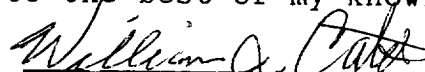


CHRISTIE GAS CORPORATION  
STATE LPG STORAGE WELL NO. 3  
JAL PLANT NO. 4  
UNIT M SECTION 32 T-23-S R-37-E  
LEA COUNTY, NEW MEXICO

MECHANICAL INTEGRITY TEST  
JULY, 1991

CERTIFICATION:

I, William J. Cates, do hereby certify that the Mechanical Integrity Test of Christie Gas Corporation's State LPG Storage Well No. 3 was conducted under my supervision from July 12 thru July 25, 1991 and that all facts, test data, and statements are true and correct to the best of my knowledge.

  
William J. Cates

Oil Conservation Witness: Eddie W. Seay

PERTINENT DATA:

Casing ----- 9 5/8" 36# J-55 Set at 1666'  
Tubing ----- 4 1/2" 16.60# FHDP set at 2489'  
Well Head and Valves ----- 600 Series - 2,000 psi WOG  
Lithostatic Fracture Gradient ----- 0.86 psi/ft.  
Maximum allowable pressure gradient to casing seat- 0.75 psi/ft.  
Minimum proposed pressure gradient to casing seat - 0.70 psi/ft.  
Maximum allowable pressure at casing seat of 1666' - 1,250 psi  
Minimum test pressure at casing seat of 1666' ----- 1,166 psi.  
Maximum surface pressure with 10# brine ----- 384 psi.

CHRONOLOGICAL LOG OF TEST PROCEDURE:

This well has been out of service since 1986. On November 5, 1990 the casing and tubing pressures were 340 psi each. There was evidence that a 12" flange on the casing side of the well head had been leaking but was salted off and there was no LPG left in the well.

On July 12, 1991 the leaking 12" well head flange was tightened up and sealant was pumped in the flange at 4,000 psi. The well head was blinded-off and the casing and tubing pressure was 357 psi. The increase in the pressures from November, 1990 indicated that cavern closure (salt creep) was still occurring with good mechanical integrity to brine.