

The Road to Excellence Starts with Safety

| | | | |
|---|------------------------|----------------------------------|----------------------------|
| Sold To #: 345242 | Ship To #: 3919174 | Quote #: | Sales Order #: 0905790248 |
| Customer: NOBLE ENERGY INC-EBUS | | Customer Rep: Chris Ewing | |
| Well Name: GUTTERSEN STATE | | Well #: D23-731 | API/UWI #: 05-123-48624-00 |
| Field: WATTENBERG | City (SAP): KEENESBURG | County/Parish: WELD | State: COLORADO |
| Legal Description: SW SE-23-3N-64W-761FSL-1511FEL | | | |
| Contractor: H & P DRLG | | Rig/Platform Name/Num: H & P 517 | |
| Job BOM: 7523 7523 | | | |
| Well Type: HORIZONTAL OIL | | | |
| Sales Person: HALAMERICA\HB31357 | | Srvc Supervisor: Nicholas Roles | |

Job

| | | | |
|------------------------|---------|--|-------------------|
| Formation Name | | | |
| Formation Depth (MD) | Top | | Bottom |
| Form Type | | | BHST 230 degF |
| Job depth MD | 17525ft | | 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 | 1937 | 0 | 1937 |
| Casing | | 5.5 | 4.892 | 17 | | | 0 | 17525 | 0 | 7260 |
| Open Hole Section | | | 8.5 | | | | 1937 | 17538 | 1937 | 7260 |

Tools and Accessories

| Type | Size in | Qty | Make | Depth ft | Type | Size in | Qty | Make |
|--------------|---------|-----|------|----------|----------------|---------|-----|------|
| Guide Shoe | 5.5 | | | 17525 | Top Plug | 5.5 | 1 | HES |
| Float Shoe | 5.5 | | | | Bottom Plug | 5.5 | 2 | HES |
| Float Collar | 5.5 | | | 17478 | 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 ft ³ /sack | Mix Fluid Gal | Rate bbl/min | Total Mix Fluid Gal |
| 1 | 11.5 lb/gal Tuned Spacer III | Tuned Spacer III | 120 | bbl | 11.5 | 3.79 | | 8 | |
| 36.09 gal/bbl | | FRESH WATER | | | | | | | |
| 1 lbm/bbl | | FE-2 (100001615) | | | | | | | |

| | |
|----------------|---|
| 148.31 lbm/bbl | BARITE, BULK (100003681) |
| 0.60 gal/bbl | DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665) |
| 0.60 gal/bbl | MUSOL(R) A, 5 GAL PAIL (100064220) |

| 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 | ELASTICEM (TM) SYSTEM | 140 | sack | 13.2 | 1.68 | | 8 | 8.04 |
| 8.04 Gal | | FRESH WATER | | | | | | | |
| 0.95 % | | SCR-100 (100003749) | | | | | | | |

| 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 | ElastiCem w/ SCBL | ELASTICEM (TM) SYSTEM | 501 | sack | 13.2 | 1.68 | | 8 | 8.06 |
| 0.60 % | | SCR-100 (100003749) | | | | | | | |
| 8.06 Gal | | FRESH WATER | | | | | | | |

| 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 | NeoCem NT1 | NeoCem TM | 1164 | sack | 13.2 | 2.04 | | 8 | 9.75 |

| 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 | Displacement | 406 | bbl | 8.33 | | | 10 | |

| | | | | | |
|----------------------------|---------------|---------------------|-----------------|------------------------|----------|
| Cement Left In Pipe | Amount | 47 ft | Reason | Shoe Joint | |
| Mix Water: | pH 06 | Mix Water Chloride: | 0 ppm | Mix Water Temperature: | 60 °F °C |
| Cement Temperature: | ## °F °C | Plug Displaced by: | 8.33 lb/gal | Disp. Temperature: | 60 °F °C |
| Plug Bumped? | Yes | Bump Pressure: | 2600 psi MPa | Floats Held? | Yes |
| Cement Returns: | ## bbl m3 | Returns Density: | ## lb/gal kg/m3 | Returns Temperature: | ## °F °C |

Comment Got 25bbls interface to surface. Estimated TOCap-2475', TOL-3505', TOT-7182'

2.0 Real-Time Job Summary

2.1 Job Event Log

| Type | Seq. No. | Activity | Graph Label | Date | Time | Source | Comb Pump Rate <i>(bbl/min)</i> | DH Density <i>(ppg)</i> | DS Pump Press <i>(psi)</i> | Pump Stg Tot <i>(bbl)</i> | Comments |
|-------|----------|--|--|-----------|----------|--------|------------------------------------|----------------------------|-------------------------------|------------------------------|---|
| Event | 1 | Check Floats | Call Out | 6/27/2019 | 12:00:00 | USER | | | | | Called out by Service Coordinator for O/L at 1900 |
| Event | 2 | Pre-Convoy Safety Meeting | Pre-Convoy Safety Meeting | 6/27/2019 | 17:45:00 | USER | | | | | Held meeting with all personnel in convoy to discuss directions and hazards associated with drive, all fit to drive. |
| Event | 3 | Depart from Service Center or Other Site | Depart from Service Center or Other Site | 6/27/2019 | 18:00:00 | USER | | | | | Journey Management prior to departure |
| Event | 4 | Arrive at Location from Service Center | Arrive at Location from Service Center | 6/27/2019 | 18:45:00 | USER | | | | | Upon arrival met with company man to discuss job details and calculations, performed hazard hunt and site assessment. |
| Event | 5 | Pre-Rig Up Safety Meeting | Pre-Rig Up Safety Meeting | 6/27/2019 | 19:00:00 | USER | | | | | Discussed rigging up hazards and procedure according to HMS. |
| Event | 6 | Other | Other | 6/27/2019 | 19:15:00 | USER | | | | | Water test- PH-6, Chlor-0, Temp-65. Cement temp-65. |
| Event | 7 | Pre-Job Safety Meeting | Pre-Job Safety Meeting | 6/27/2019 | 22:00:00 | USER | | | | | Held safety meeting with all job associated personnel to discuss job procedure, hazards and stop work authority. |
| Event | 8 | Start Job | Start Job | 6/28/2019 | 00:37:34 | COM4 | 0.00 | 8.29 | 16.00 | 0.00 | TD-17538', TP-17525' 5.5" 17#, FC-17478', TVD-7260', SURF-1937' 9.625" 36#, OH-8.5" MUD-9.6# |
| Event | 9 | Drop Bottom Plug | Drop Bottom Plug | 6/28/2019 | 00:38:50 | COM4 | 2.90 | 8.33 | 110.00 | 2.20 | Dropped by HES supervisor, witnessed by company man. |
| Event | 10 | Test Lines | Test Lines | 6/28/2019 | 00:39:28 | COM4 | 0.00 | 8.33 | 164.00 | 3.10 | 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 4500psi test on line. Held pressure, no leaks. Bled off pressure, pumped 1bbl to ensure lines still full and closed valve. Proceeded to bring pressure to 3000psi on Kelly line, pressure stabilized and held with no leaks.

| | | | | | | | | | | | |
|-------|----|------------------|------------------|-----------|----------|------|------|-------|-------|-------|--|
| Event | 11 | Pump Spacer 1 | Pump Spacer 1 | 6/28/2019 | 00:51:41 | COM4 | 0.00 | 8.32 | 53.00 | 5.00 | Pumped approx 40bbbls of Tuned Spacer III 11.5# 3.79y 23.5g/s with 5g musol A and 5g Dual Spacer B. |
| Event | 12 | Shutdown | Shutdown | 6/28/2019 | 01:30:44 | USER | 0.00 | 11.40 | 20.00 | 44.10 | Flow meter on pump 9145 was not working, tried to diagnose and pull apart to check on condition or if something was blocking meter. Lines were clear and meter would work at high rate through inside water but as soon as we went to mix it was jumping from 40gpm to 280gpm. When we went to hand mix it was showing no water flow through meter. Decided that would be best interest to get a proper working truck and not guess what flow we were getting. Rig rolled approx. 20bbbls of interface spacer to pits. |
| Event | 13 | Start Job | Start Job | 6/28/2019 | 04:26:00 | COM4 | | | | | Called for new pump and 60bbbls of spacer, when arrived we retested lines batched up new spacer and began pumping. About 3.5 hours NPT |
| Event | 14 | Pump Spacer 1 | Pump Spacer 1 | 6/28/2019 | 05:03:49 | COM4 | | | | | Pumped 120bbbls Tuned Spacer III 11.5# 3.79y 23.5g/s with 70g Musol A, 70g Dual Spacer B and 10g D-Air at 8bpm 540psi. |
| Event | 15 | Drop Bottom Plug | Drop Bottom Plug | 6/28/2019 | 05:04:22 | USER | | | | | Dropped by HES supervisor, witnessed by company man. |

| | | | | | | | |
|-------|----|-------------------|-------------------|-----------|----------|------|---|
| Event | 16 | Pump Lead Cement | Pump Lead Cement | 6/28/2019 | 05:22:03 | COM4 | Pumped 140sks or 41.9bbls Elasticem w/o CBL 13.2# 1.68y 8.04g/s at 8bpm 590psi. |
| Event | 17 | Drop Bottom Plug | Drop Bottom Plug | 6/28/2019 | 05:24:31 | COM4 | Dropped by HES supervisor, witnessed by company man. |
| Event | 18 | Check Weight | Check Weight | 6/28/2019 | 05:27:51 | COM4 | Weight verified with pressurized mud scales. |
| Event | 19 | Pump Cement | Pump Cement | 6/28/2019 | 05:32:53 | COM4 | Pumped 501sks or 150bbls Elasticem w/CBL 13.2# 1.68y 8.06g/s at 8bpm 550psi. |
| Event | 20 | Check Weight | Check Weight | 6/28/2019 | 05:36:43 | COM4 | Weight verified with pressurized mud scales. |
| Event | 21 | Pump Tail Cement | Pump Tail Cement | 6/28/2019 | 05:54:34 | COM4 | Pumped 1164sks or 423bbls 13.2# 2.04y 9.75g/s Neocem at 8bpm 700psi. |
| Event | 22 | Check Weight | Check Weight | 6/28/2019 | 06:03:56 | COM4 | Weight verified with pressurized mud scales. |
| Event | 23 | Check Weight | Check Weight | 6/28/2019 | 06:20:17 | COM4 | Weight verified with pressurized mud scales. |
| Event | 24 | Check Weight | Check Weight | 6/28/2019 | 06:37:00 | COM4 | Weight verified with pressurized mud scales. |
| Event | 25 | Shutdown | Shutdown | 6/28/2019 | 06:53:33 | COM4 | Shutdown, rig blew air through lines to pits, followed with 5bbls fresh water through pumps and lines. |
| Event | 26 | Drop Top Plug | Drop Top Plug | 6/28/2019 | 07:03:15 | COM4 | Dropped by HES supervisor, witnessed by company man. |
| Event | 27 | Pump Displacement | Pump Displacement | 6/28/2019 | 07:03:20 | COM4 | Pumped 406bbls fresh water with 10g MMCR in first 20bbls, 20g Algicide throughout. |
| Event | 28 | Bump Plug | Bump Plug | 6/28/2019 | 07:48:00 | COM4 | Slowed down to 3bpm at 380bbls away, final circulating pressure-2000psi, Bump pressure-2510psi. Held for 5min test. |

| | | | | | | | |
|-------|----|--|--|-----------|----------|------|--|
| Event | 29 | Check Floats | Check Floats | 6/28/2019 | 07:54:05 | USER | Released pressure and got 4.75bbbls fresh water to truck, floats held. |
| Event | 30 | End Job | End Job | 6/28/2019 | 07:56:55 | COM4 | Got 25bbbls interface to surface. Estimated TOCap-2475', TOL-3505', TOT-7182' |
| Event | 31 | Pre-Rig Down Safety Meeting | Pre-Rig Down Safety Meeting | 6/28/2019 | 08:00:00 | USER | Discussed rigging down hazards and procedure according to HMS with all HES personnel |
| Event | 32 | Safety Meeting - Departing Location | Safety Meeting - Departing Location | 6/28/2019 | 09:45:00 | USER | Held meeting with all personnel in convoy to discuss directions and hazards associated with drive, all fit to drive. |
| Event | 33 | Depart Location for Service Center or Other Site | Depart Location for Service Center or Other Site | 6/28/2019 | 10:00:00 | USER | Pre journey management prior to departure. |

3.0 Attachments

3.1 Guttersen State D23-731-Custom Results (1).png

