

DELTA WING #1 WORKOVER PROCEDURE

- A. LOAD TBG W/ 10 GAL 2% KCL WTR FOLLOWED BY 200 GAL HEATED 20% NEFE HCL. (NOTE: MIX ACID ON LOCATION JUST PRIOR TO PUMPING. HEAT WATER THAT ACID WILL BE MIXED WITH TO 160 DEGREES W/ A HOT OIL TRUCK. FLUSH THE HOT OIL TRUCK CLEAN W/ WTR PRIOR TO HEATING WTR FOR MIXING ACID).
 - B. PRES UP ANNULUS TO 2000 PSI & MAINTAIN THROUGHOUT TREATMENT.
 - C. PUMP CO₂ DOWN TBG @ 8 BPM TO LOAD REMAINDER OF TBG. CONTINUE PUMPING CO₂ @ 8 BPM TO SHEAR PUMP OUT PLUG. EXPECTED PRES WHEN PUMP OUT PLUG SHEARS = 6000 PSI. MAX PRES 7000 PSI. APPROXIMATE CO₂ VOLUME FOR THIS STEP = 43 BBLS.
 - D. AFTER PUMP OUT PLUG SHEARS, CONTINUE PUMPING CO₂ @ 8 BPM, AND THEN BEGIN PUMPING 500 GAL HEATED 20% NEFE HCL @ 1 BPM WHILE DECREASING THE CO₂ RATE TO 7 BPM. APPROXIMATE CO₂ VOLUME FOR THIS STEP = 90 BBLS.
 - E. FLUSH W/ 65 BBLS CO₂ @ 8 BPM.
5. FLOW WELL TO TANK IMMEDIATELY AT MAX RATE. SWAB TEST AS NECESSARY. IF WELL FLOWS WATER, KILL WELL W/ 2% KCL. RLSE PKR & LOWER TO 8750'. SWAB TEST PERFS 8792-8802' FOR WATER. IF PFS PROD WATER, SET CMT RET ABOVE PFS & SQZ W/ 100 SX CLASS 'H' CMT. SET PKR 8500' & SWAB TEST PFS 8522-8802' FOR WATER. IF INTERVAL PRODUCES WTR, ISOLATE PFS 8522-8536' & SQZ W/ 100 SX CLASS 'H' CMT & TST SQZ. SET PKR @ 8400' & SWAB TEST PFS 8422-8802' FOR WATER. IF INTERVAL PRODUCES WTR, ISOLATE PFS 8422-8428' & SQZ W/ 100 SX CLASS 'H' CMT & TEST SQZ. PU & SET PKR @ 8300'. SWAB TEST AS NECESSARY.
6. IF NECESSARY, POP AS DIRECTED BY ENGINEERING. RR.

ACID ADDITIVES

1 GPT CI-23
2 GPT NE-18
10 GPT FE-300L
10 GPT ACETIC ACID

CORROSION INHIBITOR
NONIONIC NON-EMULSIFIER
CITRIC ACID