

# HALLIBURTON

iCem<sup>®</sup> Service

## **EXTRACTION OIL & GAS**

Date: Monday, February 19, 2018

### **Coyote Trails 34S-20-10N Surface**

Job Date: Wednesday, February 07, 2018

Sincerely,

**Bryce Hinsch**

## 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 **Coyote Trails 34S-20-10N** cement **surface** 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 33 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]**

*The Road to Excellence Starts with Safety*

|   |                   |                           |                           |   |                                   |                                  |                               |                       |                      |                      |                            |
|---|-------------------|---------------------------|---------------------------|---|-----------------------------------|----------------------------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------------|
| <b>Sold To #:</b> 369404                                  |                   | <b>Ship To #:</b> 3843032 |                           | <b>Quote #:</b>                             |                                   | <b>Sales Order #:</b> 0904613744 |                               |                       |                      |                      |                            |
| <b>Customer:</b> EXTRACTION OIL & GAS -                   |                   |                           |                           | <b>Customer Rep:</b> KALYN HOLGATE          |                                   |                                  |                               |                       |                      |                      |                            |
| <b>Well Name:</b> COYOTE TRAILS                           |                   |                           | <b>Well #:</b> 34S-20-10N |   | <b>API/UWI #:</b> 05-123-45994-00 |                                  |                               |                       |                      |                      |                            |
| <b>Field:</b> WATTENBERG                                  |                   | <b>City (SAP):</b> ERIE   |                           | <b>County/Parish:</b> WELD                  |                                   | <b>State:</b> COLORADO           |                               |                       |                      |                      |                            |
| <b>Legal Description:</b> SW SE-28-1N-68W-1146FSL-2139FEL |                   |                           |                           |   |                                   |                                  |                               |                       |                      |                      |                            |
| <b>Contractor:</b> Patterson 901                          |                   |                           |                           | <b>Rig/Platform Name/Num:</b> Patterson 901 |                                   |                                  |                               |                       |                      |                      |                            |
| <b>Job BOM:</b> 7521 7521                                 |                   |                           |                           |   |                                   |                                  |                               |                       |                      |                      |                            |
| <b>Well Type:</b> HORIZONTAL OIL                          |                   |                           |                           |   |                                   |                                  |                               |                       |                      |                      |                            |
| <b>Sales Person:</b> HALAMERICA\HX38199                   |                   |                           |                           | <b>Srv Supervisor:</b> Bryce Muir           |                                   |                                  |                               |                       |                      |                      |                            |
| <b>Job</b>  |                   |                           |                           |   |                                   |                                  |                               |                       |                      |                      |                            |
|   |                   |                           |                           |   |                                   |                                  |                               |                       |                      |                      |                            |
| <b>Formation Name</b>                                     |                   |                           |                           |   |                                   |                                  |                               |                       |                      |                      |                            |
| <b>Formation Depth (MD)</b>                               |                   | <b>Top</b>                |                           | <b>Bottom</b>                               |                                   |                                  |                               |                       |                      |                      |                            |
| <b>Form Type</b>  |                   |                           |                           | <b>BHST</b>                                 |                                   |                                  |                               |                       |                      |                      |                            |
| <b>Job depth MD</b>                                       |                   | 1623ft                    |                           | <b>Job Depth TVD</b>                        |                                   |                                  |                               |                       |                      |                      |                            |
| <b>Water Depth</b>  |                   |                           |                           | <b>Wk Ht Above Floor</b>                    |                                   | 3 FT.                            |                               |                       |                      |                      |                            |
| <b>Perforation Depth (MD)</b>                             |                   | <b>From</b>               |                           | <b>To</b>                                   |                                   |                                  |                               |                       |                      |                      |                            |
|   |                   |                           |                           |   |                                   |                                  |                               |                       |                      |                      |                            |
| <b>Well Data</b>  |                   |                           |                           |   |                                   |                                  |                               |                       |                      |                      |                            |
| <b>Description</b>  | <b>New / Used</b> | <b>Size in</b>            | <b>ID in</b>              | <b>Weight lbm/ft</b>                        | <b>Thread</b>                     | <b>Grade</b>                     | <b>Top MD ft</b>              | <b>Bottom MD ft</b>   | <b>Top TVD ft</b>    | <b>Bottom TVD ft</b> |                            |
| Casing  | 0                 | 9.625                     | 8.921                     | 36  | 8 RD                              | J-55                             | 0                             | 1623                  | 0                    | 0                    |                            |
| Open Hole Section   |                   |                           | 13.5                      |   |                                   |                                  | 0                             | 1650                  | 0                    | 0                    |                            |
|   |                   |                           |                           |   |                                   |                                  |                               |                       |                      |                      |                            |
| <b>Tools and Accessories</b>                              |                   |                           |                           |   |                                   |                                  |                               |                       |                      |                      |                            |
| <b>Type</b>   | <b>Size in</b>    | <b>Qty</b>                | <b>Make</b>               | <b>Depth ft</b>                             |                                   | <b>Type</b>                      | <b>Size in</b>                | <b>Qty</b>            | <b>Make</b>          |                      |                            |
| Guide Shoe  | 9.625             |                           |                           |   |                                   | Top Plug                         | 9.625                         | 1                     | HES                  |                      |                            |
| Float Shoe  | 9.625             | 1                         | TOPCO                     | 1623  |                                   | Bottom Plug                      | 9.625                         |                       |                      |                      |                            |
| Float Collar  | 9.625             | 1                         | TOPCO                     | 1581  |                                   | SSR plug set                     | 9.625                         |                       |                      |                      |                            |
| Insert Float  | 9.625             |                           |                           |   |                                   | Plug Container                   | 9.625                         | 1                     | HES                  |                      |                            |
| Stage Tool  | 9.625             |                           |                           |   |                                   | Centralizers                     | 9.625                         | 18                    | TOPCO                |                      |                            |
|   |                   |                           |                           |   |                                   |                                  |                               |                       |                      |                      |                            |
| <b>Fluid Data</b>   |                   |                           |                           |   |                                   |                                  |                               |                       |                      |                      |                            |
| <b>Stage/Plug #: 1</b>                                    |                   |                           |                           |   |                                   |                                  |                               |                       |                      |                      |                            |
| <b>Fluid #</b>  | <b>Stage Type</b> | <b>Fluid Name</b>         |                           |   | <b>Qty</b>                        | <b>Qty UoM</b>                   | <b>Mixing Density lbm/gal</b> | <b>Yield ft3/sack</b> | <b>Mix Fluid Gal</b> | <b>Rate bbl/min</b>  | <b>Total Mix Fluid Gal</b> |
| 1   | Red Dye Spacer    | Red Dye Spacer            |                           |   | 10                                | bbl                              | 8.33                          |                       |                      |                      |                            |

| Fluid # | Stage Type | Fluid Name          | Qty | Qty UoM | Mixing Density<br>lbm/gal | Yield<br>ft3/sack | Mix Fluid<br>Gal | Rate<br>bbl/min | Total Mix Fluid<br>Gal |
|---------|------------|---------------------|-----|---------|---------------------------|-------------------|------------------|-----------------|------------------------|
| 2       | SwiftCem   | SWIFTCM (TM) SYSTEM | 560 | sack    | 13.5                      | 1.74              |                  | 5               | 9.2                    |

9.20 Gal

**FRESH WATER**

| Fluid # | Stage Type  | Fluid Name  | Qty | Qty UoM | Mixing Density<br>lbm/gal | Yield<br>ft3/sack | Mix Fluid<br>Gal | Rate<br>bbl/min | Total Mix Fluid<br>Gal |
|---------|-------------|-------------|-----|---------|---------------------------|-------------------|------------------|-----------------|------------------------|
| 3       | Fresh Water | Fresh Water | 122 | bbl     | 8.33                      |                   |                  |                 |                        |

| Cement Left In Pipe | Amount | Reason | Shoe Joint |
|---------------------|--------|--------|------------|
|                     | 42 ft  |        |            |

Comment: WE ARRIVED ON LOCATION AT 1700 HOURS ON 02/06/2018. WE SPOTTED IN OUR EQUIPMENT AND RIGGED UP OUR IRON. WE WAITED ON LOCATION UNTIL THE CASING WAS RAN. AFTER THE CASING WAS LANDED WE RIGGED UP THE PLUG CONTAINER AND LOADED THE PLUG. WE HELD A SAFETY MEETING BEFORE WE STARTED THE JOB. WE TESTED OUR IRON AND THEN PUMPED FRESH WATER TO BREAK CIRCULATION. IT TOOK 5 BBLS TO BREAK CIRCULATION. WE THEN PUMPED 10 BBLS DYED SPACER FOLLOWED BY 174 BBLS OF CEMENT. TOP PLUG WAS DROPPED BY BRYCE MUIR AND WITNESSED BY COMPANY REP. WE PUMPED 122 BBLS OF DISPLACEMENT. WE GOT 10 BBLS DYE SPACER TO SURFACE FOLLOWED BY 33 BBLS OF GOOD CEMENT. WE LANDED THE PLUG AT 122 BBLS DISPLACEMENT PUMPED. WE LANDED THE PLUG AT 636 PSI AND PRESSURED UP TO 1013 PSI. HELD FOR ONE MINUTE AND CHECKED FLOATS. FLOATS HELD AND WE GOT 1 BBL BACK TO THE RED TIGER.

## 2.0 Real-Time Job Summary

## 2.1 Job Event Log

| Type  | Seq. No. | Activity                                 | Graph Label                              | Date     | Time     | Source | Pass-Side Pump Pressure<br>(psi) | Downhole Density<br>(ppg) | Combined Pump Rate<br>(bbl/min) | Pump Stage Total<br>(bbl) | Comments   |
|-------|----------|--|--|----------|----------|--------|----------------------------------|---------------------------|---------------------------------|---------------------------|--|
| Event | 1        | Call Out                                 | Call Out                                 | 2/6/2018 | 14:00:00 | USER   |                                  |                           |                                 |                           | CREW CALLED OUT TO PERFORM SURFACE CASING JOB FOR EXTRACTION OIL AND GAS.  |
| Event | 2        | Other                                    | Other                                    | 2/6/2018 | 15:00:00 | USER   |                                  |                           |                                 |                           | LOAD UP ALL MATERIALS REQUIRED TO PERFORM JOB. DOWNLOAD ALL NECESSARY PAPERWORK NEEDED TO COMPLETE SURFACE CASING JOB.                   |
| Event | 3        | Pre-Convoy Safety Meeting                | Pre-Convoy Safety Meeting                | 2/6/2018 | 15:45:00 | USER   |                                  |                           |                                 |                           | DISCUSS HAZARDS ASSOCIATED WITH DRIVING TRUCKS TO LOCATION. IDENTIFY SAFEST ROUTE OF TRAVEL, CONVOY ORDER, AND PLACES TO STOP IF NEEDED. |
| Event | 4        | Depart from Service Center or Other Site | Depart from Service Center or Other Site | 2/6/2018 | 16:00:00 | USER   |                                  |                           |                                 |                           |  |
| Event | 5        | Arrive at Location from Service Center   | Arrive at Location from Service Center   | 2/6/2018 | 17:00:00 | USER   |                                  |                           |                                 |                           |  |
| Event | 6        | Assessment Of Location Safety Meeting    | Assessment Of Location Safety Meeting    | 2/6/2018 | 17:05:00 | USER   |                                  |                           |                                 |                           | ASSESS LOCATION TO IDENTIFY POTENTIAL HAZARDS. DISCUSS BEST WAY TO SPOT PUMPING EQUIPMENT. SPOT IN EQUIPMENT.                            |
| Event | 7        | Pre-Rig Up Safety Meeting                | Pre-Rig Up Safety Meeting                | 2/6/2018 | 17:15:00 | USER   |                                  |                           |                                 |                           | DISCUSS HAZARDS ASSOCIATED WITH RIGGING UP AND PACKING IRON ON   |

|  |    |                        |                        |          |          |      |       |      |      |     |  |
|--|----|------------------------|------------------------|----------|----------|------|-------|------|------|-----|--|
| LOCATION. DISCUSSED WALKING SURFACES, LINE OF FIRES, AND PINCH POINTS. |    |                        |                        |          |          |      |       |      |      |     |  |
| Event  | 8  | Rig-Up Equipment       | Rig-Up Equipment       | 2/6/2018 | 17:30:00 | USER |       |      |      |     | RIG UP IRON TO THE RED ZONE.   |
| Event  | 9  | Other                  | Other                  | 2/6/2018 | 18:00:00 | USER |       |      |      |     | WAIT FOR RIG TO FINISH RUNNING CASING.   |
| Event  | 10 | Rig-Up Equipment       | Rig-Up Equipment       | 2/7/2018 | 03:40:00 | USER | 42.30 | 0.00 | 0.00 | 0.0 | PRE LOAD 9.625" TOP PLUG. PLUG LOADED BY BRYCE MUIR AND WITNESSED BY COMPANY MAN. RIG UP PLUG CONTAINER, MANIFOLD, AND PUMPING LINES.  |
| Event  | 11 | Pre-Job Safety Meeting | Pre-Job Safety Meeting | 2/7/2018 | 03:55:55 | USER | 44.30 | 0.00 | 0.00 | 0.0 | DISCUSS HES SAFETY AND JOB PROCEDURES WITH RIG CREW AND COMPANY MAN. IDENTIFY CLOSEST HOSTIPAL, MUSTER AREAS, AND FIRST AID LOCATIONS. DISCUSS JOB PROCEDURE IN DETAIL. DISCUSS QUANTITIES OF FLUIDS TO BE PUMPED. |
| Event  | 12 | Start Job              | Start Job              | 2/7/2018 | 04:05:07 | COM6 | 62.30 | 8.34 | 0.00 | 0.0 |  |
| Event  | 13 | Other                  | Other                  | 2/7/2018 | 04:06:00 | USER | 52.30 | 8.31 | 1.00 | 0.0 | PUMP 3 BBLS FRESH WATER TO FILL PUMPS AND LINES.   |
| Event  | 14 | Test Lines             | Test Lines             | 2/7/2018 | 04:08:43 | COM6 | 87.30 | 8.58 | 0.00 | 3.1 | CONDUCT A LOW PRESSURE TEST TO 500 PSI TO TEST RED TIGER PRESSURE KICKOUTS. CONDUCT A HIGH PRESSURE TEST TO 3000 PSI TO TEST PUMP AND LINES.   |
| Event  | 15 | Pump Spacer 1          | Pump Spacer 1          | 2/7/2018 | 04:17:28 | COM6 | 65.30 | 8.23 | 0.00 | 0.0 | PUMPED FRESH WATER AHEAD TO BREAK  |



|       |    |                   |                   |          |          |      |        |       |      |       |  |
|-------|----|-------------------|-------------------|----------|----------|------|--------|-------|------|-------|--|
|       |    |                   |                   |          |          |      |        |       |      |       | CIRCULATION. WE PUMPED 5 BBLS TO BREAK CIRCULATION. PUMPED AT 3 BPM @ 120 PSI.   |
| Event | 16 | Pump Spacer 2     | Pump Spacer 2     | 2/7/2018 | 04:19:44 | COM6 | 111.30 | 8.32  | 2.50 | 5.1   | PUMPED 10 BBLS OF DYED SPACER. WE PUMPED SPACER AT 3 BPM @ 135 PSI.  |
| Event | 17 | Shutdown          | Shutdown          | 2/7/2018 | 04:23:27 | COM6 | 79.30  | 8.33  | 0.00 | 0.0   | MIX UP CEMENT.   |
| Event | 18 | Pump Cement       | Pump Cement       | 2/7/2018 | 04:24:37 | COM6 | 73.30  | 8.31  | 0.00 | 0.0   | PUMPED 174 BBLS OF PRIMARY CEMENT. 560 SACKS @ 13.5 #/GAL 1.74 CUFT/SK 9.2 GAL/SK. WE PUMPED CEMENT AT 7 1/2 BPM @ 470 PSI. WE HAD GOOD CIRCULATION.   |
| Event | 19 | Check Weight      | Check weight      | 2/7/2018 | 04:25:21 | COM6 | 257.30 | 13.52 | 5.00 | 2.9   | PRIMARY CEMENT VERIFIED BY PRESSURIZED MUD BALANCE.  |
| Event | 20 | Check Weight      | Check weight      | 2/7/2018 | 04:27:09 | COM6 | 236.30 | 13.45 | 5.00 | 11.9  | PRIMARY CEMENT VERIFIED BY PRESSURIZED MUD BALANCE.  |
| Event | 21 | Shutdown          | Shutdown          | 2/7/2018 | 04:53:24 | COM6 | 74.30  | 14.81 | 0.00 | 189.7 |  |
| Event | 22 | Drop Top Plug     | Drop Top Plug     | 2/7/2018 | 04:55:10 | COM6 | 57.30  | 14.63 | 0.00 | 189.7 | DROP 9.625" TOP PLUG. PLUG DROPPED BY BRYCE MUIR AND WITNESSED BY COMPANY MAN.   |
| Event | 23 | Pump Displacement | Pump Displacement | 2/7/2018 | 04:55:45 | COM6 | 71.30  | 13.97 | 1.70 | 0.1   | PUMPED 122 BBLS OF FRESH WATER DISPLACEMENT. WE USED THE FIRST 10 BBLS TO WASH UP ON TOP OF THE PLUG. WE PUMPED DISPLACEMENT AT 8 BPM @ 350 PSI. WE MONITORED RATE AND PRESSURE AS WE PUMPED |

|       |    |                             |                             |          |          |      |        |      |      |       | THE REMAINING<br>DISPLACEMENT.  |
|-------|----|-----------------------------|-----------------------------|----------|----------|------|--------|------|------|-------|---|
| Event | 24 | Displ Reached Cmnt          | Displ Reached Cmnt          | 2/7/2018 | 05:03:00 | USER | 283.30 | 7.82 | 8.00 | 36.0  | TOP PLUG REACHED CEMENT AT 36 BBLS PUMPED. WE GOT DYED SPACER TO SURFACE AT 79 BBLS PUMPED. AT 89 BBLS OF DISPLACEMENT WE GOT CEMENT TO SURFACE. WE GOT 33 BBLS OF CEMENT TO SURFACE. WE BEGAN TO SLOW OUR RATE TO LAND THE PLUG. |
| Event | 25 | Bump Plug                   | Bump Plug                   | 2/7/2018 | 05:16:28 | COM6 | 896.30 | 7.87 | 0.00 | 126.9 | WE LANDED THE PLUG AT 122 BBLS OF DISPLACEMENT PUMPED. WE LANDED THE PLUG AT 4 BPM @ 636 PSI AND PRESSURED UP TO 1013 PSI. WE HELD PRESSURE FOR LESS THAN 1 MINUTE.   |
| Event | 26 | Check Floats                | Check Floats                | 2/7/2018 | 05:16:35 | USER | 971.30 | 7.86 | 0.00 | 126.9 | FLOATS HELD. WE GOT 1 BBL BACK TO THE RED TIGER.  |
| Event | 27 | End Job                     | End Job                     | 2/7/2018 | 05:17:44 | COM6 | 56.30  | 7.84 | 0.00 | 126.9 |   |
| Event | 28 | Pre-Rig Down Safety Meeting | Pre-Rig Down Safety Meeting | 2/7/2018 | 05:30:00 | USER |        |      |      |       | DISCUSS HAZARDS ASSOCIATE WITH RIGGING DOWN AND PACKING IRON ON LOCATION. DISCUSSED WALKING SURFACES, FATIGUE, PINCH POINTS, AND LINE OF FIRES.   |
| Event | 29 | Rig-Down Equipment          | Rig-Down Equipment          | 2/7/2018 | 05:45:00 | USER |        |      |      |       |   |
| Event | 30 | Pre-Convoy Safety Meeting   | Pre-Convoy Safety Meeting   | 2/7/2018 | 06:55:00 | USER |        |      |      |       | DISCUSSED HAZARDS ASSOCIATED WITH DRIVING TRUCKS BACK TO THE SERVICE CENTER.  |

|       |    |  |  |          |          |   |
|-------|----|--|--|----------|----------|---|
|       |    |  |  |          |          | DISCUSSED ROUTE OF TRAVEL, CONVOY ORDER, AND PLACES TO STOP IF NEEDED.  |
| Event | 31 | Depart Location for Service Center or Other Site | Depart Location for Service Center or Other Site | 2/7/2018 | 07:10:00 | USER  |
|       |    |  |  |          |          | JOB WAS COMPLETED SAFELY BY BRYCE MUIR AND CREW. THANK YOU FOR USING HALLIBURTON ENERGY SERVICES. STAY SAFE OUT HERE. |

3.0 Attachments

3.1 Extraction Coyote Trails 34S-20-10N Surface Job Chart

