

# HALLIBURTON

iCem<sup>®</sup> Service

## **NOBLE ENERGY INC-EBUS**

### **Johnson C32-745**

Production Casing

Job Date: Friday, October 21, 2022

Sincerely,

**Nick Roles and Crew**

## Legal Notice

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## 1.0 Cementing Job Summary

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### 1.1 Executive Summary

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Halliburton appreciates the opportunity to perform the cementing services on the Johnson C32-745 production casing job. A pre-job safety meeting was held before the job where details of the job were discussed, potential safety hazards were reviewed, and environmental compliance procedures were outlined.

Approximately 60 bbl. of spacer were returned to surface.

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. We hope to be your solutions provider for future projects.

Respectfully,

**Halliburton Fort Lupton**

*The Road to Excellence Starts with Safety*

| <b>Sold To #:</b> 345242                |            | <b>Ship To #:</b> 3932091 |                        | <b>Quote #:</b>                         |  | <b>Sales Order #:</b> 0908188893  |                        |                    |                  |                  |
|---|------------|---------------------------|------------------------|---|--|-----------------------------------|------------------------|--------------------|------------------|------------------|
| <b>Customer:</b> NOBLE ENERGY INC-EBUS  |            |                           |                        |   | <b>Customer Rep:</b> Charles Culver    |                                   |                        |                    |                  |                  |
| <b>Well Name:</b> JOHNSON               |            |                           | <b>Well #:</b> C32-745 |   |  | <b>API/UWI #:</b> 05-123-49292-00 |                        |                    |                  |                  |
| <b>Field:</b> WATTENBERG                |            | <b>City (SAP):</b> KERSEY |                        | <b>County/Parish:</b> WELD              |  |                                   | <b>State:</b> COLORADO |                    |                  |                  |
| <b>Contractor:</b> H & P DRLG           |            |                           |                        | <b>Rig/Platform Name/Num:</b> H & P 517 |  |                                   |                        |                    |                  |                  |
| <b>Job BOM:</b> 7523                    |            |                           |                        |   |  |                                   |                        |                    |                  |                  |
| <b>Well Type:</b> HORIZONTAL OIL        |            |                           |                        |   |  |                                   |                        |                    |                  |                  |
| <b>Sales Person:</b> HALAMERICA\HX41066 |            |                           |                        |   | <b>Srvc Supervisor:</b> Nicholas Roles |                                   |                        |                    |                  |                  |
| <b>Job</b>                              |            |                           |                        |   |  |                                   |                        |                    |                  |                  |
|   |            |                           |                        |   |  |                                   |                        |                    |                  |                  |
| <b>Job depth MD</b>                     |            | 17150ft                   |                        |   | <b>Job Depth TVD</b>                   |                                   | 6890ft                 |                    |                  |                  |
| <b>Well Data</b>                        |            |                           |                        |   |  |                                   |                        |                    |                  |                  |
| Description                             | New / Used | Size<br>in                | ID<br>in               | Weight<br>lbm/ft                        | Thread                                 | Grade                             | Top MD<br>ft           | Bottom<br>MD<br>ft | Top<br>TVD<br>ft | Bottom TVD<br>ft |
| Casing                                  |            | 9.625                     | 8.921                  | 36                                      |  |                                   | 0                      | 1934               | 0                | 1934             |
| Casing                                  | 0          | 5.5                       | 4.892                  | 17                                      |  |                                   | 0                      | 17150              | 0                | 6890             |
| Open Hole Section                       |            |                           | 8.5                    |   |  |                                   | 1933                   | 17163              | 1933             | 6890             |
| <b>Tools and Accessories</b>            |            |                           |                        |   |  |                                   |                        |                    |                  |                  |
| Type                                    | Size<br>in | Qty                       | Make                   | Depth<br>ft                             |  | Type                              | Size<br>in             | Qty                | Make             |                  |
| Float Shoe                              | 5.5        | 1                         | Citadel                | 17150                                   |  | Bottom Plug                       | 5.5                    | 4                  | HES              |                  |
| Float Collar                            | 5.5        | 1                         | Citadel                | 17143                                   |  |                                   |                        |                    |                  |                  |
|   |            |                           |                        |   |  |                                   |                        |                    |                  |                  |

| Fluid Data  |              |                       |      |                            |                        |                           |               |                               |                     |       |
|---|--------------|-----------------------|------|----------------------------|------------------------|---------------------------|---------------|-------------------------------|---------------------|-------|
| <b>Stage #: 1</b>   |              |                       |      |                            |                        |                           |               |                               |                     |       |
| Fluid #   | Stage Type   | Fluid Name            | Qty  | Qty UoM                    | Mixing Density lbm/gal | Yield ft3/sack            | Mix Fluid Gal | Rate bbl/min                  | Total Mix Fluid Gal |       |
| 1   | Spacer       | Tuned Prime Spacer    | 120  | bbl                        | 11.5                   | 3.88                      | 0             | 8                             | 7245                |       |
| Fluid #   | Stage Type   | Fluid Name            | Qty  | Qty UoM                    | Mixing Density lbm/gal | Yield ft3/sack            | Mix Fluid Gal | Rate bbl/min                  | Total Mix Fluid Gal |       |
| 2   | Cap Cement   | EconoCem™             | 140  | sack                       | 13.2                   | 1.58                      | 7.99          | 6                             | 1118                |       |
| Fluid #   | Stage Type   | Fluid Name            | Qty  | Qty UoM                    | Mixing Density lbm/gal | Yield ft3/sack            | Mix Fluid Gal | Rate bbl/min                  | Total Mix Fluid Gal |       |
| 3   | Lead Cement  | ElastiCem™            | 725  | sack                       | 13.2                   | 1.67                      | 8.03          | 9                             | 5822                |       |
| Fluid #   | Stage Type   | Fluid Name            | Qty  | Qty UoM                    | Mixing Density lbm/gal | Yield ft3/sack            | Mix Fluid Gal | Rate bbl/min                  | Total Mix Fluid Gal |       |
| 4   | Tail Cement  | NeoCem™               | 1129 | sack                       | 13.2                   | 2.04                      | 9.79          | 9                             | 11053               |       |
| Fluid #   | Stage Type   | Fluid Name            | Qty  | Qty UoM                    | Mixing Density lbm/gal | Yield ft3/sack            | Mix Fluid Gal | Rate bbl/min                  | Total Mix Fluid Gal |       |
| 5   | Displacement | Fresh Water with MMCR | 20   | bbl                        | 8.33                   | 0                         | 0             | 10                            | 830                 |       |
| Fluid #   | Stage Type   | Fluid Name            | Qty  | Qty UoM                    | Mixing Density lbm/gal | Yield ft3/sack            | Mix Fluid Gal | Rate bbl/min                  | Total Mix Fluid Gal |       |
| 6   | Displacement | Treated Fresh Water   | 378  | bbl                        | 8.33                   | 0                         | 0             | 5.68                          | 15846               |       |
| <b>Cement Left In Pipe</b>  |              |                       |      |                            |                        |                           |               |                               |                     |       |
| <b>Amount</b>   |              | 0 ft                  |      |                            | <b>Reason</b>          |                           |               | Wet Shoe                      |                     |       |
| <b>Mix Water:</b>   |              | pH 7                  |      | <b>Mix Water Chloride:</b> |                        | 0 ppm                     |               | <b>Mix Water Temperature:</b> |                     | 65 °F |
| <b>Plug Bumped?</b>   |              | Yes                   |      | <b>Plug Displaced by:</b>  |                        | 8.33 lb/gal Treated Water |               | <b>Disp. Temperature:</b>     |                     | 65 °F |
| <b>Cement Returns:</b>  |              | 0 bbl.                |      | <b>Bump Pressure:</b>      |                        | 2365 psi                  |               | <b>Floats Held?</b>           |                     | Yes   |
| <b>Comment:</b> Got 60 bbl. spacer to surface. Estimated TOCap-1003', TOL-1828', TOT-7101'. |              |                       |      |                            |                        |                           |               |                               |                     |       |

2.0 Real-Time Job Summary

2.1 Job Event Log

| Seq. No. | Activity                                 | Date       | Time     | Comments  |
|----------|--|------------|----------|---|
| 1        | Call Out                                 | 10/20/2022 | 22:00:00 | Called out by service coordinator for OL time of 0230.  |
| 2        | Pre-Convoy Safety Meeting                | 10/21/2022 | 01:00:00 | Discuss all hazards associated with journey, directions to destination, complete journey management if needed, and ensure all convoy is fit for duty.   |
| 3        | Depart from Service Center or Other Site | 10/21/2022 | 01:30:00 | Depart from service center or other job site.   |
| 4        | Arrive at Location from Service Center   | 10/21/2022 | 02:30:00 | Upon arrival to location, signed in with onsite safety personnel. Met with company man and discussed job specific requirements and specifications.  |
| 5        | Pre-Rig Up Safety Meeting                | 10/21/2022 | 02:45:00 | Held pre rig up JSA for hazards, hazard hunt with crew, and discussed plan for spotting equipment and rigging up lines for job. Discussed muster points and closest emergency location as well as coordinates.  |
| 6        | Rig-Up Equipment                         | 10/21/2022 | 03:00:00 | Begin rig up with crew.   |
| 7        | Other                                    | 10/21/2022 | 03:05:00 | Mix water test results- PH-7, Chlo-0, Temp-65F.   |
| 8        | Rig-Up Completed                         | 10/21/2022 | 04:00:00 | Complete rig up for job to nearest point before red zone.   |
| 9        | Safety Meeting - Pre Job                 | 10/21/2022 | 04:15:00 | Held job specific hazards as well as confirming job procedure with co man and rest of crew associated with job.   |
| 10       | Start Job                                | 10/21/2022 | 04:41:41 | TD-17163', TP-17150' 5.5" 17#, FC-17143', TVD-6890', SURF-1933' 9.625" 36#, OH-8.5" MUD-10#   |
| 11       | Test Lines                               | 10/21/2022 | 04:44:04 | Pumped 5bbls fresh water to fill lines, closed 2" lo torc, performed 500psi k/o function test, followed with 5th gear stall at 1290psi, perform 6500psi test online. Held pressure, no leaks. Bled off pressure, pumped 1bbl to ensure lines still full and closed valve. Proceeded to bring pressure to 2000psi on Kelly line, pressure stabilized and held with no leaks. |

|    |                   |            |          |   |
|----|-------------------|------------|----------|---|
| 12 | Drop Bottom Plug  | 10/21/2022 | 04:51:21 | Dropped by HES supervisor, witnessed by company man.  |
| 13 | Pump Spacer 1     | 10/21/2022 | 04:53:33 | Pumped 120bbls Tuned Prime 11.5# 3.88y 24.45g/s with 20g D-Air at 8bpm 340psi   |
| 14 | Check Weight      | 10/21/2022 | 04:56:11 | Weight verified with pressurized mud scales.  |
| 15 | Check Weight      | 10/21/2022 | 04:59:20 | Weight verified with pressurized mud scales.  |
| 16 | Drop Bottom Plug  | 10/21/2022 | 05:12:19 | Dropped by HES supervisor, witnessed by company man.  |
| 17 | Pump Cap Cement   | 10/21/2022 | 05:14:24 | Pumped 140skts or 39.4bbls Elasticem w/o CBL 13.2# 1.58y 7.99g/s at 9bpm 580psi.  |
| 18 | Check Weight      | 10/21/2022 | 05:17:48 | Weight verified with pressurized mud scales.  |
| 19 | Pump Lead Cement  | 10/21/2022 | 05:24:45 | Pumped 725skts or 215.6bbls Elasticem w/CBL 13.2# 1.67y 8.03g/s at 9bpm 612psi.   |
| 20 | Check Weight      | 10/21/2022 | 05:33:42 | Weight verified with pressurized mud scales.  |
| 21 | Check Weight      | 10/21/2022 | 05:35:08 | Weight verified with pressurized mud scales.  |
| 22 | Pump Tail Cement  | 10/21/2022 | 05:53:22 | Pumped 1129skts or 410bbls 13.2# 2.04y 9.79g/s Neocem at 9bpm 900psi.   |
| 23 | Check Weight      | 10/21/2022 | 05:56:55 | Weight verified with pressurized mud scales.  |
| 24 | Check Weight      | 10/21/2022 | 06:17:49 | Weight verified with pressurized mud scales.  |
| 25 | Shutdown          | 10/21/2022 | 06:20:31 | Shutdown, due to leak on standpipe.   |
| 26 | Check Weight      | 10/21/2022 | 06:38:42 | Weight verified with pressurized mud scales.  |
| 27 | Shutdown          | 10/21/2022 | 06:57:07 | Shutdown, washed up through pumps and down wash up line to pits until clean water was seen. Pumped total of 20bbls to clean truck and lines. Followed by 4bbls green dye/MMCR water to establish MMCR at CRT. |
| 28 | Drop Top Plug     | 10/21/2022 | 07:07:52 | Dropped 1500psi top plug by HES supervisor, witnessed by company Man.   |
| 29 | Pump Displacement | 10/21/2022 | 07:07:54 | Pumped 398bbls fresh water with 10g MMCR in remaining 17bbls (20bbls total), 10gal MCMX and 20gal Bellacide throughout.   |

|    |  |            |          |   |
|----|--|------------|----------|---|
| 30 | Standby - Other - see comments                   | 10/21/2022 | 07:08:04 | Pumped 3bbls MMCR water, Shutdown.  |
| 31 | Drop Top Plug                                    | 10/21/2022 | 07:10:23 | Dropped 3000psi top plug by HES supervisor, witnessed by company Man.   |
| 32 | Bump Plug  | 10/21/2022 | 08:01:14 | Slowed down to 2bpm at 380bbls away, final circulating pressure- 2365psi, Bump pressure-3000psi. Held for 5min casing test.   |
| 33 | Other  | 10/21/2022 | 08:06:27 | Released pressure and got 5.5bbls fresh water to truck, floats held.  |
| 34 | Other  | 10/21/2022 | 08:09:12 | Burst 1500psi plug at 1bpm 3850psi.   |
| 35 | Other  | 10/21/2022 | 08:15:57 | Pumped 3bbls to bump 3000psi top plug at 1bpm 2300psi.  |
| 36 | Bump Plug  | 10/21/2022 | 08:17:55 | Bumped 3000psi top plug, final circulating pressure-2300psi, bump pressure-2800psi. Held pressure for 5min casing test.   |
| 37 | Other  | 10/21/2022 | 08:22:12 | Released pressure and got 5bbls fresh water to truck, floats held. Held for additional 30min float check.   |
| 38 | End Job  | 10/21/2022 | 08:56:33 | Got 60bbls spacer to surface. Estimated TOCap-1003', TOL-1828', TOT-7101'.  |
| 39 | Pre-Rig Down Safety Meeting                      | 10/21/2022 | 09:00:00 | Held safety meeting with crew prior to rig down, discussed possibility of trapped pressure, swing radius, slips trips and falls, pinch points and risks associated with rig down. |
| 40 | Rig Down Lines                                   | 10/21/2022 | 09:15:00 | Begin rig down  |
| 41 | Rig-Down Completed                               | 10/21/2022 | 10:30:00 | Rig down complete with no injuries, spills or damage to equipment.  |
| 42 | Pre-Convoy Safety Meeting                        | 10/21/2022 | 10:45:00 | Held safety meeting with convoy, discussed trip hazards, directions and all crew fit for duty prior to departure.   |
| 43 | Depart Location for Service Center or Other Site | 10/21/2022 | 11:00:00 | Depart location, if applicable journey will be submitted.   |

3.0 Attachments

3.1 Job Chart

