May 4, 1996

MEMO:

TO: H-12 WELL LOG FILE.

FROM: Wendell J. Weatherbie. FILE NAME H12FMWLR.WJW.

RE: **WORKOVER PROCEDURES FOR NELSON H-12 PRODUCING WELL.**

DATA ON WELL H-12. Original P.B.??. **Last S.L.M. Was 701' 5/25/94 Seating nipple** is at 672'. Perforations **"A" SAND** are from 618-628, other perforations are from 655-666' and 674-694. S.L.M. was run on 5/9/1995 to a depth of 686'.

PROCEDURES FOR H-12 WELL WORKOVER ON 5/2&3/1996 WERE AS FOLLOWS:

1. Take pressure on K-50 Annulus it was 170#.

2. Ran 1" with 4 hole jet bit on bottom. Installed skinner box & pumping tee on 2 7/8" tubing.

3. Washed down to 700' using water taken from water plant clear tanks. Hit a bridge with 1" pipe and jet bit at the top of the lower perforations. Collected samples of the materials washed to the surface.

4. Mixed 1 gallon of ESA Goldtreat and 1 gallon of ESA #50 in the water used to wash down 2 7/8" tubing, jet the perforations and to flush and displace fluids into the formation.

5. Jetted the formation from 694' up to 674'. Collected samples of the materials washed to the surface.

6. Positioned the jet bit, at the lower perforations, at 694'.

7. Pumped 80 gallons of 28% HCL acid mixed with 1.5 gallons Goldtreat, 1.5 gallons of ESA #96, 1.5 quarts of ESA #91 and 1.5 pints ESA #50 into the perforations.

8. Displaced the 1" pipe and 2 7/8" tubing and pumped at total of 10 barrels of flush water into the wellbore.

9. Closed well in overnight.

5/3/96 Continue well workover on H-12.

1. Pull 1" and jet bit.

2. Run 1" and a **2 7/8" ARROW PRESSURE PACKER** and set in tension at 669'.

3. Used **"SEAL TITE PVC LINING"** 1" pipe with **new "O" rings and teflon thread compound.**

4. Completed wellhead connections and start water injection into the 1" pipe at a rate of 30 barrels a day.

WENDELL.

To Jeff 4-17-97

DELTA TEMPERATURE INFORMATION
TO BE ADDED TO WELL LOG FILES

WELL NO: H-12. DATE: 6/17/1994.

P.B.T.D. 713'. LOGGER'S T.D. 700'. SHUT IN HRS: 22.

PERFORATIONS: 618'-628', 655-665', & 674-697'.

Top Wireline Services, Inc. ran a Differential/Gradient Temperature Log.

The Temperature Anomaly Indicates: The water being injected is leaving the wellbore at the top of the perforated zone. **The formation zone being influenced is the "A" Sand Perforations (618'-628') from the water being injected in this wellbore!.**

NOTE: WHEN THIS WELL WAS SHUT IN FOR A DIFFERENTIAL/GRADIENT TEMPERATURE SURVEY, ON 2/3/1984, IT WAS NOTED THERE WAS A LOT OF "GAS" PRESSURE ON THIS WELLHEAD! THIS TEMPERATURE SURVEY INDICATED THE WATER TO BE LEAVING THE WELLBORE FROM 615-625' AND NONE LEAVING THE PIPE AT THE BOTTOM PERFORATIONS (674-697').

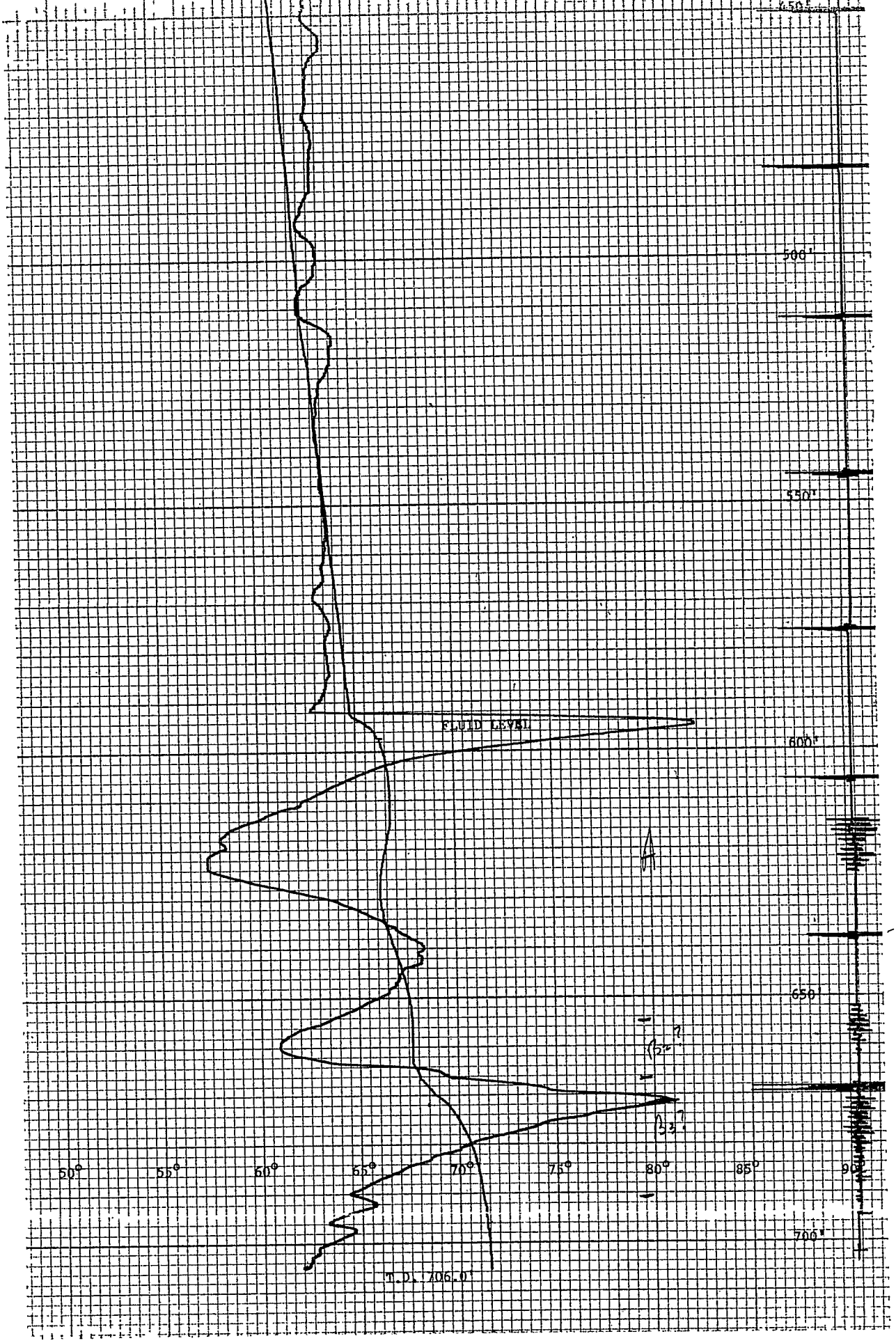
NOTE: INJECTION FLUID FROM THIS WELLBORE IS FEEDING AND PRESSURING THE "A" SAND IN THIS GEOGRAPHICAL REGION!!. THE SURFACE PRESSURE ON K-50 IN 9/94 WAS 0 P.S.I. AND AFTER THE CHEM. LUB. JOB ON 10/3/94 THE SURFACE PRESSURE HAS INCREASED TO 100 P.S.I.!. ON 11/23/94.

NOTE: REFER TO THE DUAL INJECTION SPREADSHEET LABELED NLDIH-12.WQ1. BY COMPARING THE VOLUMES AND PRESSURES OF WATER BEING INJECTED INTO THE "A" SAND ZONE AND THOSE OF THE OTHER ZONES THERE IS A VAST DIFFERENCE!!.

NOTE: SINCE THERE WAS NO EVIDENCE OF COMMUNICATION BETWEEN THE ISOLATED ZONES DURING THE DUAL INJECTION THIS WELL NEEDS THE FOLLOWING WORK PERFORMED. A CHEMICAL WASH AND JET JOB ON THE LOWER PERFORATIONS AND THEN A 1" STRING OF PIPE WITH A PACKER SET AT 650'. INJECTION STARTED DOWN THE I" PIPE AND THE ANNULAR PRESSURE MONITORED.

May 2 & 3, 1996:

Well washed, jetted, acidized and packer set.

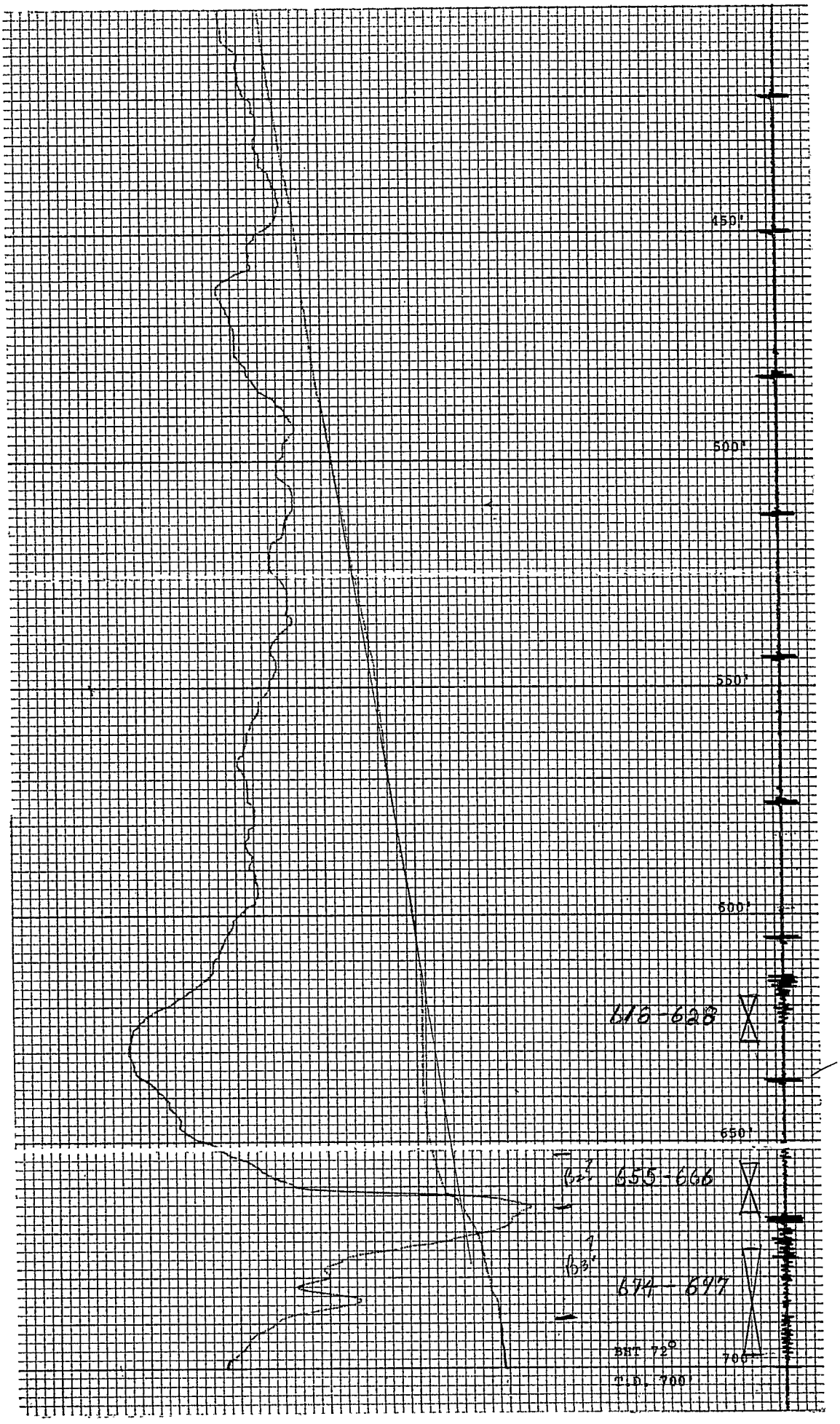


NELSON NO. HW-12

JAMES E. RUSSELL PETROLEUM, INC.

ALLEN COUNTY, KANSAS

2-4-84 TEMP SURVEY



NELSON H-12 6-17-94 Temp Survey
JAMES E. RUSSELL PETROLEUM, INC.
ALLEN COUNTY, KANSAS