HALLIBURTON

iCem® Service

# CRESTONE PEAK RESOURCES-EBUS

**Lone Tree 4-65 15-16 4AH Production**
Job Date: Sunday, November 20, 2022

Sincerely,
**Meghan Van Zyl**

# Legal Notice

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# Table of Contents

# 1.0 Cementing Job Summary

## 1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Lone Tree 4-65 15-16 4AH** cement **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 70 bbls of cement 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**

| | | | |
|---|---|---|---|
| **Sold To #:** 324725 | **Ship To #:** 9145452 | **Quote #:** | **Sales Order #:** 0908244482 |
| **Customer:** CRESTONE PEAK RESOURCES-EBUS | | **Customer Rep:** Danny Hererra | |
| **Well Name:** LONE TREE 4-65 15-16 | **Well #:** 4AH | | **API/UWI #:** 05-005-07496 |
| **Field:** | **City (SAP):** WATKINS | **County/Parish:** ARAPAHOE | **State:** COLORADO |
| **Legal Description:** | | | |
| **Contractor:** PATTERSON-UTI ENERGY | | **Rig/Platform Name/Num:** PATTERSON 572 | |
| **Job BOM:** 7523 7523 | | | |
| **Well Type:** OIL | | | |
| **Sales Person:** HALAMERICA\HX41066 | | **Srvc Supervisor:** Nicholas Roles | |

## Job

| | | | | |
|---|---|---|---|---|
| **Formation Name** | | | | |
| **Formation Depth (MD)** | **Top** | | **Bottom** | |
| **Form Type** | | | **BHST** | |
| **Job depth MD** | 18463ft | | **Job Depth TVD** | |
| **Water Depth** | | | **Wk Ht Above Floor** | |
| **Perforation Depth (MD)** | From | | **To** | |

## Well Data

| Description | New / Used | Size in | ID in | Weight lbm/ft | Thread | Grade | Top MD ft | Bottom MD ft | Top TVD ft | Bottom TVD ft |
|---|---|---|---|---|---|---|---|---|---|---|
| Casing | | 9.625 | 8.921 | 36 | | | 0 | 3604 | 0 | 3604 |
| Casing | 0 | 5.5 | 4.778 | 20 | | | 0 | 18452 | 0 | 0 |
| Open Hole Section | | | 8.5 | | | | 3604 | 18463 | 3604 | 7900 |

## Tools and Accessories

| Type | Size in | Qty | Make | Depth ft | | Type | Size in | Qty | Make |
|---|---|---|---|---|---|---|---|---|---|
| **Guide Shoe** | 5.5 | | | | | **Top Plug** | 5.5 | 1 | CITADEL |
| **Float Shoe** | 5.5 | | | 18452 | | **Bottom Plug** | 5.5 | 1 | CITADEL |
| **Float Collar** | 5.5 | | | 18447 | | **SSR plug set** | 5.5 | | HES |
| **Insert Float** | 5.5 | | | | | **Plug Container** | 5.5 | | HES |
| Stage Tool | 5.5 | | | | | **Centralizers** | 5.5 | | HES |

## Fluid Data

**Stage/Plug #: 1**

| 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 | Tuned Prime Cement Spacer | TUNED PRIME CEMENT SPACER SYS | 50 | bbl | 11.5 | 3.74 | 23.65 | 6 | 1775 |

| 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 | ElastiCem | SBM CEM ELASTICEM™ SYS | 575 | sack | 13 | 1.66 | 8.23 | 9 | 4735 |

| 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 | IsoBond(tm) | SBM CEM FDP-C1371 SYS | 860 | sack | 13 | 1.55 | 7.14 | 9 | 6140 |

| 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 | ElastiCem | SBM CEM ELASTICEM™ SYS | 1510 | sack | 13.2 | 1.59 | 7.78 | 9 | 11747 |

| 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 | MMCR Displacement | MMCR Displacement | 409 | bbl | 8.33 | | | 10 | 17178 |

**Comment** Total fresh water used-1050bbls

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

| Seq. No. | Activity | Date | Time | Dwnhole Density (ppg) | Cmb Pump Rate (bbl/min) | Pump A Pressure (psi) | Cmb Stg Total (bbl) | Comments |
|---|---|---|---|---|---|---|---|---|
| 1 | Call Out | 11/20/2022 | 00:00:00 | | | | | Called out by service coordinator for OL time of 0800. |
| 2 | Pre-Convoy Safety Meeting | 11/20/2022 | 04:45:00 | | | | | 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 | 11/20/2022 | 05:00:00 | | | | | Depart from service center or other job site. |
| 4 | Arrive at Location from Service Center | 11/20/2022 | 06:00:00 | | | | | Upon arrival to location, signed in with onsite safety personnel. Met with company man and discussed job specific requirements and specifications. |
| 5 | Other | 11/20/2022 | 06:05:00 | | | | | Mix water test results- PH-7, Chlo-0, Temp-65F. |
| 6 | Pre-Rig Up Safety Meeting | 11/20/2022 | 06:15:00 | | | | | 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. |
| 7 | Rig-Up Equipment | 11/20/2022 | 06:30:00 | | | | | Begin rig up with crew. |
| 8 | Rig-Up Completed | 11/20/2022 | 07:30:00 | | | | | Complete rig up for job to nearest point before red zone. |
| 9 | Safety Meeting - Pre Job | 11/20/2022 | 10:00:00 | 0.00 | 0.00 | 46.08 | 0.00 | Held job specific hazards as well as confirming job procedure with co man and rest of crew associated with job. |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 10 | Start Job | 11/20/2022 | 10:39:19 | 8.46 | 0.00 | -1.41 | 0.00 | TD-18463', OH-8.5", TP-18452' 5.5" 17#, FC-18447', TVD-8049', SURF-3604' 9.625" 40#, MUD 9.4# |
| 11 | Drop Bottom Plug | 11/20/2022 | 10:41:01 | 8.67 | 3.02 | 170.16 | 1.71 | Dropped by HES supervisor, witnessed by company man. |
| 12 | Test Lines | 11/20/2022 | 10:41:28 | 8.71 | 0.00 | 382.83 | 2.07 | Pumped 5bbls fresh water to fill lines at 4bpm 320psi, shut manifold, and performed 500psi k/o function test, followed with 5th gear stall at 1800psi, proceeded to bring pressure to 5000psi, pressure stabilized and held with no leaks. |
| 13 | Pump Spacer 1 | 11/20/2022 | 10:47:15 | 8.22 | 0.00 | 325.54 | 0.00 | Pumped 50bbls of 11.5# 3.74y 23.64g/s FDP Spacer with 10g D-air at 6bpm 447psi. |
| 14 | Check Weight | 11/20/2022 | 10:51:02 | 11.58 | 4.31 | 1047.35 | 10.94 | Weight verified with pressurized mud scales. |
| 15 | Pump Cap Cement | 11/20/2022 | 10:56:42 | 11.51 | 7.54 | 1002.37 | 43.99 | Pumped 575sks or 170bbls of 13# 1.66y 8.23g/s Elasticem at 9bpm 498psi. Calc mix gal=4732g |
| 16 | Check Weight | 11/20/2022 | 11:07:45 | 13.10 | 9.06 | 1073.48 | 93.70 | Weight verified with pressurized mud scales. |
| 17 | Check Weight | 11/20/2022 | 11:09:07 | 12.97 | 8.94 | 1002.51 | 105.94 | Weight verified with pressurized mud scales. |
| 18 | Pump Lead Cement | 11/20/2022 | 11:17:14 | 13.08 | 9.32 | 937.97 | 0.08 | Pumped 860sks 237bbls 13# 1.55y 7.14g/s Gasstop at 9bpm 1000psi. Calc mix gal=6140g |
| 19 | Pump Tail Cement | 11/20/2022 | 11:45:56 | 12.77 | 9.09 | 1247.58 | 0.08 | Pumped 1510sks or 428bbls 13.2# 1.59y 7.78g/s Elasticem at 9bpm 950psi. Calculated mix gal=11748g. |
| 20 | Check Weight | 11/20/2022 | 11:48:19 | 13.30 | 9.16 | 1014.35 | 21.75 | Weight verified with pressurized mud scales. |
| 21 | Shutdown | 11/20/2022 | 12:38:35 | 13.74 | 0.00 | 52.22 | 463.17 | Shutdown, washed up through pumps and lines with fresh water. Pumped total of 20bbls until clean. |
| 22 | Drop Top Plug | 11/20/2022 | 12:55:02 | 8.51 | 0.00 | -15.07 | 0.00 | Dropped by HES supervisor, witnessed by company man. |
| 23 | Pump Displacement | 11/20/2022 | 12:55:04 | 8.51 | 0.00 | -14.57 | 0.00 | Pumped 409bbls fresh water at 10bpm. |
| 24 | Other | 11/20/2022 | 13:53:14 | 8.72 | 0.00 | 3282.14 | 408.04 | Released pressure and got 5bbls back. Floats held. |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 25 | End Job | 11/20/2022 | 13:54:29 | 8.78 | 0.00 | -19.71 | 408.04 | Got 70bbls Cement to surface. Est TOT-7962', TOL-2328'. Total fresh water used-1050bbls |
| 26 | Pre-Rig Down Safety Meeting | 11/20/2022 | 14:00:00 | 9.08 | 0.00 | -30.05 | 408.04 | 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. |
| 27 | Rig Down Lines | 11/20/2022 | 14:15:00 | | | | | Begin rig down |
| 28 | Rig-Down Completed | 11/20/2022 | 16:00:00 | | | | | Rig down complete with no injuries, spills or damage to equipment. |
| 29 | Pre-Convoy Safety Meeting | 11/20/2022 | 16:15:00 | | | | | Held safety meeting with convoy, discussed trip hazards, directions and all crew fit for duty prior to departure. |
| 30 | Depart Location for Service Center or Other Site | 11/20/2022 | 16:30:00 | | | | | Depart location, if applicable journey will be submitted. |

# 3.0 Attachments

## 3.1 Real Time iCem Job Chart