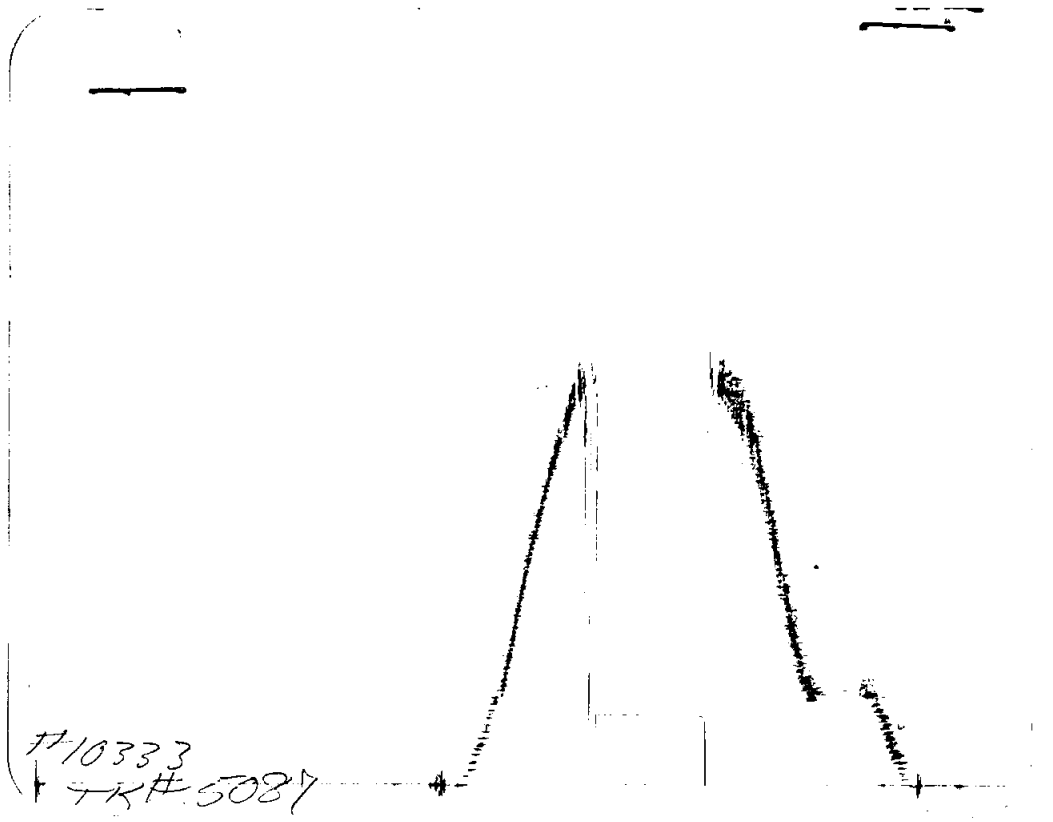
(F) Second Final Flow Pressure PSI @ (depth) w / Clock No.

(G) Final Shut-in Pressure PSI Initial Opening 15 Final Flow

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

Our Representative HARRY SCHMIDT

CHART PAGE



This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD		
(B) FIRST INITIAL FLOW PRESSURE		
(C) FIRST FINAL FLOW PRESSURE		
(D) INITIAL CLOSED-IN PRESSURE	340	341.2
(E) SECOND INITIAL FLOW PRESSURE		
(F) SECOND FINAL FLOW PRESSURE		
(G) FINAL CLOSED-IN PRESSURE		
(H) FINAL HYDROSTATIC MUD		

TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Test Ticket

№ 5087

Well Name & No. HARKNESS-SHERWIN 1-19 Test No. ONE Date 7-21-12

Company FRANKLIN ENERGY CORP. Zone Tested

Address 2325 S.W. 15TH ST. EDMOND OK 73013-2024 Elevation 2582 GL

Co. Rep./Geo. 9 Cont. EMPHASIS #7 Est. Ft. of Pay

Location: Sec. 9 Twp. 18 S Rge. 26 W Co. NESS State KS

No. of Copies 5 Distribution Sheet ____ Yes ____ No Turnkey ____ Yes ____ No ____ Evaluation

Interval Tested 4340 TO 4349 Drill Pipe Size 4½" XH

Anchor Length 9 Top Choke — 1" ____ Bottom Choke — ¾" ____

Top Packer Depth 4335 Hole Size — 7⅞" ____ Rubber Size — 6¾" ____

Bottom Packer Depth 4340 Wt. Pipe I.D. — 2.7 Ft. Run ____

Total Depth 4349 Drill Collar — 2.25 Ft. Run ____

Mud Wt. 9.1 lb / gal. Viscosity 48 Filtrate 9.8

Tool Open @ 9:00 A Initial Blow VERY WEAK SURF IN 10 MIN.

Final Blow ~~DIED 1 1/2~~ HOLE IN PIPE

Recovery — Total Feet ____ Feet of Gas in Pipe ____ Flush Tool? NO

Rec. ____ Feet Of		%gas	%oil	%water	%mud
Rec. ____ Feet Of		%gas	%oil	%water	%mud
Rec. ____ Feet Of		%gas	%oil	%water	%mud
Rec. ____ Feet Of		%gas	%oil	%water	%mud
Rec. ____ Feet Of		%gas	%oil	%water	%mud

BHT ____ °F Gravity ____ °API @ ____ °F Corrected Gravity ____ °API

RW ____ @ ____ °F Chlorides ____ ppm Recovery Chlorides 1000 ppm System

(A) Initial Hydrostatic Mud ____ PSI AK1 Recorder No. 13337 Range 3971

(B) First Initial Flow Pressure ____ PSI @ (depth) 4345 w/Clock No. 31154

(C) First Final Flow Pressure ____ PSI AK1 Recorder No. 10352 Range 4075

(D) Initial Shut-In Pressure 340 PSI @ (depth) 4349 w/Clock No. 30401

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

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

(G) Final Shut-In Pressure ____ PSI Initial Opening 15 Test ~~5.00~~

(H) Final Hydrostatic Mud ____ PSI Initial Shut-In 60 Jars MR 400.00

Final Flow ____ Safety Joint ____

Final Shut-In ____ Straddle ____

Circ. Sub ____

Sampler ____

Extra Packer ____

Other ____

TOTAL PRICE $ 400.00

TRILOBITE TESTING L.L.C. SHALL NOT BE LIABLE FOR DAMAGE OF ANY KIND OF THE PROPERTY OR PERSONNEL OF THE ONE FOR WHOM A TEST IS MADE, OR FOR ANY LOSS SUFFERED OR SUSTAINED, DIRECTLY OR INDIRECTLY, THROUGH THE USE OF ITS EQUIPMENT, OR ITS STATEMENTS OR OPINION CONCERNING THE RESULTS OF ANY TEST. TOOLS LOST OR DAMAGED IN THE HOLE SHALL BE PAID FOR AT COST BY THE PARTY FOR WHOM THE TEST IS MADE.

Approved By Doug Bellis

Our Representative ____

Printcraft Printers - Hays, KS

TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name HARKNESS-SHERWIN #1-19 Test No. 2 Date 7/21/92

Company RANKEN ENERGY CORPORATION Zone MARMATON

Address 2325 S.W. 15th ST EDMOND OK 73013-2024 Elevation 2592

Co. Rep./Geo. DOUG BELLIS Cont. EMPHASIS RIG #7 Est. Ft. of Pay 3

Location: Sec. 9 Twp. 18S Rge. 26W Co. NESS State KS

Interval Tested 4340-4349 Drill Pipe Size 4.5" XH

Anchor Length 9 Wt. Pipe I.D. - 2.7 Ft. Run

Top Packer Depth 4335 Drill Collar -- 2.25 Ft. Run

Bottom Packer Depth 4340 Mud Wt. 9.1 lb/Gal.

Total Depth 4349 Viscosity 48 Filtrate 9.8

Tool Open @ 2:00 PM Initial Blow VERY WEAK AND INTERMITTENT

Final Blow NO BLOW-PLUGGED TOOL

Recovery - Total Feet Flush Tool? YES

Rec. Feet of

Rec. Feet of

Rec. Feet of

Rec. Feet of

Rec. Feet of

BHT °F Gravity °API @ °F Corrected Gravity °API

RW @ °F Chlorides ppm Recovery Chlorides 1000 ppm System

(A) Initial Hydrostatic Mud PSI AK1 Recorder No. 13337 Range 3975

(B) First Initial Flow Pressure PSI @ (depth) 4345 w / Clock No. 31154

(C) First Final Flow Pressure PSI AK1 Recorder No. 10333 Range 4075

(D) Initial Shut-in Pressure PSI @ (depth) 4349 w / Clock No. 30401

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

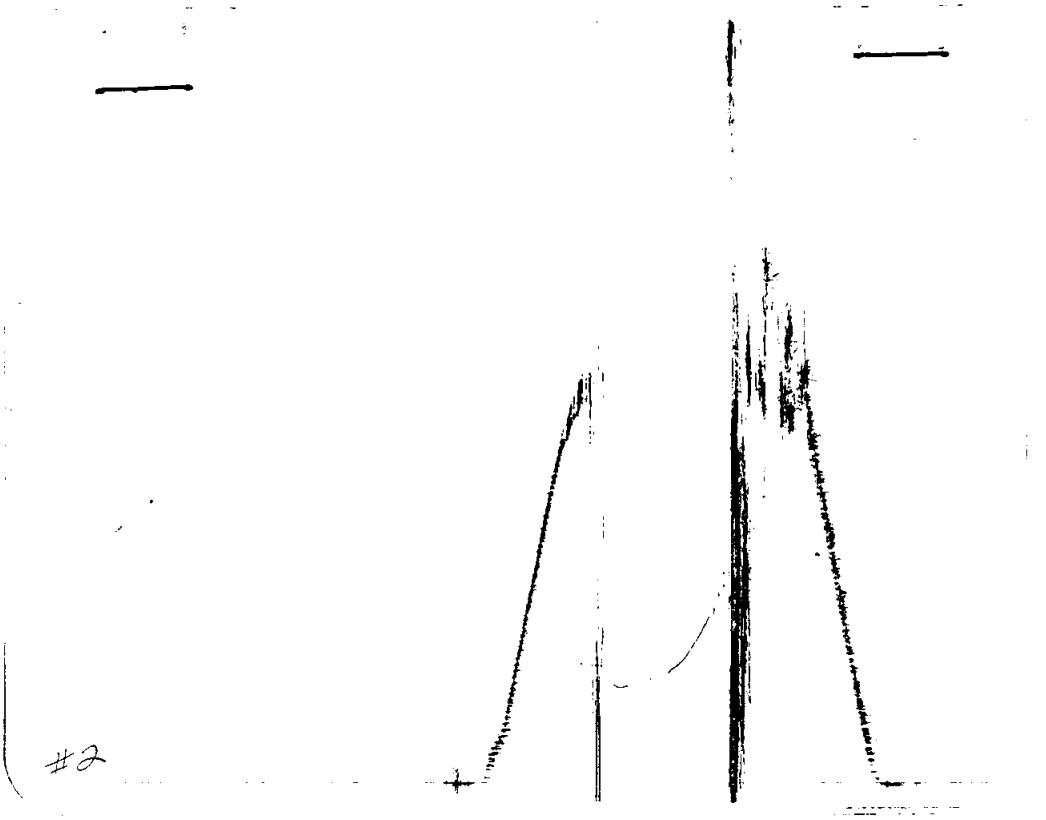
(F) Second Final Flow Pressure PSI @ (depth) w / Clock No.

(G) Final Shut-in Pressure PSI Initial Opening 30 Final Flow 10

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

Our Representative HARRY SCHMIDT

CHART PAGE



This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD		
(B) FIRST INITIAL FLOW PRESSURE		
(C) FIRST FINAL FLOW PRESSURE		
(D) INITIAL CLOSED-IN PRESSURE		
(E) SECOND INITIAL FLOW PRESSURE		
(F) SECOND FINAL FLOW PRESSURE		
(G) FINAL CLOSED-IN PRESSURE		
(H) FINAL HYDROSTATIC MUD		

TRILOBITE TESTING L.L.C.
P.O. Box 362 • Hays, Kansas 67601

Test Ticket

№ 5088

Well Name & No. HARKNESS-SMERWIN 1-19 Test No. ~~ONE~~ 2 Date 7-21-92

Company NANKEN ENERGY CORP. Zone Tested MARMATON

Address 2325 S.W. 15TH ST. EDMOND OK. 73013-2024 Elevation 2582 GL

Co. Rep./Geo. DOUG BELLIS Cont. EMPHASIS #7 Est. Ft. of Pay 3

Location: Sec. 9 Twp. 18 S Rge. 26 W Co. NESS State KS.

No. of Copies _____ Distribution Sheet _____ Yes _____ No Turnkey _____ Yes _____ No _____ Evaluation

Interval Tested 4340 TO 4349 Drill Pipe Size 4 1/2" X 14

Anchor Length 9' Top Choke — 1" _____ Bottom Choke — ¾" _____

Top Packer Depth 4335 Hole Size — 7 7/8" _____ Rubber Size — 6 3/4" _____

Bottom Packer Depth 4340 Wt. Pipe I.D. — 2.7 Ft. Run _____

Total Depth 4349 Drill Collar — 2.25 Ft. Run _____

Mud Wt. 9.1 lb / gal. Viscosity 48 Filtrate 9.8

Tool Open @ 2:00 P Initial Blow VERY WEAK & INTERMITENT

Final Blow NO BLOW PLUGED TOOL

Recovery — Total Feet _____ Feet of Gas in Pipe _____ Flush Tool? YES

Rec. _____	Feet Of	%gas	%oil	%water	%mud
Rec. _____	Feet Of	%gas	%oil	%water	%mud
Rec. _____	Feet Of	%gas	%oil	%water	%mud
Rec. _____	Feet Of	%gas	%oil	%water	%mud
Rec. _____	Feet Of	%gas	%oil	%water	%mud

BHT _____ °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API

RW _____ @ _____ °F Chlorides _____ ppm Recovery Chlorides 4000 ppm System

(A) Initial Hydrostatic Mud _____ PSI AK1 Recorder No. 13337 Range 3975

(B) First Initial Flow Pressure _____ PSI @ (depth) 4345 w/Clock No. 31154

(C) First Final Flow Pressure _____ PSI AK1 Recorder No. 10333 Range 4075

(D) Initial Shut-In Pressure _____ PSI @ (depth) 4349 w/Clock No. 30401

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

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

(G) Final Shut-In Pressure _____ PSI Initial Opening 30 Test ~~1000~~

(H) Final Hydrostatic Mud _____ PSI Initial Shut-In 60 Jars MP 4000

Final Flow 10 Safety Joint

Final Shut-In — Straddle _____

Circ. Sub _____

Sampler _____

Extra Packer 400

Other _____

TOTAL PRICE $ ~~1000~~

TRILOBITE TESTING L.L.C. SHALL NOT BE LIABLE FOR DAMAGE OF ANY KIND OF THE PROPERTY OR PERSONNEL OF THE ONE FOR WHOM A TEST IS MADE, OR FOR ANY LOSS SUFFERED OR SUSTAINED, DIRECTLY OR INDIRECTLY, THROUGH THE USE OF ITS EQUIPMENT, OR ITS STATEMENTS OR OPINION CONCERNING THE RESULTS OF ANY TEST. TOOLS LOST OR DAMAGED IN THE HOLE SHALL BE PAID FOR AT COST BY THE PARTY FOR WHOM THE TEST IS MADE.

Approved By Doug Bellis

Our Representative _____

Printcraft Printers - Hays, KS

TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name HARKNESS-SHERWIN #1-19 Test No. 3 Date 7/22/92

Company RANKEN ENERGY CORPORATION Zone MARMATON

Address 2325 S.W. 15th ST EDMOND OK 73013-2024 Elevation 2592

Co. Rep./Geo. DOUG BELLIS Cont. EMPHASIS RIG #7 Est. Ft. of Pay 3

Location: Sec. 9 Twp. 18S Rge. 26W Co. NESS State KS

Interval Tested 4340-4349 Drill Pipe Size 4.5" XH

Anchor Length 9 Wt. Pipe I.D. - 2.7 Ft. Run

Top Packer Depth 4335 Drill Collar – 2.25 Ft. Run

Bottom Packer Depth 4340 Mud Wt. 9.1 lb/Gal.

Total Depth 4349 Viscosity 48 Filtrate 9.8

Tool Open @ 12:20 AM Initial Blow WEAK TO FAIR BLOW 7" IN 30 MINUTES

Final Blow SAME AS INITIAL

Recovery - Total Feet 200 Flush Tool? NO

Rec. 200 Feet of WATER

Rec. Feet of

Rec. Feet of

Rec. Feet of

Rec. Feet of

BHT N/A °F Gravity °API @ °F Corrected Gravity °API

RW 0.13 @ 70 °F Chlorides 53000 ppm Recovery Chlorides 1000 ppm System

(A) Initial Hydrostatic Mud 2137.8 PSI AK1 Recorder No. 13337 Range 3975

(B) First Initial Flow Pressure 21.2 PSI @ (depth) 4345 w / Clock No. 31154

(C) First Final Flow Pressure 40.5 PSI AK1 Recorder No. 10333 Range 4075

(D) Initial Shut-in Pressure 360.8 PSI @ (depth) 4349 w / Clock No. 30401

(E) Second Initial Flow Pressure 39.4 PSI AK1 Recorder No. Range

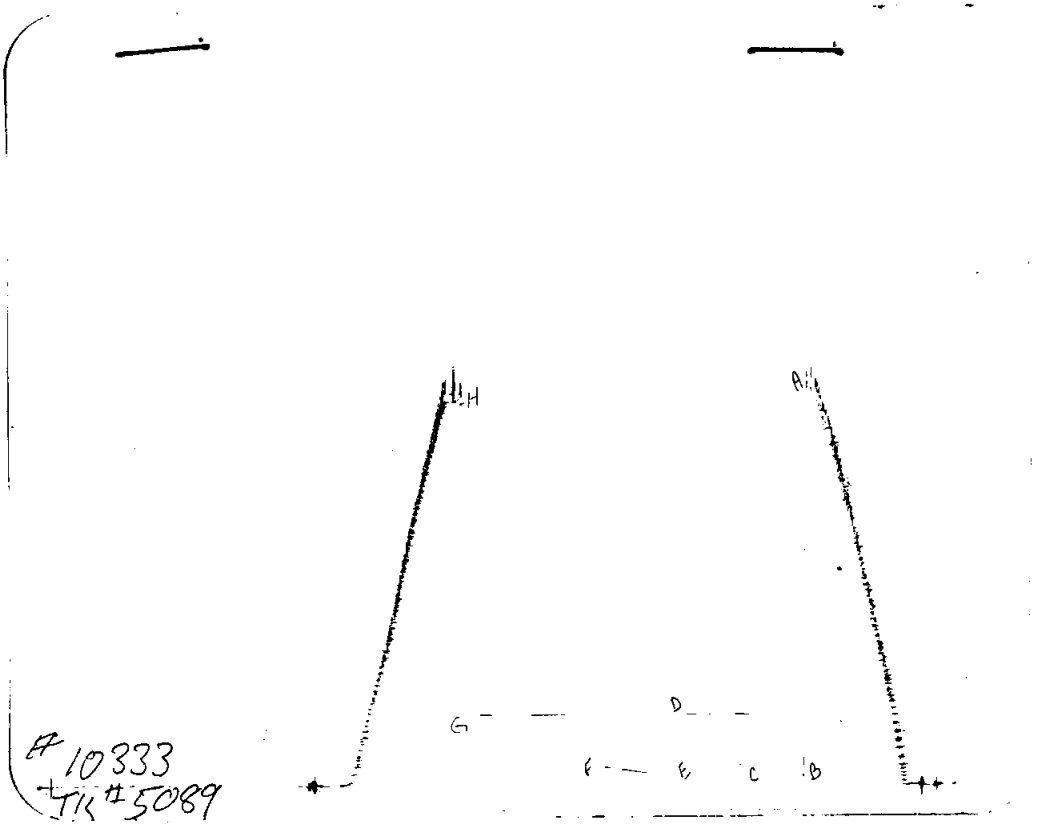
(F) Second Final Flow Pressure 101.2 PSI @ (depth) w / Clock No.

(G) Final Shut-in Pressure 359.7 PSI Initial Opening 30 Final Flow 60

(H) Final Hydrostatic Mud 2130.6 PSI Initial Shut-in 60 Final Shut-in 90

Our Representative HARRY SCHMIDT

CHART PAGE



This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	2140	2137.8
(B) FIRST INITIAL FLOW PRESSURE	19	21.2
(C) FIRST FINAL FLOW PRESSURE	39	40.5
(D) INITIAL CLOSED-IN PRESSURE	357	360.8
(E) SECOND INITIAL FLOW PRESSURE	39	39.4
(F) SECOND FINAL FLOW PRESSURE	98	101.2
(G) FINAL CLOSED-IN PRESSURE	357	359.7
(H) FINAL HYDROSTATIC MUD	2140	2130.6

TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Test Ticket

No. 5089

Well Name & No. HARKNESS-SITERWIN 1-19 Test No. THREE Date 7-22-92

Company RANKEN ENERGY CORP. Zone Tested MARMATON

Address 2325 S.W. 15TH ST. EDMOND OK 73013-2024 Elevation 2582 GL

Co. Rep./Geo. DOUG BELLIS Cont. EMPHASIS 7 Est. Ft. of Pay 3

Location: Sec. 9 Twp. 18S Rge. 26W Co. NESS State KS.

No. of Copies STANDARD Distribution Sheet ____ Yes (No) Turnkey ____ Yes (No) Evaluation

Interval Tested 4340 TO 4349 Drill Pipe Size 4 1/2" XH

Anchor Length 9' Top Choke — 1" ____ Bottom Choke — ¾" ____

Top Packer Depth 4335 Hole Size — 7 7/8" ____ Rubber Size — 6 3/4" ____

Bottom Packer Depth 4340 Wt. Pipe I.D. — 2.7 Ft. Run ____

Total Depth 4349 Drill Collar — 2.25 Ft. Run ____

Mud Wt. 9.1 lb/gal. Viscosity 48 Filtrate 9.8

Tool Open @ 12:20 A Initial Blow WEAK TO FAIR BLOW 7" IN 30 MIN.

Final Blow SAME AS INITIAL

Recovery — Total Feet 200 Feet of Gas in Pipe ____ Flush Tool? NO

Rec. 200	Feet Of WATER	%gas	%oil	%water	%mud
Rec. ____	Feet Of ____	%gas	%oil	%water	%mud
Rec. ____	Feet Of ____	%gas	%oil	%water	%mud
Rec. ____	Feet Of ____	%gas	%oil	%water	%mud
Rec. ____	Feet Of ____	%gas	%oil	%water	%mud

BHT ____ °F Gravity ____ °API @ ____ °F Corrected Gravity ____ °API

RW 0.13 @ 70 °F Chlorides 53,000 ppm Recovery Chlorides 1000 ppm System

(A) Initial Hydrostatic Mud	2140 PSI	AK1 Recorder No.	13337	Range	3975
(B) First Initial Flow Pressure	19 PSI	@ (depth)	4345	w/Clock No.	31354
(C) First Final Flow Pressure	39 PSI	AK1 Recorder No.	10333	Range	4075
(D) Initial Shut-In Pressure	357 PSI	@ (depth)	4349	w/Clock No.	30401
(E) Second Initial Flow Pressure	39 PSI	AK1 Recorder No.	____	Range	____
(F) Second Final Flow Pressure	98 PSI	@ (depth)	____	w/Clock No.	____
(G) Final Shut-In Pressure	357 PSI	Initial Opening	30	Test	550.00
(H) Final Hydrostatic Mud	2140 PSI	Initial Shut-In	60	Jars	____
		Final Flow	60	Safety Joint	____
		Final Shut-In	90	Straddle	____
				Circ. Sub	____
				Sampler	____
				Extra Packer	____
				Other	____
				TOTAL PRICE $	550.00

Approved By Doug Bellis

Our Representative [signature]

Printcraft Printers - Hays, KS

TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name HARKNESS-SHERWIN #1-19 Test No. 4 Date 7/23/92

Company RANKEN ENERGY CORPORATION Zone MISSISSIPPI

Address 2325 S.W. 15th ST EDMOND OK 73013-2024 Elevation 2592

Co. Rep./Geo. DOUG BELLIS Cont. EMPHASIS RIG #7 Est. Ft. of Pay 4

Location: Sec. 9 Twp. 18S Rge. 26W Co. NESS State KS

Interval Tested 4526-4550 Drill Pipe Size 4.5" XH

Anchor Length 24 Wt. Pipe I.D. - 2.7 Ft. Run

Top Packer Depth 4521 Drill Collar – 2.25 Ft. Run

Bottom Packer Depth 4526 Mud Wt. 9.2 lb/Gal.

Total Depth 4550 Viscosity 48 Filtrate 9.8

Tool Open @ 3:45 AM Initial Blow WEAK TO FAIR 7" IN 30 MINUTES

Final Blow FAIR THROUGHOUT - BOTTOM OF BUCKET IN 30 MINUTES

Recovery - Total Feet 210 Flush Tool? NO

Rec. 180 Feet of GAS IN PIPE

Rec. 30 Feet of OIL

Rec. 60 Feet of GAS & OIL CUT MUD-25%GAS/50%OIL/25%MUD

Rec. 60 Feet of GAS & OIL CUT MUD-25%GAS/35%OIL/40%MUD

Rec. Feet of

BHT 120 °F Gravity 40 °API @ 80 °F Corrected Gravity 38 °API

RW @ °F Chlorides ppm Recovery Chlorides 1000 ppm System

(A) Initial Hydrostatic Mud 2271.3 PSI AK1 Recorder No. 13337 Range 3975

(B) First Initial Flow Pressure 27.6 PSI @ (depth) 4531 w / Clock No. 31154

(C) First Final Flow Pressure 32.5 PSI AK1 Recorder No. 10333 Range 4075

(D) Initial Shut-in Pressure 1071.8 PSI @ (depth) 4550 w / Clock No. 30401

(E) Second Initial Flow Pressure 53.3 PSI AK1 Recorder No. Range

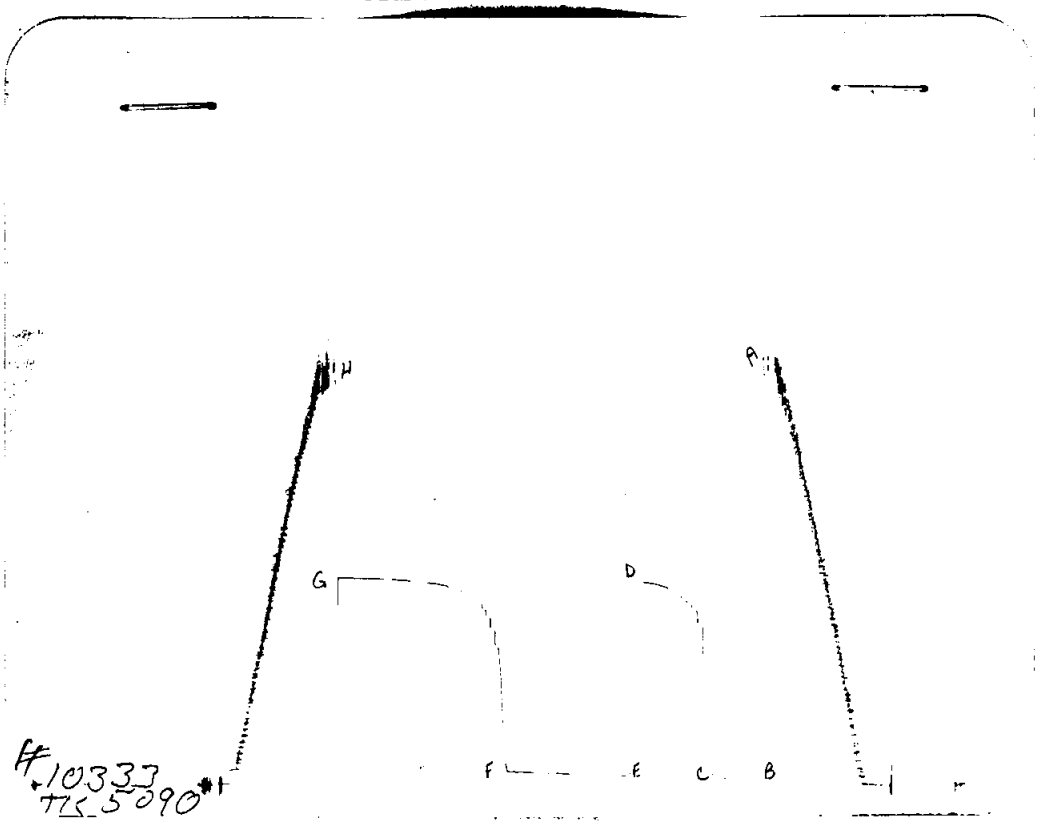
(F) Second Final Flow Pressure 71.1 PSI @ (depth) w / Clock No.

(G) Final Shut-in Pressure 1089.7 PSI Initial Opening 30 Final Flow 90

(H) Final Hydrostatic Mud 2260.3 PSI Initial Shut-in 60 Final Shut-in 120

Our Representative HARRY SCHMIDT

CHART PAGE



This is an actual photograph of recorder chart

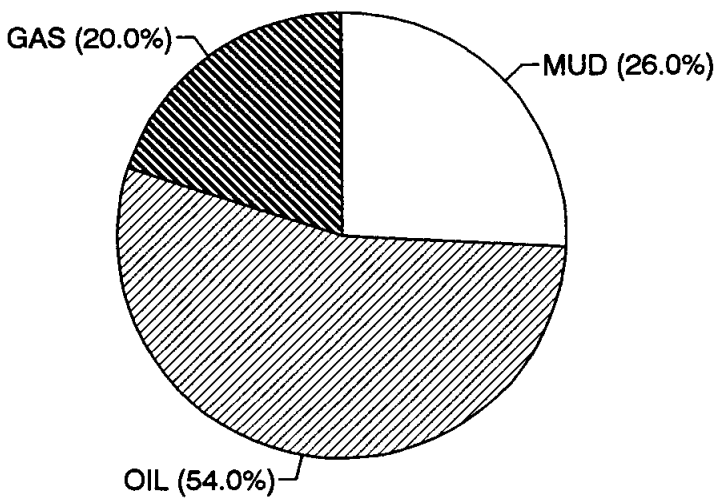
	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	2268	2271.3
(B) FIRST INITIAL FLOW PRESSURE	19	27.6
(C) FIRST FINAL FLOW PRESSURE	29	32.5
(D) INITIAL CLOSED-IN PRESSURE	1074	1071.8
(E) SECOND INITIAL FLOW PRESSURE	39	53.3
(F) SECOND FINAL FLOW PRESSURE	79	71.1
(G) FINAL CLOSED-IN PRESSURE	1084	1089.7
(H) FINAL HYDROSTATIC MUD	2268	2260.3

CALCULATED RECOVERY ANALYSIS DRILL PIPE

DST # 4 TICKET 5090

SAMPLE	TOTAL	GAS	OIL			WATER		MUD	
#	FEET	%	FEET	%	FEET	%	FEET	%	FEET
1	30	0	0	100	30	0	0	0	0
2	60	25	15	50	30	0	0	25	15
3	60	25	15	35	21	0	0	40	24
4			0		0		0		0
5			0		0		0		0
TOTAL	150	20	30	54	81	0	0	26	39

			HRS	BBL/DAY
BBL OIL=	1.15182	*	1.5	18.429
BBL WATER=	0	*		0
BBL MUD=	0.55458			
BBL GAS	0.4266			



COMPUTER EVALUATION BY TRILOBITE TESTING, L.L.C.

RANKEN ENERGY CORPO HARKNESS-SHERWIN #1- DST 4

9 18S 26W NESS KS

****

ELEVATION:	2592	KB	EST. PAY	4	FT
DATUM:	-4532		ZONE TESTED:	MISSISSIPPI	
TEST INTERVAL:	4526-4550		TIME INTERVALS:	30-60-90-120	
RECORDER DEPTH:	4531		VISCOSITY:	5.332	CP
BOTTOM HOLE TEMP:	120		HOLE SIZE:	7.875	IN

****

CUBIC FEET OF GAS IN PIPE:	14.37			
TOTAL FEET OF RECOVERY:	210.00	CORRECTED PIPE FILLUP:	196.409	
TOTAL BARRELS OF RECOVERY:	2.99	CORR. BARRELS OF RECOVERY:	2.787	BBL
BARRELS IN DRILL PIPE:	2.99	API GRAVITY:	38	
BARRELS IN WEIGHT PIPE:	0.00	FLUID GRADIENT:	0.362	
BARRELS IN DRILL COLLARS:	0.00			
GAS OIL RATIO:	4.8125	CU.FT/BBL		
BUBBLE POINT PRESSURE:	43.030			
UNCORRECTED INITIAL PRODUCTION:			35.83	BBL
INITIAL PRODUCTION CORRECTED TO FINAL FLOW PRESSURE:			33.45	BBL/DAY
INITIAL PRODUCTION CORRECTED TO PSEUDO STEADY FLOW STATE:			30.593	

****

INITIAL SLOPE	408.12	PSI/CYCLE	FINAL SLOPE	118.00	PSI/CYCLE
INITIAL P*	1138	PSI	FINAL P*	1125	PSI

****

TRANSMISSIBILITY	46.09	(MD.-FT./CP.)
PERMEABILITY	61.44	(MD.)
INDICATED FLOW CAPACITY	245.74	)MD.FT)
PRODUCTIVITY INDEX	0.05	(BARRELS/DAY/PSI)
DAMAGE RATIO	1.63	
RADIUS OF INVESTIGATION	85.86	(FT,)
POTENTIOMETRIC SURFACE	-1921.61	(FT.)
DRAWDOWN FACTOR	1.141	(%)

INITIAL FLOW

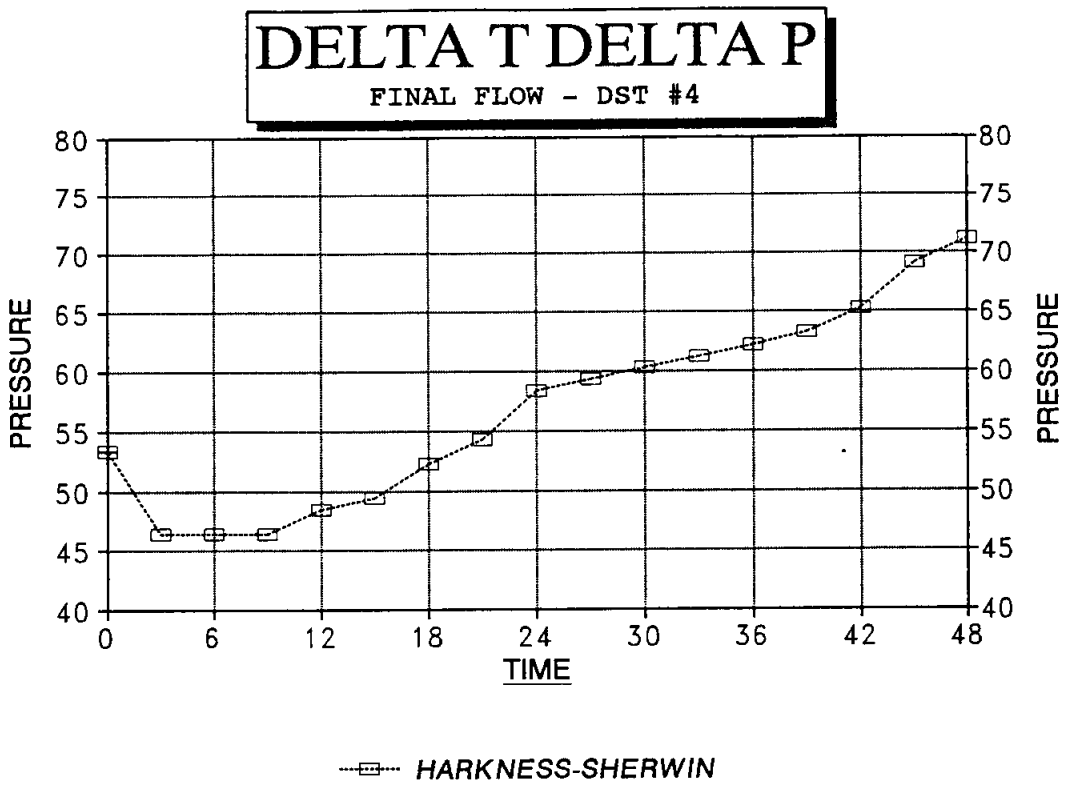
RECORDER # 13337 DST # 4

TIME(MIN)	PRESSURE	<>PRESSURE
0	27.6	27.6
3	28.6	1
6	29.6	1
9	29.6	0
12	29.6	0
15	29.6	0
18	29.6	0
21	29.6	0
24	30.5	0.9
27	30.5	0
30	31.5	1
33	32.5	1

FINAL FLOW

RECORDER # 13337 DST # 4

TIME(MIN)	PRESSURE	<> PRESSURE
0	53.3	53.3
3	46.4	-6.9
6	46.4	0
9	46.4	0
12	48.4	2
15	49.4	1
18	52.3	2.9
21	54.3	2
24	58.3	4
27	59.3	1
30	60.2	0.9
33	61.2	1
36	62.2	1
39	63.2	1
42	65.2	2
45	69.1	3.9



INITIAL PRODUCTION CORRECTED TO PSEUDO STEADY FLOW STATE: 30.593

HARKNESS-SHERWIN DST #4
INITIAL SHUTIN

30 TOTAL FLOW TIME

Slope 408.12 psi/cycle
P * 1138 psi

	TIME(MIN)	Pws (psi)	Log Horn T	<> PRESSURE	Horn T
	6	90.9	0.778	90.9	6
	12	802.5	0.544	711.6	4
	18	922.3	0.426	119.8	3
	24	968.5	0.352	46.2	2
	30	1001.2	0.301	32.7	2
	36	1025.0	0.263	23.8	2
	42	1040.9	0.234	15.9	2
	48	1050.9	0.211	10.0	2
X	54	1059.9	0.192	9.0	2
	60	1066.8	0.176	6.9	2
X	66	1071.8	0.163	5.0	1

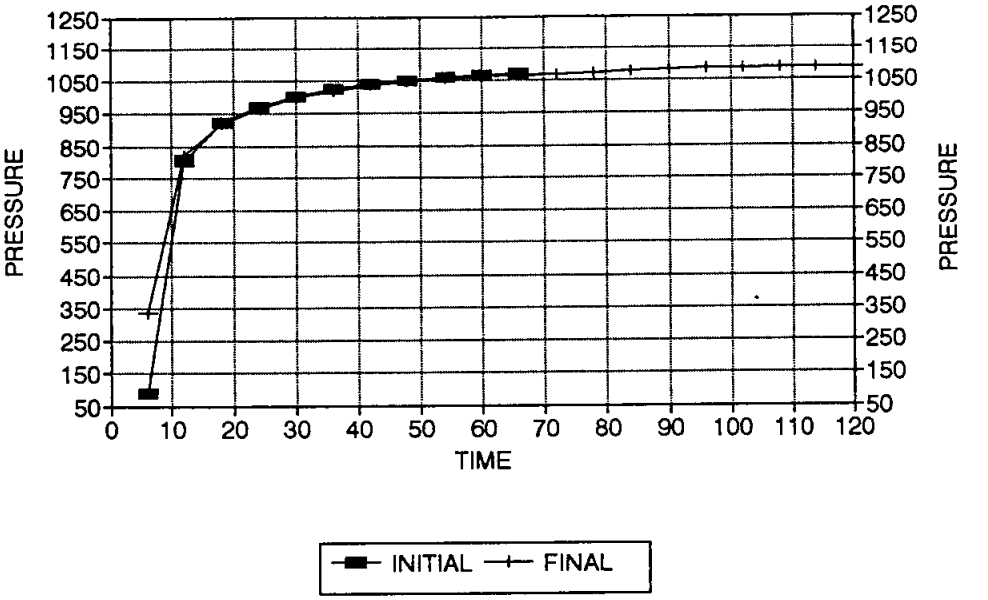
HARKNESS-SHER DST #4
FINAL SHUTIN

120 TIME

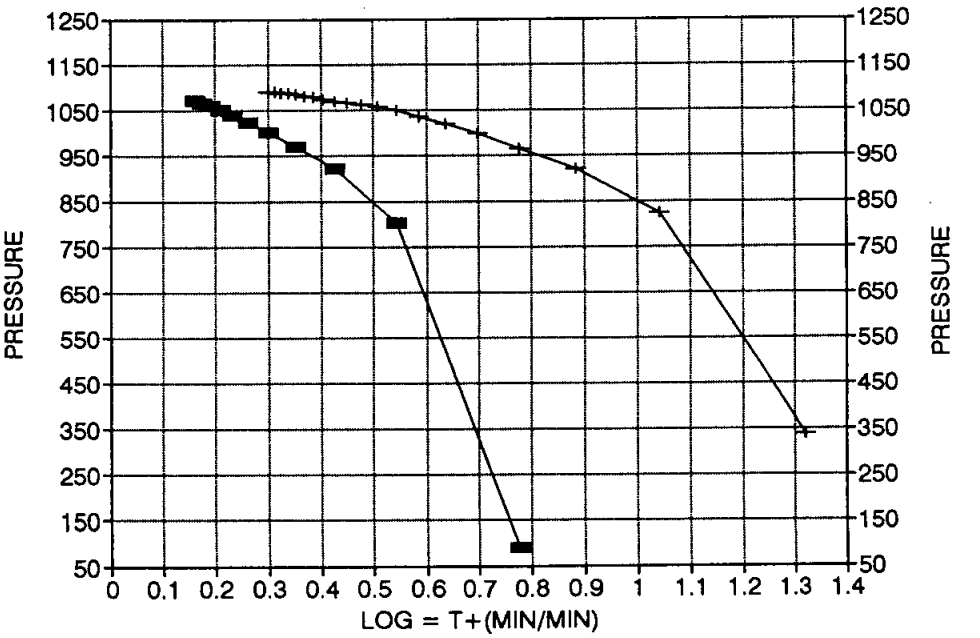
Slope 118.00 psi/cycle
P * 1125 psi

		Pws (psi)	Log Horn T	<> PRESSURE	Horn T
	6	337.9	1.322	337.9	21
	12	823.1	1.041	485.2	11
	18	919.4	0.885	96.3	8
	24	964.6	0.778	45.2	6
	30	998.2	0.699	33.6	5
	36	1019.1	0.637	20.9	4
	42	1036.0	0.586	16.9	4
	48	1047.9	0.544	11.9	4
	54	1056.9	0.508	9.0	3
	60	1062.8	0.477	5.9	3
	66	1066.8	0.450	4.0	3
	72	1069.8	0.426	3.0	3
	78	1072.8	0.405	3.0	3
	84	1077.8	0.385	5.0	2
X	90	1081.8	0.368	4.0	2
	96	1084.8	0.352	3.0	2
	102	1086.7	0.338	1.9	2
	108	1087.7	0.325	1.0	2
	114	1088.7	0.312	1.0	2
X	120	1089.7	0.301	1.0	2

HARKNESS-SHERWIN #1-19 /DST #4
DELTA T DELTA P



HORNER PLOT



Kanken

WELL NAME Harkness Sherwin DST # 4 RECORDER # 13337

	INIT. HYD. MUD.		INITIAL SHUTIN MINUTES 60 INTERVAL 6			FINAL HYD. MUD		FINAL SHUTIN MINUTES 120 INTERVAL
	INITIAL FLOW MINUTES 30 INTERVAL					FINAL FLOW MINUTES 90 INTERVAL 6		
	.028	276	.033		1	.054	533	.072
	.029		.092		2	.047		.342
	.030		.814		3	.045		.825
			.926		4	.047		.923
			.982		5	.049		.979
	.030		1.016		6	.050		1.012
			1.040		7	.053		1.034
			1.056		8	.055		1.051
	031		1.066		9	.059		1.063
			1.075		10	.060		1.072
	.032		1.082		11	.061		1.078
	.033	32.5	1.087	1071.8	12	.062		1.082
					13			1.085
					14	.064		1.088
					15	.066		1.093
					16	.070		1.097
					17	.072	71.1	1.100
					18			1.102
					19			1.103
					20			1.104
					21			1.105 1089.7
					22			
					23			
					24			
					25			
					26			
					27			

0.028	27.64533
0.029	28.623
0.03	29.6
0.03	29.6
0.03	29.6
0.03	29.6
0.03	29.6
0.03	29.6
0.031	30.58925
0.031	30.58925
0.032	31.57867
0.033	32.56825

0.033	~~32.56825~~
0.092	90.9236
0.814	802.5534
0.936	922.3939
0.983	968.5926
1.016	1001.208
1.04	1025.079
1.056	1040.998
1.066	1050.95
1.075	1059.908
1.082	1066.877
1.087	1071.855

0.054	53.3592
0.047	46.42895
0.045	44.44875
0.047	46.42895
0.049	48.40955
0.05	49.4
0.053	52.3693
0.055	54.34917
0.059	58.3097
0.06	59.3
0.061	60.2896
0.062	61.27925
0.063	62.26894
0.064	63.25867
0.066	65.23825
0.07	69.19792
0.072	71.178

0.072	~~71.178~~
0.342	337.9319
0.835	823.1801
0.933	919.4447
0.979	964.6612
1.013	998.225
1.034	1019.11
1.051	1036.023
1.063	1047.964
1.072	1056.922
1.078	1062.895
1.082	1066.877
1.085	1069.864
1.088	1072.851
1.093	1077.829
1.097	1081.812
1.1	1084.8
1.102	1086.794
1.103	1087.791
1.104	1088.788
1.105	1089.785

TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Test Ticket

№ 5090

Well Name & No. Harkness - Sherwin 1-19 Test No. Four Date 7/23/92

Company Kanken Energy Corporation Zone Tested Miss

Address 2325 S.W. 15th St. Edmond, OK. 73013-2024 Elevation 2592 KB

Co. Rep./Geo. Doug Bellis Cont. Emphasis Est. Ft. of Pay 4

Location: Sec. 9 Twp. 18S Rge. 26W Co. Ness State Kansas

No. of Copies Standard Distribution Sheet ____ Yes ____ (No) Turnkey ____ Yes ____ (No) ____ Evaluation

Interval Tested 4526 to 4550 Drill Pipe Size 4½" XH

Anchor Length 24' Top Choke — 1" ____ Bottom Choke — ¾" ____

Top Packer Depth 4521 Hole Size — 7⅞" ____ Rubber Size — 6¾" ____

Bottom Packer Depth 4526 Wt. Pipe I.D. — 2.7 Ft. Run ____

Total Depth 4550 Drill Collar — 2.25 Ft. Run ____

Mud Wt. 9.2 lb / gal. Viscosity 48 Filtrate 9.8

Tool Open @ 3:45 14 Initial Blow WEAK TO FAIR 7" IN 30 MIN.

Final Blow FAIR THROUGHOUT BOT. BUCKET IN 30 MIN.

Recovery — Total Feet 210 Feet of Gas in Pipe 180 Flush Tool? NO

Rec. 30'	Feet Of OIL	%gas	%oil	%water	%mud	
Rec. 60	Feet Of G+O C M	25 %gas	50 %oil	%water	25 %mud	
Rec. 60	Feet Of G+O C M	25 %gas	35 %oil	%water	40 %mud	
Rec. ____	Feet Of ____	%gas	%oil	%water	%mud	
Rec. ____	Feet Of ____	%gas	%oil	%water	%mud	

BHT 120 °F Gravity 40 °API @ 80 °F Corrected Gravity 38 °API

RW ____ @ ____ °F Chlorides ____ ppm Recovery Chlorides 1,000 ppm System

(A) Initial Hydrostatic Mud	2268 PSI	AK1 Recorder No.	13337	Range	3975
(B) First Initial Flow Pressure	19 PSI	@ (depth)	4531	w/Clock No.	31154
(C) First Final Flow Pressure	29 PSI	AK1 Recorder No.	10333	Range	8075
(D) Initial Shut-In Pressure	1074 PSI	@ (depth)	4550	w/Clock No.	30401
(E) Second Initial Flow Pressure	39 PSI	AK1 Recorder No.	____	Range	____
(F) Second Final Flow Pressure	29 PSI	@ (depth)	____	w/Clock No.	____
(G) Final Shut-In Pressure	1084 PSI	Initial Opening	30	Test	550 00
(H) Final Hydrostatic Mud	2268 PSI	Initial Shut-In	60	Jars	____
		Final Flow	90	Safety Joint	____
		Final Shut-In	120	Straddle	____
				Circ. Sub	____
				Sampler	____
				Extra Packer	____
				Other	____
				TOTAL PRICE $	550 00

Approved By Doug Bellis

Our Representative [signature]

Printcraft Printers - Hays, KS