

# The Western Company

of North America

## TREATMENT REPORT

Date 11-20-80 Western District Farmington (31) F. Receipt 351977  
Operator JOHN H. HILL  
Lease Hodges Well No. 21  
Field Pictured Cliffs Location S34,T26N,R8W  
County San Juan State New Mexico  
Stage Number 1 This Zone ☐ This Well ☒

WELL DATA: OG ☐ NG ☒ NO ☐ OO ☐ WD ☐ IW ☐ Misc. ☐ Depth TD 2468 Formation Pictured Cliffs  
Size Tubing --- Tubing Perf. --- Type Packer --- Set At ---  
Size Casing 2 7/8 Wt. 6.4 Set From surface To unknown Size Liner --- Wt. ---  
Liner Set From --- To --- Open Hole: Size --- From --- To ---  
Casing Perforations: Size .44 Holes Per Foot variable Intervals 2396-2462 (14 holes)

Previous Treatment none Prior Production none

TREATMENT DATA: Pad Used: Yes ☒ No ☐ Pad Type 75% Quality Foam  
Treating Fluid Type: Oil ☐ Water ☐ Acid ☐ Misc. ☐ Foam ☒ Emulsion ☐  
Treating Fluid Volume Gals. 6,888 Fluid Description 75% Quality Foam

### FLUID PUMPED AND CAPACITIES IN BBLs.

Tubing Cap. ---  
Casing Cap. 13.8  
Annular Cap. ---  
Open Hole Cap. ---  
Fluid to Load ---  
Pad Volume 30  
Treating Fluid 134  
Flush N<sub>2</sub>  
Total 164

Total Prop Quantity 40,000 Lbs. Prop Type: Sand ☒ Beads ☐ Special ☐ None ☐  
Prop Mesh Sizes, Types and Quantities 20/40 sand, 40,000 lbs.  
Hole Loaded With circulated with water Treat Via: Tubing ☐ Casing ☒ Anul. ☐ Tubing & Anul. ☐  
Ball Sealers: --- In --- Stages of ---  
Types and Number of Pumps Used (1) GRB 1000  
Auxiliary Materials 1/2 gal I-15; 41 gals Adofoam; 10 gals X-cide; 1750 gals KCl;  
300 gals 15% HCl; 300 gals Spearhead acid; 19,800 SCF N<sub>2</sub>  
Procedure Frac via casing with 300 gals 15% Spearhead acid followed by a 1500 gal pad; 1260 gals with 1#/gal 20/40 sand; 4368 gals with 2#/gal 20/40 sand;  
flush with N<sub>2</sub>

| Time AM/PM | Treating Pressure-Psi | Barrels Fluid Pumped | Inj. Rate BPM | REMARKS                             |
|------------|-----------------------|----------------------|---------------|-------------------------------------|
|            | Tubing                | Casing               |               |                                     |
| 8:30       | -                     | 0                    | 0             | Start spearhead acid                |
| 8:33       | -                     | 1000                 | 2             | Shut down, all acid; fix leak       |
| 9:00       | -                     | 0                    | 0             | Start pad                           |
| 9:06       | -                     | 2600                 | 38            | Start 20/40 sand @1#/gal            |
| 9:07       | -                     | 2600                 | 41.4          | 20/40 sand @1#/gal on formation     |
| 9:13       | -                     | 2600                 | 68            | Start 20/40 sand @2#/gal            |
| 9:14       | -                     | 2600                 | 71.4          | 20/40 sand @2#/gal on formation     |
| 9:36       | -                     | 2600                 | 172           | Start flush, N <sub>2</sub> Flush   |
| 9:39       | -                     | 1900                 | 172           | All N <sub>2</sub> flush, shut down |

Treating Pressure: Min. 2600 Max. 2600 Avg. 2600  
Inj. Rate on Treating Fluid 4.5 Rate on Flush N<sub>2</sub> flush  
Avg. Inj. Rate 4.5 I.S.D.P. 1700 Flush Dens. lb/gal N<sub>2</sub>  
Final Shut-in Pressure 1600 in 15 Minutes.  
Operator's Maximum Pressure 3500

Customer Representative C. D. Moore  
Western Representative Jake Leyva  
Distribution (9) John H. Hill\*  
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Job Number  
587958

5 min shut in - 1700  
10 min shut in - 1650

cc: Farmington District

