

Comments relative to the analysis of the pressure chart from DST #1, Interval: 3305-3320', in the Davis Oil Company, Bonita #1, NE SE Section 25, T20N-R11W, McKinley County, New Mexico:

1. Because of the apparent inadvertent opening of the tool prior to the seating of the packers, and the fill-up of mud in the pipe in excess of 1200 feet, as indicated by the Initial flowing pressure of 647 psi, the actual volume and nature of the fluid recovered during the flowing periods is indeterminate. The volume of fluid recovered and the calculated Average Production Rate of 18.0 BPD have been estimated on the basis of the difference between the Initial and Final Flowing pressures. The calculated reservoir properties should therefore be considered as indicators rather than quantitative values.
2. The extrapolation of the Initial Shut-in pressure build-up curve indicates a maximum reservoir pressure of 1562 psi at the recorder depth of 3289 feet. Extrapolation of the Final Shut-in pressure build-up curve indicates a maximum reservoir pressure of 1550 psi at the recorder depth. The difference between the extrapolated Initial and Final Shut-in pressures (12 psi) is considered insignificant.
3. The calculated Damage Ratio of 0.9 indicates that no significant well-bore damage was present at the time of this formation test.
4. The calculated Effective Transmissibility of 9.4 md.-ft./cp. indicates an Average Permeability of 1.2 md./cp. for the reported 8 feet of effective porosity within the total interval of the test.
5. The evaluation criteria used in the Drill-Stem-Test Analysis System indicate that the results obtained in this analysis should be reliable within reasonable limits relative to the assumptions which have been made.

Drill-Stem-Test Pressure Analysis Report

LOCATION: T20N-R11W, NE SE Section 25	TIME OPEN: Initial: 15 Min. Final: 60 Min.	FILE NUMBER: Special
COUNTY AND STATE: NEW MEXICO, MCKINLEY	INITIAL SHUT-IN TIME: 45 minutes	I. D. NUMBER: V-2635
COMPANY: Davis Oil Company	FINAL SHUT-IN TIME: 90 minutes	DATE COMPUTED: 5/5/71
LEASE AND WELL NUMBER: Bonita #1	TEST NUMBER: 1	DATE TESTED: 5/5/71
FORMATION TESTED: Dakota "A" Sand	INTERVAL TESTED: 3305-3320	ELEVATION: KB 6471

RECOVERY:	1445 ft. fluid: 120 ft. drilling mud, 790 ft. slightly oil-cut mud, 535 ft. water-cut mud, trace of oil.
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HOLE, TOOL AND RECOVERY DATA

DRILL-PIPE CAPACITY (Barrels per foot)	0.0142	FEET OF MUD o&wc	1445.	MUD PERCENTAGE %	100.
DRILL-COLLAR CAPACITY (Barrels per foot)	0.0049	FEET OF WATER		WATER PERCENTAGE %	
DRILL-COLLAR FOOTAGE (Feet)	535.	FEET OF OTHER		OTHER PERCENTAGE %	
HOLE DIAMETER (Inches)	7.875	FEET OF OIL		OIL PERCENTAGE %	
PIPE FOOTAGE EQUIVALENT TO ANNULUS (Feet)	---	FEET OF CUSHION		FORMATION RECOVERY PERCENTAGE %	
INTERVAL THICKNESS (Feet)	15. (net 8')	TOTAL RECOVERY (Feet)	1445.	AVERAGE PRODUCTION RATE (Barrels per day)	18.0 est.
MUD WEIGHT (Pounds per gallon)	9.9	CAPACITY OF ANNULUS (Barrels)	0.90		
EFFECTIVE FLOWING TIME (Minutes)	60.	GROSS RECOVERY VOLUME (Barrels)	0.75 est	RECOVERY LESS THAN ANNULAR VOLUME, (X)	☐

GAUGE SUMMARY

RECORDER NUMBER 1050	DEPTH: 3289'	DATUM: +3182'
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KEY POINT SUMMARY

First Flow	
INITIAL FLOWING PRESSURE:	psig
647.	
FINAL FLOWING PRESSURE:	psig
656.	
Second Flow	
INITIAL FLOWING PRESSURE:	psig
693.	
FINAL FLOWING PRESSURE:	psig
723.	
INITIAL SHUT-IN PRESSURE:	psig
1528.	
FINAL SHUT-IN PRESSURE:	psig
1481.	
INITIAL HYDROSTATIC MUD PRESSURE:	psig
1716.	
FINAL HYDROSTATIC MUD PRESSURE:	psig
1696.	

EXTRAPOLATION SUMMARY

INITIAL (1+0)/0 CALCULATED FROM MEASURED DATA:	
1.33	
NUMBER OF POINTS USED FOR INITIAL CURVE-FIT:	
8.	
SLOPE OF INITIAL BUILD-UP CURVE:	psi/cycle

INITIAL EXTRAPOLATED PRESSURE:	psig
1562.	
FINAL (1+0)/0 CALCULATED FROM MEASURED DATA:	
1.67	
NUMBER OF POINTS USED FOR FINAL CURVE-FIT:	
6.	
SLOPE OF FINAL BUILD-UP CURVE:	psi/cycle
310.	
FINAL EXTRAPOLATED PRESSURE:	psig
1550.	

SUMMARY OF RESULTS

EFFECTIVE TRANSMISSIBILITY, $k_{h\mu}$:	md ft per cp
9.4	
INDICATED AVERAGE PERMEABILITY, k_{μ} :	md/cp
1.2 (for 8' of net ϕ)	
PRODUCTIVITY INDEX:	Barrels per day per psi
0.012	
DAMAGE RATIO:	
0.90	
FLOWING PRESSURE COMPARISON:	%
97.6	
INITIAL POTENTIOMETRIC SURFACE:	feet
6822.	
FINAL POTENTIOMETRIC SURFACE:	feet
6794.	
INITIAL MUD PRESSURE COMPARISON:	%
98.7	
FINAL MUD PRESSURE COMPARISON:	%
99.8	

PRESSURE BUILD-UP CURVE INCREMENTAL-READING DATA

Company Davis Oil Company

Well Name & No. Bonita #1

Location NE SE Sec. 25, T20N-R11W, McKinley County, New Mexico

DST No. 1 Test Interval: 3305-3320 Formation Tested: Dakota "A" Sand

Recorder No. 1050 Recorder Depth 3289 feet.

INITIAL SHUT-IN

FINAL SHUT-IN

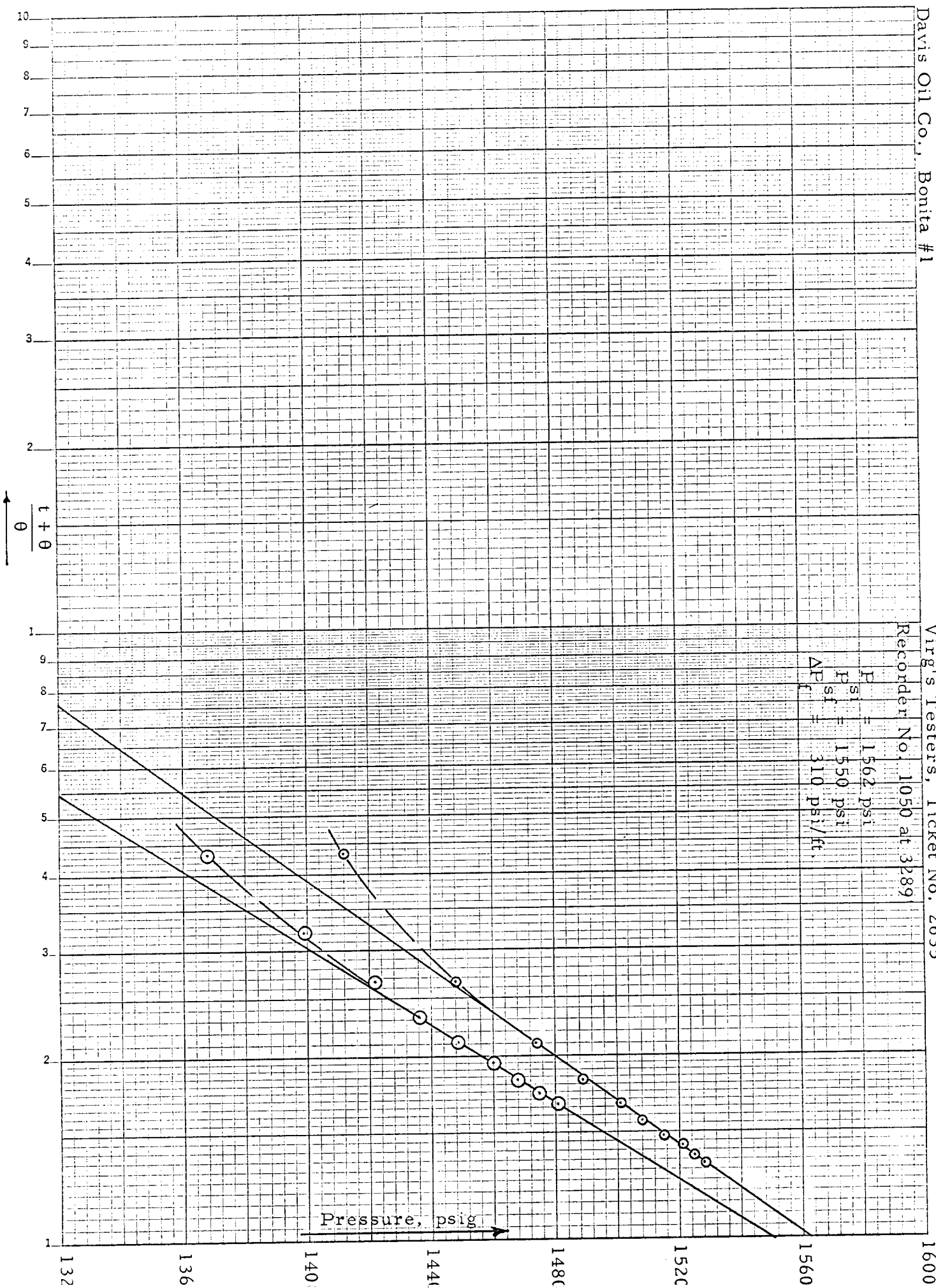
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Davis Oil Co., Bonita #1

Virg's Testers, Ticket No. 2635

Recorder No. 1050 at 3289

$P_{si} = 1562 \text{ psi}$
 $P_{st} = 1550 \text{ psi}$
 $\Delta P_f = 310 \text{ psi/ft.}$



Contractor Lewmont Drlg. Assoc. Top Choke 1"
 Rig No. 8 Bottom Choke 9/16"
 Spot NE-SE Size Hole 7 7/8"
 Sec. 25 Size Rot Hole None
 Twp. 20 N Size & Wt. D. P. 1 1/2" 16.60
 Rng. 11 W Size Wt. Pipe None
 Field Wildcat I. D. of D. C. 2 1/2"
 County McKinley Length of D. C. 535'
 State New Mexico Total Depth 3320'
 Elevation 6471' K.B. Interval Tested 3305-3320
 Formation Dakota "A" Sand Type of Test Straight
 Tool Open @ 3:45 A M.
 Flow #1 15 Min. SIP #1 15 Min. Flow #2 60 Min. SIP #2 90 Min.
 Flow #3 Min. SIP #3 Min. Flow #4 Min. SIP #4 Min.
 B. H. T. 112° Gravity
 Mud Wt. 9.9 Viscosity 50

TOOL SEQUENCE

3299-----

3305-----

TD 3320-----

PRD Make Kuster AK-1
 No. 1050 Cap. 3400 @ 3289
 Press Field Corrected

IH	A	1720	1716
FH	K	1720	1696
Flow #1-IF	B	602	617
FF	C	671	656
SIP #1	D	1545	1528
Flow #2-IF	E	671	693
FF	F	722	723
SIP #2	G	1484	1461
Flow #3-IF	H	None	Taken
FF	I	"	"
SIP #3	J	"	"

Pressure Below
Bottom Packer
Bled To

Our Tester: B. J. BobbittWitnessed By: Joe Thomas

RECOVERY IN PIPE

DID WELL FLOW - Gas No Oil No Water No

1445' Total fluid
 120' Rotary mud, no shows = 1.70 Bbl.
 790' Slightly oil-cut mud = 11.22 Bbl.
535' Water-cut mud with a trace of oil = 2.62 Bbl.

1st Flow - Tool opened with a weak blow, increasing to a fair blow
 (bubble hose under 6" water).

2nd Flow - Tool opened with a weak blow, increasing to a good blow.

Corrected pressures in 4 1/2 & 9 minute increment readings on following page.

REMARKS:

Operator Davis Oil Co.
 Address See Distribution
 Well Name and No. Bonita #1
 Ticket No. 2635
 Date 5-5-71
 DST No. 1
 No. Final Copies 10

T-2635R-1050

(K)

(E)

(D)

(A)

(F)

(E)

(C)

(B)

DAVIS OIL CO.
Bonita #1 DST #1 Ticket #2635

Initial Shut-in

4 $\frac{1}{2}$	mins.	1412	lbs.
9	"	1448	"
13 $\frac{1}{2}$	"	1474	"
18	"	1489	"
22 $\frac{1}{2}$	"	1501	"
27	"	1508	"
31 $\frac{1}{2}$	"	1515	"
36	"	1521	"
40 $\frac{1}{2}$	"	1525	"
45	"	1528	"

Final Shut-in

9	mins.	1317	lbs.
18	"	1368	"
27	"	1399	"
36	"	1422	"
45	"	1436	"
54	"	1449	"
63	"	1460	"
72	"	1468	"
81	"	1475	"
90	"	1481	"

Fluid Sample Report

Date 5-5-71 Ticket No. 2635
Company Davis Oil Co.
Well Name & No. Bonita #1 DST No. 1
County McKinley State New Mexico
Sampler No. 13 Test Interval 3305-3320

Pressure in Sampler 250 PSIG BHT 112 OF

Total Volume of Sampler: 2200 cc.
Sample: 1600 cc.
Oil: 200 cc.
Water: 1400 With a Trace of Oil cc.
Mud: None cc.
Gas: None cu. ft.
Other: None

Resistivity

Water: 1.75 @ 70° of Chloride Content 4500 ppm.

Mud Pit Sample 4.0 @ 50° of Chloride Content 1870 ppm.

Gas/Oil Ratio Gravity °API @ OF

Where was sample drained Location

Remarks: Oil Sample Recovered Tool Small to Get Gravity Reading

DISTRIBUTION OF FINAL DST REPORTS

Company Operating Well Davis Oil Co. Tkt. No. 2635
Lease Bonita Well No. 1 Field Wildcat
County McKinley State New Mexico Sec. 25 Twp. 20 N Rng. 11 W Spot NE-SE
DST. No. 1 Date of Test 5-5-71 Interval Tested 3305-3320

BE SURE AND SHOW CORRECT ADDRESS AND NUMBER OF COPIES. STATE ADDRESS TO WHICH ORIGINAL CHART WILL BE MAILED.

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2 copies: New Mexico Oil & Gas Cons. Comm., Box 2088, Santa Fe, New Mexico 87501

Our Tester _____ Approved by _____