

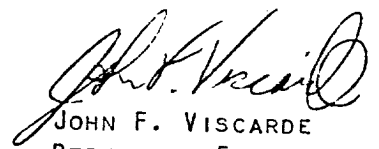
COMPUTERIZED DATA ANALYSIS

FEBRUARY 3, 1976

GENTLEMEN:

THE ENCLOSED TEST APPEARS TO BE A GOOD MECHANICAL DRILL STEM TEST DURING WHICH THE TOOLS DID FUNCTION PROPERLY. THE FORMATION PRODUCED ENOUGH RESERVOIR FLUID FOR PROPER IDENTIFICATION. RESERVOIR PRESSURE DRAWDOWN WAS SUFFICIENT AND ADEQUATE SHUT-IN BUILD-UPS DID OCCUR FOR RELIABLE QUANTITATIVE ANALYSIS.

1. FLOW RATE: A FLOW RATE OF 3900 MCF/DAY OF GAS WAS NOTED DURING THIS TEST.
2. RESERVOIR PRESSURE: MECHANICAL STABILIZATION OF THE INITIAL SHUT-IN PRESSURE BUILD-UP INDICATES A MAXIMUM RESERVOIR PRESSURE OF 3566 P.S.I.G. AT RECORDER DEPTH. MECHANICAL STABILIZATION OF THE FINAL SHUT-IN PRESSURE BUILD-UP INDICATES A MAXIMUM RESERVOIR PRESSURE OF 3518 P.S.I.G. AT RECORDER DEPTH. THE DIFFERENCE BETWEEN THE INITIAL AND FINAL SHUT-IN PRESSURE OF 48 P.S.I.G. IS INDICATIVE OF DEPLETION. A LIMITED RESERVOIR IS INDICATED IF DEPLETION IS ACTUALLY TAKING PLACE.
3. PERMEABILITY: THE CALCULATED TRANSMISSIBILITY FACTOR OF 138,789 MD.-FT./CP. INDICATES AN AVERAGE EFFECTIVE PERMEABILITY TO GAS OF 288.4 MD. FOR THE REPORTED 9 FOOT TEST INTERVAL. THE CALCULATIONS WERE BASED ON A SLOPE OF 28,152 P.S.I.²/LOG CYCLE OBTAINED FROM THE FINAL SHUT-IN BUILD-UP PLOT. IT WAS ASSUMED FOR THESE CALCULATIONS: (A) GAS GRAVITY 0.70 (B) VISCOSITY .022 CP. (C) AND GAS DEVIATION FACTOR .82. THESE FIGURES WERE OBTAINED FROM THE AVAILABLE TECHNICAL LITERATURE.
4. WELL BORE DAMAGE: THE CALCULATED DAMAGE RATIO OF 3.27 INDICATES THAT WELL BORE DAMAGE IS PRESENT AT THE TIME AND CONDITIONS OF THIS TEST. THIS VALUE INFERS THAT THE RATE OF PRODUCTION OBSERVED AT THE FORMATION FACE DURING THIS TEST MAY BE INCREASED 3.27 TIMES IF THE WELL BORE DAMAGE ALONE WERE REMOVED.
5. RADIUS OF INVESTIGATION: THE CALCULATED RADIUS OF INVESTIGATION OF THIS TEST IS 921 FEET BASED ON AN ASSUMED POROSITY OF 10%, COMPRESSIBILITY OF 2.2×10^{-4} , AND OTHER ASSUMPTIONS MADE IN NUMBER 3 ABOVE.
6. GENERAL COMMENTS: THE FORMATION EXHIBITS THE CHARACTERISTICS OF RELATIVELY HIGH PERMEABILITY EFFECTIVE TO THE RESERVOIR FLUID AND INDICATES THE PRESENCE OF WELL BORE DAMAGE. THE CONTROLLING FACTOR IN THIS TEST, HOWEVER, WOULD BE THE INDICATION OF DEPLETION. THIS ASPECT SHOULD BE EXAMINED CAREFULLY AS FLOW POTENTIAL OF THIS ZONE WOULD BE AFFECTED.


JOHN F. VISCARDE
RESERVOIR EVALUATION
DEPARTMENT

LLANO, INC.
HIGGINS TRUST INC. #1; EDDY COUNTY, NEW MEXICO
TEST #2; 9119' TO 9205'
LOCATION: 990N-990E-SEC.13-T18S-R26E

FIELD REPORT#11218 C