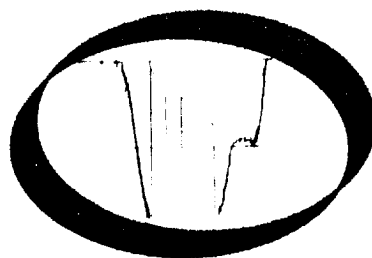


at - ham, inc. ny
Formation Testing Service Report



↓ PRESSURE

820788-1516

→ TIME

820788-1496

Each Horizontal Line Equal to 1000 p.s.i.

FLUID SAMPLE DATA				Date 9-6-80		Ticket Number 820788	
Sampler Pressure _____ P.S.I.G. at Surface				Kind of D.S.T. OPEN HOLE		Halliburton Location HOBBS	
Recovery. Cu. Ft. Gas _____				Tester MR. LONG		Witness MR. BRUMLEY	
cc. Oil _____				Drilling Contractor WILL BROTHERS DRILLING COMPANY RIG #5			
cc. Water _____				EQUIPMENT & HOLE DATA			
cc. Mud _____				BC			
Tot. Liquid cc. _____				Formation Tested Pennsylvania			
Gravity _____ ° API @ _____ ° F.				Elevation _____ 3650' _____ Ft.			
Gas/Oil Ratio _____ cu. ft./bbl.				Net Productive Interval _____ 10' _____ Ft.			
RESISTIVITY CHLORIDE CONTENT				All Depths Measured From Kelly Bushing			
Recovery Water _____ @ _____ ° F. _____ ppm				Total Depth _____ 10451' _____ Ft.			
Recovery Mud _____ @ _____ ° F. _____ ppm				Main Hole/Casing Size _____ 7 7/8"			
Recovery Mud Filtrate _____ @ _____ ° F. _____ ppm				Drill Collar Length _____ 675' I.D. 2.25"			
Mud Pit Sample _____ @ _____ ° F. _____ ppm				Drill Pipe Length _____ 9702' I.D. 3.240"			
Mud Pit Sample Filtrate _____ @ _____ ° F. _____ ppm				Packer Depth(s) _____ 10383' - 10390' _____ Ft.			
Mud Weight _____ 8.7 vis 41 sec.				Depth Tester Valve _____ 10352' _____ Ft.			
TYPE		AMOUNT		Depth Back Pres. Valve		Surface Choke 1" ADJ. Bottom Choke .75"	
Cushion				Ft.			
Recovered		30	Feet of	Formation water			
Recovered		60	Feet of	Drilling mud			
Recovered			Feet of				
Recovered			Feet of				
Recovered			Feet of				
Remarks SEE PRODUCTION TEST DATA SHEET.							
Charts indicate tools possibly did not close for final closed in pressure period.							
TEMPERATURE		Gauge No. 1516		Gauge No. 1496		Gauge No.	
Depth:		10369' Ft.		10447' Ft.		TIME (00:00-24:00 hrs.)	
24 Hour Clock		24 Hour Clock		24 Hour Clock		Tool	
Est. ° F.		Blanked Off NO		Blanked Off YES		Blanked Off	
Actual 150° F.		Pressures		Pressures		Pressures	
		Field	Office	Field	Office	Field	Office
Initial Hydrostatic		4880	4933.1	4900	4919.8-Questionable	Reported	Computed
						Minutes	Minutes
First Period	Flow Initial	88	112.0	266	221.2		
	Flow Final	44	81.3	221	230.0	16	
	Closed in	374	358.2	376	413.7	59	
Second Period	Flow Initial	88	87.9	155	141.5		
	Flow Final	44	83.5	155	139.3	43	
	Closed in	-	-	-	-	45	
Third Period	Flow Initial						
	Flow Final						
	Closed in						
Final Hydrostatic		4880	4904.2	4922	4955.4		

Legal Location
Sec. - Twp. - Rng.

34 - 13S - 34E

Field Area

County LEA

State

NEW MEXICO

ELKAN
Lease Name

Well No.

Test No.

10390' - 10451'
Tested Interval

DURHAM CORPORATION

Lease Owner/Company Name

INDICATE TYPE AND SIZE OF GAS MEASURING DEVICE USED.

FORM 104 RI--PRINTED IN U.S.A.

LITTLE'S 96672 BH 8/74

HALLIBURTON SERVICES
MIDLAND DIVISION
HOBBS, NEW MEXICO 88240

TICKET # 820788

LABORATORY WATER ANALYSIS

No. W80-973

To Durham CorporationDate 9-6-80Drawer 273Midland, Texas

This report is the property of Halliburton Company and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management; it may however, be used in the course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton Company.

Submitted by _____ Date Rec. 9-6-80Well No. Elkan #1 Depth 10,451' Formation PennCounty Lea Field _____ Source DST #1

	Tool Top	Top of Fluid	Change of Fluid
Resistivity	0.297 @ 74°F.	0.265 @ 74°F.	0.312 @ 74°F.
Specific Gravity			
pH			
Calcium (Ca)			*MPL
Magnesium (Mg)			
Chlorides (Cl)	12,000	12,500	11,500
Sulfates (SO ₄)			
Bicarbonates (HCO ₃)			
Soluble Iron (Fe)			
Pit Sample - Res. @ 74°F - 0.311 Chlorides, mpl - 11,500			

Remarks

*Milligrams per liter

Respectfully submitted,

Analyst Brewer

HALLIBURTON COMPANY

cc.

By

W. L. Brewer

CHEMIST

NOTICE

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	O. D.	I. D.	LENGTH	DEPTH
Drill Pipe or Tubing				
Drill Collars	6"	2.50"	1'	
Reversing Sub				
Water Cushion Valve	4"	3.240"	9702'	
Drill Pipe	6"	2.25"	645'	
Drill Collars				
Harding Sub & Choke Assembly				
Drill CIP Valve				
Drill CIP Sampler X over	5.75"	2.25"	1'	
Hydro Spring Tester	5"	.75"	4'	10352'
Multiple CIP Sampler	5"	.75"	5'	
Extension Joint	5"	.87"	10'	
AP Running Case	5"	3.25"	4'	10369'
Hydraulic Jar	5"	1.75"	5'	
VR Safety Joint	5"	1"	3'	
Pressure Equalizing Crossover				
Packer Assembly	7"	1.53V	5'	10383'
Distributor	5"	1.68"	2'	
Packer Assembly	7"	1.53"	5'	10390'
Flush Joint Anchor				
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case				
Drill Collars				
Anchor Pipe Safety Joint				
Packer Assembly				
Distributor				
Packer Assembly				
Anchor Pipe Safety Joint	5.75"	1.5"	4'	
X over	5.75"	2"	1'	
Side Wall Anchor				
Drill Collars	6"	2.25"	30'	
X over	6"	2.25"	1'	
Flush Joint Anchor	5.75"	3.25"	18'	
Blanked-Off B.T. Running Case	5.75"	3.25"	5'	10447'
Total Depth				10451'

NOMENCLATURE

b	Approximate Radius of Investigation	Feet
b_1	Approximate Radius of Investigation (Net Pay Zone h)	Feet
D.R.	Damage Ratio	—
El	Elevation	Feet
GD	B.T. Gauge Depth (From Surface Reference)	Feet
h	Interval Tested	Feet
h_1	Net Pay Thickness	Feet
K	Permeability	md
K_1	Permeability (From Net Pay Zone h)	md
m	Slope Extrapolated Pressure Plot (Psi ² /cycle Gas)	psi/cycle
OF ₁	Maximum Indicated Flow Rate	MCF/D
OF ₂	Minimum Indicated Flow Rate	MCF/D
OF ₃	Theoretical Open Flow Potential with/Damage Removed Max.	MCF/D
OF ₄	Theoretical Open Flow Potential with/Damage Removed Min.	MCF/D
P_s	Extrapolated Static Pressure	Psig.
P_f	Final Flow Pressure	Psig.
P_w	Potentiometric Surface (Fresh Water*)	Feet
Q	Average Adjusted Production Rate During Test	bbls/day
Q_1	Theoretical Production w/Damage Removed	bbls/day
Q_g	Measured Gas Production Rate	MCF/D
R	Corrected Recovery	bbls
r_w	Radius of Well Bore	Feet
t	Flow Time	Minutes
t_w	Total Flow Time	Minutes
T	Temperature Rankine	°R
Z	Compressibility Factor	—
μ	Viscosity Gas or Liquid	CP
Log	Common Log	

* Potentiometric Surface Reference to Rotary Table When Elevation Not Given, Fresh Water Corrected to 100 °F.