

**ANADARKO PETROLEUM CORP - EBUS  
DO NOT MAIL - PO BOX 4995  
THE WOODLANDS, Texas**

Lochbuie 4C-13HZ

**Majors 42**

## **Post Job Summary** **Cement Surface Casing**

Prepared for:  
Date Prepared: 12/8/2013  
Version: 1

Service Supervisor: McBride, Nathan

Submitted by: FINNEY, SEAN

**HALLIBURTON**

## ***Wellbore Geometry***

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| Job Tubulars      |                           |         |        |           | MD     |           | Shoe Joint Length<br>ft |
|-------------------|---------------------------|---------|--------|-----------|--------|-----------|-------------------------|
| Type              | Description               | Size in | ID in  | Wt lbm/ft | Top ft | Bottom ft |                         |
| Casing            | 9 5/8" Surface Casing     | 9.63    | 8.921  | 36.00     | 0.00   | 1,269.00  | 44.00                   |
| Open Hole Section | 13 1/2" Open Hole Section |         | 13.500 |           | 0.00   | 1,271.00  | 0.00                    |

# HALLIBURTON

## Pumping Schedule

| Stage / Plug # | Fluid # | Fluid Type    | Fluid Name         | Surface Density lbm/gal | Avg Rate bbl/min | Surface Volume | Downhole Volume |
|----------------|---------|---------------|--------------------|-------------------------|------------------|----------------|-----------------|
| 1              | 1       | Spacer        | Fresh Water Spacer | 8.33                    | 5.00             | 10.0 bbl       | 10.0 bbl        |
| 1              | 2       | Spacer        | Mud Flush          | 8.40                    | 5.00             | 12.0 bbl       | 12.0 bbl        |
| 1              | 1       | Spacer        | Fresh Water Spacer | 8.33                    | 5.00             | 10.0 bbl       | 10.0 bbl        |
| 1              | 3       | Cement Slurry | SwiftCem B2        | 14.20                   | 5.00             | 476.0 sacks    | 476.0 sacks     |

## Fluids Pumped

**Stage/Plug # 1      Fluid 1:**      Fresh Water Spacer  
DUMMY MUD / FLUSH / SPACER SBC MATERIAL

Fluid Density: 8.33 lbm/gal  
Fluid Volume: 10.00 bbl  
Pump Rate: 5.00 bbl/min

**Stage/Plug # 1      Fluid 2:**      Mud Flush  
DUMMY MUD / FLUSH / SPACER SBC MATERIAL  
3.5 lbm/bbl      Mud Flush III  
42 gal/bbl      Mud Flush III

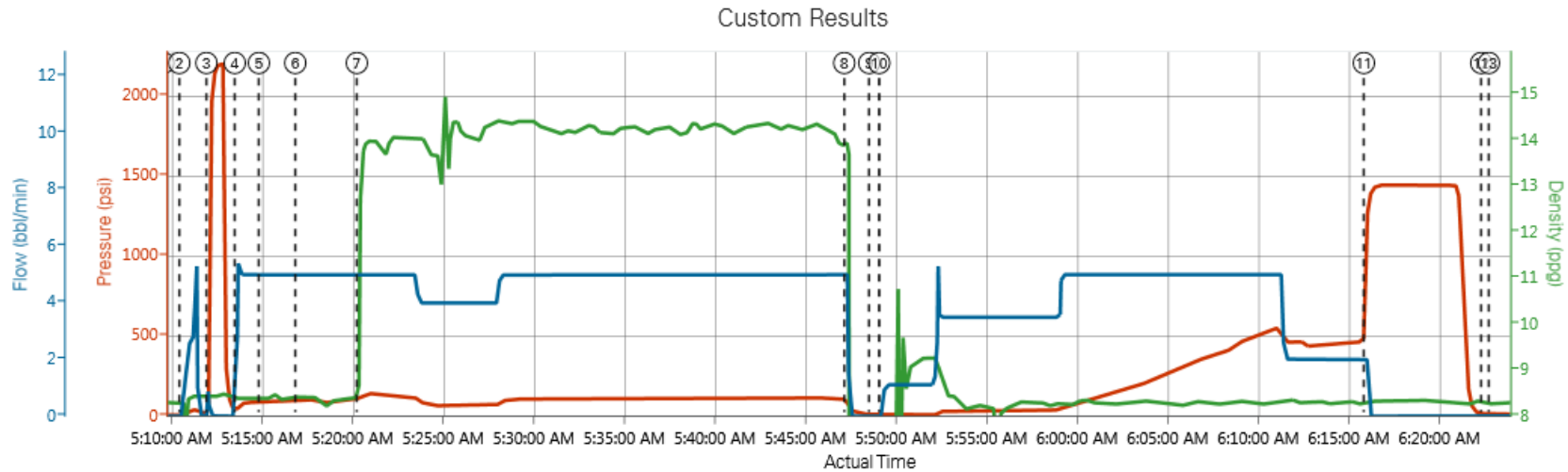
Fluid Density: 8.40 lbm/gal  
Fluid Volume: 12.00 bbl  
Pump Rate: 5.00 bbl/min

**Stage/Plug # 1      Fluid 3:**      SwiftCem B2  
SWIFTCM (TM) SYSTEM

Fluid Weight: 14.20 lbm/gal  
Slurry Yield: 1.53 ft<sup>3</sup>/sack  
Total Mixing Fluid: 7.63 Gal  
Surface Volume: 476.0 sacks  
Sacks: 476.0 sacks  
Calculated Fill: 900.00 ft  
Calculated Top of Fluid: 0.00 ft

# HALLIBURTON

## Data Acquisition



PS Pump Press (psi) DH Density (ppg) Comb Pump Rate (bbl/min)

① start job 7;8.29;0    ④ Spacer FW 56;8.37;5    ⑦ Pump Cement 108;13.05;5    ⑩ Displacement 10;-0.11;0    ⑬ End Job 15;8.28;0  
 ② Fill Lines 7;8.28;0    ⑤ Spacer MF 91;8.37;5    ⑧ Shutdown 105;13.92;5    ⑪ Bump Plug 1255;8.28;1.4  
 ③ Test Lines 1965;8.45;0.1    ⑥ Spacer FW 100;8.45;5    ⑨ DropTop Plug 11;-0.12;0    ⑫ Check Floats 15;8.3;0

# HALLIBURTON

## Service Supervisor Reports

### Job Log

| Date/Time        | Chart # | Activity Code                          | Pump Rate | Cum Vol | Pump |  | Pressure (psig) |        | Comments  |
|------------------|---------|--|-----------|---------|------|--|-----------------|--------|---|
| 11/23/2013 03:30 |         | Arrive at Location from Service Center |           |         |      |  |                 |        | Rig on bottom circulating                           |
| 11/23/2013 03:35 |         | Assessment Of Location Safety Meeting  |           |         |      |  |                 |        | Hazard Hunt and review spotting equipment           |
| 11/23/2013 03:40 |         | Pre-Rig Up Safety Meeting              |           |         |      |  |                 |        | Designate spotters                                  |
| 11/23/2013 03:45 |         | Rig-Up Equipment                       |           |         |      |  |                 |        |   |
| 11/23/2013 04:20 |         | Rig-Up Completed                       |           |         |      |  |                 |        |   |
| 11/23/2013 04:30 |         | Pre-Job Safety Meeting                 |           |         |      |  |                 |        |   |
| 11/23/2013 05:09 |         | Start Job                              |           |         |      |  |                 |        |   |
| 11/23/2013 05:10 |         | Pump Water                             | 2         | 2       |      |  |                 | 80.0   | Fill Lines  |
| 11/23/2013 05:12 |         | Test Lines                             |           |         |      |  |                 | 2256.0 |   |
| 11/23/2013 05:13 |         | Pump Water                             | 5         | 10      |      |  |                 | 80.0   | Fresh Water   |
| 11/23/2013 05:14 |         | Pump Spacer                            | 5         | 12      |      |  |                 | 90.0   | Mud Flush   |
| 11/23/2013 05:16 |         | Pump Water                             | 5         | 10      |      |  |                 | 95.0   | Fresh Water   |
| 11/23/2013 05:20 |         | Pump Cement                            | 5         | 129.7   |      |  |                 | 100.0  | 476sks @ 14.2ppg, 1.53yield, 7.63gal/sk             |
| 11/23/2013 05:47 |         | Shutdown                               |           |         |      |  |                 |        |   |
| 11/23/2013 05:48 |         | Drop Top Plug                          |           |         |      |  |                 |        |   |
| 11/23/2013 05:49 |         | Pump Displacement                      | 5         | 94.7    |      |  |                 | 180.0  | Fresh Water   |
| 11/23/2013 06:10 |         | Cement Returns to Surface              |           |         |      |  |                 |        | 77bbls Displaced Cement to Surface<br>17bbls to Pit |
| 11/23/2013 06:15 |         | Bump Plug                              |           |         |      |  |                 | 320.0  | 1423psi Over  |
| 11/23/2013 06:22 |         | Check Floats                           |           |         |      |  |                 |        | Floats Good   |
| 11/23/2013 06:23 |         | End Job                                |           |         |      |  |                 |        | Thanks McBride and Crew                             |

## The Road to Excellence Starts with Safety

|  |  |                                |   |  |                                |                                    |  |
|--|--|--------------------------------|---|--|--------------------------------|------------------------------------|--|
| <b>Sold To #:</b> 300466                                   |  | <b>Ship To #:</b> 3203183      |   | <b>Quote #:</b>  |                                | <b>Sales Order #:</b><br>900916977 |  |
| <b>Customer:</b> ANADARKO PETROLEUM CORP - EBUS            |  |                                |   | <b>Customer Rep:</b> Heresh, Larry                             |                                |                                    |  |
| <b>Well Name:</b> Lochbuie                                 |  |                                | <b>Well #:</b> 4C-13HZ                  |  | <b>API/UWI #:</b> 05-123-38171 |                                    |  |
| <b>Field:</b>  |  | <b>City (SAP):</b> FORT LUPTON |   | <b>County/Parish:</b> Weld                                     |                                | <b>State:</b> Colorado             |  |
| <b>Lat:</b> N 40.045 deg. OR N 40 deg. 2 min. 43.634 secs. |  |                                |   | <b>Long:</b> W 104.733 deg. OR W -105 deg. 16 min. 2.208 secs. |                                |                                    |  |
| <b>Contractor:</b> Majors                                  |  |                                | <b>Rig/Platform Name/Num:</b> Majors 42 |  |                                |                                    |  |
| <b>Job Purpose:</b> Cement Surface Casing                  |  |                                |   |  |                                |                                    |  |
| <b>Well Type:</b> Development Well                         |  |                                |   | <b>Job Type:</b> Cement Surface Casing                         |                                |                                    |  |
| <b>Sales Person:</b> PLIENESS, RYAN                        |  |                                | <b>Srvc Supervisor:</b> McBride, Nathan |  |                                | <b>MBU ID Emp #:</b> 313810        |  |

## Job Personnel

| HES Emp Name    | Exp Hrs | Emp #  | HES Emp Name | Exp Hrs | Emp # | HES Emp Name | Exp Hrs | Emp # |
|-----------------|---------|--------|--------------|---------|-------|--------------|---------|-------|
| McBride, Nathan | 0.0     | 313810 |              |         |       |              |         |       |

## Equipment

| HES Unit # | Distance-1 way | HES Unit # | Distance-1 way | HES Unit # | Distance-1 way | HES Unit # | Distance-1 way |
|------------|----------------|------------|----------------|------------|----------------|------------|----------------|
|            |                |            |                |            |                |            |                |

## Job Hours

| Date | On Location Hours | Operating Hours | Date | On Location Hours | Operating Hours | Date | On Location Hours | Operating Hours |
|------|-------------------|-----------------|------|-------------------|-----------------|------|-------------------|-----------------|
|      |                   |                 |      |                   |                 |      |                   |                 |

|              |  |  |  |  |  |  |  |  |
|--------------|--|--|--|--|--|--|--|--|
| <b>TOTAL</b> | Total is the sum of each column separately |  |  |  |  |  |  |  |
|--------------|--|--|--|--|--|--|--|--|

## Job

| Formation Name | Formation Depth (MD) | Top | Bottom | Form Type | Job depth MD  | Water Depth       | Perforation Depth (MD) | From | To |
|----------------|----------------------|-----|--------|-----------|---------------|-------------------|------------------------|------|----|
|                |                      |     |        | BHST      | 1271. ft      |                   |                        |      |    |
|                |                      |     |        |           | Job Depth TVD | Wk Ht Above Floor |                        |      |    |
|                |                      |     |        |           | 1. ft         | 5. ft             |                        |      |    |
|                |                      |     |        |           |               |                   |                        |      |    |

## Job Times

| Date            | Time  | Time Zone |
|-----------------|-------|-----------|
| 23 - Nov - 2013 | 00:30 | MST       |
| 23 - Nov - 2013 | 03:30 | MST       |
| 23 - Nov - 2013 | 05:09 | MST       |
| 23 - Nov - 2013 | 06:23 | MST       |
| 23 - Nov - 2013 | 07:10 | MST       |

## Well Data

| Description               | New / Used | Max pressure psig | Size in | ID in | Weight lbm/ft | Thread | Grade | Top MD ft | Bottom MD ft | Top TVD ft | Bottom TVD ft |
|---------------------------|------------|-------------------|---------|-------|---------------|--------|-------|-----------|--------------|------------|---------------|
| 13 1/2" Open Hole Section |            |                   |         | 13.5  |               |        |       | .         | 1271.        |            |               |
| 9 5/8" Surface Casing     | Unknown    |                   | 9.625   | 8.921 | 36.           |        | J-55  | .         | 1269.        |            |               |

Sales/Rental/3<sup>rd</sup> Party (HES)

| Description                            | Qty | Qty uom | Depth | Supplier |
|--|-----|---------|-------|----------|
| CMT CASING EQUIPMENT BOM               | 1   | JOB     |       |          |
| MILEAGE FOR CEMENTING CREW,ZI          | 20  | MI      |       |          |
| ZI FUEL SURCHG-CARS/PICKUPS<1 1/2TON   | 20  | MI      |       |          |
| KIT,HALL WELD-A                        | 1   | EA      |       |          |
| CNTRLZR, 9 5/8"x13 3/4',#500-0963-1375 | 10  | EA      |       |          |
| Description                            | Qty | Qty uom | Depth | Supplier |

| BASKET - CEMENT - 9-5/8 CSG X 12-1/4     |                    |                                       |       |                                   | 1                      | EA                        |                     |              |                        |
|--|--------------------|---------------------------------------|-------|-----------------------------------|------------------------|---------------------------|---------------------|--------------|------------------------|
| PLUG,CMTG,TOP,9 5/8,HWE,8.16 MIN/9.06 MA |                    |                                       |       |                                   | 1                      | EA                        |                     |              |                        |
| COLLAR-STOP-9 5/8"-FRICTION-HINGED       |                    |                                       |       |                                   | 2                      | EA                        |                     |              |                        |
| Fluid Data                               |                    |                                       |       |                                   |                        |                           |                     |              |                        |
| Stage/Plug #: 1                          |                    |                                       |       |                                   |                        |                           |                     |              |                        |
| Fluid #                                  | Stage Type         | Fluid Name                            | Qty   | Qty uom                           | Mixing Density lbm/gal | Yield ft <sup>3</sup> /sk | Mix Fluid Gal/sk    | Rate bbl/min | Total Mix Fluid Gal/sk |
| 1  | Fresh Water Spacer |                                       | 10.00 | bbl                               | 8.33                   |                           |                     | 5.0          |                        |
| 2  | Mud Flush          |                                       | 12.00 | bbl                               | 8.4                    |                           |                     | 5.0          |                        |
| 3.5 lbm/bbl                              |                    | MUD FLUSH III, 40 LB SACK (101633304) |       |                                   |                        |                           |                     |              |                        |
| 42 gal/bbl                               |                    | MUD FLUSH III - SBM (528788)          |       |                                   |                        |                           |                     |              |                        |
| 1  | Fresh Water Spacer |                                       | 10.00 | bbl                               | 8.33                   |                           |                     | 5.0          |                        |
| 3  | SwiftCem B2        | SWIFTCEN (TM) SYSTEM (452990)         | 476.0 | sacks                             | 14.2                   | 1.53                      | 7.63                | 5.0          | 7.63                   |
| 7.63 Gal                                 |                    | FRESH WATER                           |       |                                   |                        |                           |                     |              |                        |
| Calculated Values                        |                    | Pressures                             |       | Volumes                           |                        |                           |                     |              |                        |
| Displacement                             |                    | Shut In: Instant                      |       | Lost Returns                      |                        | Cement Slurry             |                     | Pad          |                        |
| Top Of Cement                            |                    | 5 Min                                 |       | Cement Returns                    |                        | 17                        | Actual Displacement | 94.7         | Treatment              |
| Frac Gradient                            |                    | 15 Min                                |       | Spacers                           |                        | 32                        | Load and Breakdown  | Total Job    |                        |
| Rates                                    |                    |                                       |       |                                   |                        |                           |                     |              |                        |
| Circulating                              |                    | Mixing                                |       | Displacement                      |                        | Avg. Job                  |                     |              |                        |
| Cement Left In Pipe                      |                    | Amount                                | 44 ft | Reason                            | Shoe Joint             |                           |                     |              |                        |
| Frac Ring # 1 @                          | ID                 | Frac ring # 2 @                       | ID    | Frac Ring # 3 @                   | ID                     | Frac Ring # 4 @           | ID                  |              |                        |
| The Information Stated Herein Is Correct |                    |                                       |       | Customer Representative Signature |                        |                           |                     |              |                        |

