

The Road to Excellence Starts with Safety

| | | | | | | | | | | |
|--|-------------------|---------------------------|------------------------|---|-----------------------------------|----------------------------------|------------------|---------------------|-------------------|----------------------|
| Sold To #: 345242 | | Ship To #: 3925792 | | Quote #: | | Sales Order #: 0906864308 | | | | |
| Customer: NOBLE ENERGY INC-EBUS | | | | Customer Rep: Charles Culver | | | | | | |
| Well Name: GUTTERSEN | | | Well #: D09-755 | | API/UWI #: 05-123-48951-00 | | | | | |
| Field: WATTENBERG | | City (SAP): KERSEY | | County/Parish: WELD | | State: COLORADO | | | | |
| Legal Description: SE SW-33-4N-64W-467FSL-1539FWL | | | | | | | | | | |
| Contractor: H & P DRLG | | | | Rig/Platform Name/Num: H & P 517 | | | | | | |
| Job BOM: 7523 | | | | | | | | | | |
| Well Type: HORIZONTAL OIL | | | | | | | | | | |
| Sales Person: HALAMERICA\HX41066 | | | | Srvc Supervisor: Vaughn Oteri | | | | | | |
| Job | | | | | | | | | | |
| | | | | | | | | | | |
| Formation Name | | | | | | | | | | |
| Formation Depth (MD) | | Top | | Bottom | | | | | | |
| Form Type | | | | BHST | | 220 degF | | | | |
| Job depth MD | | 17351ft | | 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 | 1928 | 0 | 1928 |
| Casing | | 5.5 | 4.892 | 17 | | | 0 | 17351 | 0 | |
| Open Hole Section | | | 8.5 | | | | 1928 | 17362 | | 6811 |
| Centralizers: 321 - 227 8"/ 93 8.5" | | | | | | | | | | |
| | | | | | | | | | | |
| Tools and Accessories | | | | | | | | | | |
| Type | Size in | Qty | Make | Depth ft | | Type | Size in | Qty | Make | |
| Float Shoe | 5.5 | | | 17351 | | Top Plug | 5.5 | 1 | HES | |
| Float Collar | 5.5 | | | 17307 | | Bottom Plug | 5.5 | 2 | HES | |
| | | | | | | | | | | |
| | | | | | | | | | | |

| Fluid Data | | | | | | | | | |
|--|-------------------|---------------------------|-------|---------|---------------------------|-------------------|------------------|-----------------|------------------------|
| Stage #: 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 | TUNED PRIME CEMENT SPACER | 120 | bbl | 11.5 | 3.7 | | 6.0 | |
| | | | | | | | | | |
| 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 | 1.6 | 7.63 | 6.0 | 1068 |
| | | | | | | | | | |
| 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 | 710 | sack | 13.2 | 1.67 | 8.03 | 8 | 5701 |
| | | | | | | | | | |
| 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 | 9.79 | 8 | 11396 |
| | | | | | | | | | |
| 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 | 401 | bbl | 8.33 | | | 10 | |
| | | | | | | | | | |
| | | | | | | | | | |
| Cement Left In Pipe | | Amount | 44 ft | | Reason | | | Shoe Joint | |
| Comment 120bbl of spacer back 30bbl of cement. | | | | | | | | | |

2.0 Real-Time Job Summary

2.1 Job Event Log

| Type | Seq. No. | Activity | Graph Label | Date | Time | Source | Dwnhole Density (ppg) | Pump B Pressure (psi) | Cmb Pump Rate (bbl/min) | Cmb Stg Total (bbl) | Mix Wtr Stg Tot (bbl) | Comments |
|-------|----------|--|--|------------|----------|--------|--------------------------|--------------------------|----------------------------|------------------------|--------------------------|--|
| Event | 1 | Pump Spacer | Call Out | 12/13/2020 | 02:00:00 | USER | | | | | | Call out from ARC hub. |
| Event | 2 | Pre-Convoy Safety Meeting | Pre-Convoy Safety Meeting | 12/13/2020 | 04:30:00 | USER | | | | | | Held pre-Convoy meeting with all HES drivers to discuss driving direction sand hazards. |
| Event | 3 | Depart from Service Center or Other Site | Depart from Service Center or Other Site | 12/13/2020 | 05:00:00 | USER | | | | | | Depart from Ft. Lupton co HES yard. |
| Event | 4 | Arrive At Loc | Arrive At Loc | 12/13/2020 | 05:30:00 | USER | | | | | | Arrived on location met with company rep to discuss job process and concerns. |
| Event | 5 | Start Job | Start Job | 12/13/2020 | 13:23:07 | NONE | 8.62 | -20.60 | 1.62 | 0.24 | 0.00 | Held pre-job safety meeting with all hands on location to discuss job process and hazards. |
| Event | 6 | Test Lines | Test Lines | 12/13/2020 | 13:30:09 | NONE | 8.31 | 74.78 | 0.00 | 0.00 | 1.14 | Pressure tested HES Pumps and lines with fresh water, 4820psi found no leaks and pressure held good. |
| Event | 7 | Test Lines | Test Lines | 12/13/2020 | 13:34:17 | NONE | 8.22 | -44.05 | 0.00 | 0.03 | 1.14 | Pressure tested IBOP with fresh water, 1730 Pressure held good. |
| Event | 8 | Drop Bottom Plug | Drop Bottom Plug | 12/13/2020 | 13:38:51 | NONE | 8.23 | -24.84 | 0.00 | 1.25 | 1.14 | Released bottom plug witnessed by company rep |
| Event | 9 | Pump Spacer | Pump Spacer | 12/13/2020 | 13:38:52 | USER | 8.23 | -29.74 | 0.00 | 1.25 | 1.14 | Mixed and pumped 120bbl of 11.5ppg Y-3.7 G/sk-23.55 Tuned Prime spacer 6.0bpm 730psi |
| Event | 10 | Drop Bottom Plug | Drop Bottom Plug | 12/13/2020 | 14:11:26 | NONE | 12.22 | 43.61 | 2.84 | 132.54 | 100.45 | Released plug witnessed by company rep |
| Event | 11 | Check Weight | Check Weight | 12/13/2020 | 14:20:34 | NONE | 11.53 | 24.78 | 0.00 | 0.00 | 4.33 | Confirmed weight on scales |

| | | | | | | | | | | | | |
|-------|----|------------------|------------------|------------|----------|------|-------|---------|------|--------|--------|--|
| Event | 12 | Pump Cement | Pump Cement | 12/13/2020 | 14:21:08 | NONE | 11.52 | 25.12 | 0.00 | 0.00 | 0.00 | Mixed and pumped 40bbbls of 13.2ppg Y1.6 G/sk-7.63 ElastiCem™ at 6.0bpm 200psi |
| Event | 13 | Pump Lead Cement | Pump Lead Cement | 12/13/2020 | 14:31:47 | NONE | 13.71 | 293.85 | 7.83 | 2.37 | 1.23 | Mixed and pumped 710sk or 211bbbls of 13.2ppg Y-1.67 G/sk-8.03 ElastiCem™ at 8.0bpm 443psi |
| Event | 14 | Check Weight | Check Weight | 12/13/2020 | 15:04:51 | NONE | 13.14 | 289.27 | 8.01 | 268.61 | 146.60 | Confirm weight of 13.2ppg on scales |
| Event | 15 | Pump Tail Cement | Pump Tail Cement | 12/13/2020 | 15:08:29 | NONE | 12.91 | 322.48 | 8.22 | 0.47 | 0.28 | Mixed and pumped 1164sk or 422bbbls of 13.2ppg Y-2.04 g/sk-9.79 NeoCem™ at 8.0bpm 630psi |
| Event | 16 | Check Weight | Check Weight | 12/13/2020 | 15:12:17 | NONE | 13.17 | 422.03 | 8.14 | 31.36 | 18.77 | Confirmed weight of 13.2ppg on scales |
| Event | 17 | Check Weight | Check Weight | 12/13/2020 | 15:40:28 | NONE | 13.23 | 574.65 | 9.10 | 282.29 | 173.57 | Confirmed weight of 13.2ppg on scales |
| Event | 18 | Shutdown | Shutdown | 12/13/2020 | 16:07:58 | NONE | 13.26 | 29.84 | 0.00 | 0.00 | 0.00 | Shut down to wash up |
| Event | 19 | Clean Lines | Clean Lines | 12/13/2020 | 16:08:45 | NONE | 13.26 | 28.23 | 0.00 | 0.00 | 0.00 | Washed pumps and lines with fresh water. |
| Event | 20 | Drop Top Plug | Drop Top Plug | 12/13/2020 | 16:14:21 | NONE | 8.41 | 14.28 | 0.00 | 22.53 | 17.77 | Released top plug witnessed by company rep. |
| Event | 21 | Bump Plug | Bump Plug | 12/13/2020 | 17:04:41 | NONE | 8.20 | 2794.90 | 0.00 | 391.92 | 397.42 | Bumped plug 500psi over final pump pressure. FCP = 2043psi bumped to 2949 psi |
| Event | 22 | Other | Other | 12/13/2020 | 17:09:07 | NONE | 8.12 | 2948.50 | 0.00 | 0.00 | 0.00 | Released pressure back to the pump truck to check floats. 5.5bbbls back floats held good. |
| Event | 23 | End Job | End Job | 12/13/2020 | 17:14:10 | NONE | 7.91 | -21.06 | 0.00 | 0.00 | 0.02 | ES meter started reading low, rig diverted at 250 away in displacement, 120bbbls of spacer and 30bbbls of contaminated cement back to surface, sample was taken just before bump plug, scaled at 12.0ppg |

3.0 Attachments

3.1 Job Chart

