



## WELL STIMULATION REPORT

Confluence

Willow 22-15-3L

05-123-50945-00

March 18, 2022

## Engineering Executive Summary

On Friday, December 03, 2021 the stimulation of treatment(s) was performed in the Niobrara formation on the Willow 22-15-3L well in WELD county, COLORADO.

### The proposed treatment(s) consisted of:

|               |            |                         |
|---------------|------------|-------------------------|
| 30,500        | gallons of | 15% HCl                 |
| 0             | gallons of | 7.5% HCl                |
| 0             | gallons of | FR Water                |
| 15,245,915    | gallons of | FR Water (FightR EC-17) |
| 122,000       | gallons of | Treated Water           |
| 2,562,000     | pounds of  | 100 Mesh Premium White  |
| 12,767,986.57 | pounds of  | 30/50 Premium White     |

### The actual treatment(s) consisted of:

|            |            |                         |
|------------|------------|-------------------------|
| 70,852     | gallons of | 15% HCl                 |
| 0          | gallons of | 7.5% HCl                |
| 1,434,048  | gallons of | FR Water                |
| 16,980,263 | gallons of | FR Water (FightR EC-17) |
| 167,062    | gallons of | Treated Water           |
| 2,543,280  | pounds of  | 100 Mesh Premium White  |
| 12,602,471 | pounds of  | 30/50 Premium White     |

57 of 61 treatment(s) were fully completed. 0 treatment(s) were skipped, and 4 treatment(s) were screened out or otherwise cut short of design.

The well was first opened Thursday, December 02, 2021 at 23:53 with an opening pressure of 1,575.0 psi.

The total amount of proppant pumped was 15,145,751.0 lbm with an average concentration of 0.89 ppg and maximum concentration of 2.0 ppg. Treating pressure averaged 6984.64 psi and rate averaged 72.95 bpm.

The operation came offline at 04:34 and the well was shut in Thursday, December 23, 2021 at 04:35 with a final shut-in pressure of 4,503.9 psi. A more detailed description of the actual treatment can be found further down in this report.

Halliburton maintains a continuous quality improvement process and appreciates any comments or suggestions that you may have. Halliburton again thanks you for the opportunity to perform service work on this well.

Regards,

CHRIS VARGAS

CHAD LEWIS

Crew Service Leader

Crew Lead Engineer

# Willow 22-15-3L Plug and Perf Depths

| Stage | Plug Depth | Top Perf ft -MD | Bottom Perf ft -MD | Total Perfs | Formation  |
|-------|------------|-----------------|--------------------|-------------|------------|
| 1     | 19949      | 19758           | 19939              | 20          | Niobrara C |
| 2     | 19758      | 19557           | 19738              | 20          | Niobrara C |
| 3     | 19547      | 19357           | 19537              | 20          | Niobrara C |
| 4     | 19347      | 19154           | 19334              | 20          | Niobrara C |
| 5     | 19146      | 18955           | 19136              | 20          | Niobrara C |
| 6     | 18945      | 18754           | 18935              | 20          | Niobrara C |
| 7     | 18744      | 18553           | 18734              | 20          | Niobrara C |
| 8     | 18543      | 18352           | 18533              | 20          | Niobrara C |
| 9     | 18342      | 18151           | 18332              | 20          | Niobrara C |
| 10    | 18144      | 17947           | 18131              | 20          | Niobrara C |
| 11    | 17937      | 17743           | 17927              | 20          | Niobrara C |
| 12    | 17733      | 17539           | 17723              | 20          | Niobrara C |
| 13    | 17529      | 17335           | 17519              | 20          | Niobrara C |
| 14    | 17325      | 17135           | 17295              | 20          | Niobrara C |
| 15    | 17131      | 16925           | 17111              | 20          | Niobrara C |
| 16    | 16917      | 15764           | 16907              | 20          | Niobrara C |
| 17    | 16713      | 16519           | 16703              | 20          | Niobrara C |
| 18    | 16509      | 16315           | 16499              | 20          | Niobrara C |
| 19    | 16302      | 16111           | 16290              | 20          | Niobrara C |
| 20    | 16101      | 15910           | 16091              | 20          | Niobrara C |
| 21    | 15897      | 15703           | 15887              | 20          | Niobrara C |
| 22    | 15693      | 15499           | 15683              | 20          | Niobrara C |
| 23    | 15489      | 15295           | 15479              | 20          | Niobrara C |
| 24    | 15288      | 15091           | 15275              | 20          | Niobrara C |
| 25    | 15076      | 14890           | 15066              | 20          | Niobrara C |
| 26    | 14880      | 14689           | 14870              | 20          | Niobrara C |
| 27    | 14679      | 14488           | 14669              | 20          | Niobrara C |
| 28    | 14478      | 14290           | 14469              | 20          | Niobrara C |
| 29    | 14284      | 14092           | 14271              | 20          | Niobrara C |
| 30    | 14082      | 13894           | 14073              | 20          | Niobrara C |
| 31    | 13884      | 13696           | 13874              | 20          | Niobrara C |
| 32    | 13686      | 13498           | 13677              | 20          | Niobrara C |
| 33    | 13488      | 13300           | 13478              | 20          | Niobrara C |
| 34    | 13290      | 13102           | 13281              | 20          | Niobrara C |
| 35    | 13092      | 12906           | 13083              | 20          | Niobrara C |
| 36    | 12894      | 12706           | 12885              | 20          | Niobrara C |
| 37    | 12696      | 12508           | 12687              | 20          | Niobrara C |
| 38    | 12498      | 12310           | 12489              | 20          | Niobrara C |
| 39    | 12298      | 12112           | 12289              | 20          | Niobrara C |
| 40    | 12102      | 11914           | 12093              | 20          | Niobrara C |
| 41    | 11904      | 11716           | 11895              | 20          | Niobrara C |
| 42    | 11706      | 11518           | 11697              | 20          | Niobrara C |
| 43    | 11508      | 11322           | 11499              | 20          | Niobrara C |
| 44    | 11310      | 11120           | 11300              | 20          | Niobrara C |
| 45    | 11110      | 10919           | 11099              | 20          | Niobrara C |
| 46    | 10909      | 10718           | 10899              | 20          | Niobrara C |
| 47    | 10708      | 10517           | 10698              | 20          | Niobrara C |
| 48    | 10507      | 10316           | 10497              | 20          | Niobrara C |
| 49    | 10306      | 10115           | 10296              | 20          | Niobrara C |
| 50    | 10105      | 9914            | 10095              | 20          | Niobrara C |
| 51    | 9904       | 9713            | 9894               | 20          | Niobrara C |
| 52    | 9703       | 9512            | 9690               | 20          | Niobrara C |
| 53    | 9502       | 9311            | 9492               | 20          | Niobrara C |
| 54    | 9301       | 9111            | 9291               | 20          | Niobrara C |
| 55    | 9100       | 8910            | 9090               | 20          | Niobrara C |
| 56    | 8896       | 8709            | 8886               | 20          | Niobrara C |
| 57    | 8699       | 8508            | 8689               | 20          | Niobrara C |
| 58    | 8494       | 8302            | 8484               | 20          | Niobrara C |
| 59    | 8297       | 8126            | 8287               | 20          | Niobrara C |
| 60    | 8096       | 7905            | 8086               | 20          | Niobrara C |
| 61    | 7895       | 7707            | 7885               | 20          | Niobrara C |