

## **CEMENTING LOG**

THANK YOU

BBLS

BLEEDBACK

| Date <b>2/2</b> | /2015 Dist                              | rict <b>Libera</b> | 1 # 21 Tick  | ket No.      | 65424    | Spacer Type   |
|-----------------|---|--------------------|--------------|--------------|----------|---|
| Company         |   | rican Warrior      |              | Duk          | e #5     | Amt. Sks Yield ft³/sk Density PP                              |
|                 |   |                    | We           | II No        | 4-23     |   |
| County          |   |                    | Sta          | tel          | KS       |   |
| Location        |   |                    |              |              |          | LEAD: Time hrs. Type Allied 60/40 Poz                         |
| Field           |   |                    |              |              |          | 4% Premium Gel, 0.125 lb/sk flo seal Excess                   |
| Casing Data     |   | ✓ PTA              |              |              | Misc.    | Amt. 210 Sks Yield 1.5 ft³/sk Density 13.5 PP                 |
|                 | Surface                                 |                    | diate Pr     |              | Liner    | TAIL: Time hrs. Type  |
| Size 8          | 5/8 Typ                                 | e                  | _Weight _    | 24# Collar   |          | Excess  |
|                 |   |                    |              |              |          | Amt. Sks Yield ft³/sk Density PP                              |
|                 |   |                    |              |              |          | WATER Lead Gal/sk Tail Gal/sk Total BBL                       |
| Casing Depth    | ns Top                                  |                    | Bottom       |              |          | Pump Trucks Used: 530-484                                     |
|                 |   |                    |              |              |          | Bulk Equipment 956-841  |
| Drill Pipe:     | BBLS/                                   | LIN. FT            | LIN          | . FT/BBL     |          |   |
| Open Hole:      | BBLS/                                   | LIN. FT            | LIN          | . FI/BBL     |          | Float Equipment: Manufacturer                                 |
| Capacity Fac    | tors: BBLS/                             | LIN. FT            | LIN          | . FT/BBL     |          | Shoe: Type Depth  |
| Casing          | BBLS/                                   | LIN. FT            | LIN          | . FT/BBL     |          | Float: Type Depth   |
| Open Holes      |   | LIN. FT            | LIN          | . FT/BBL     |          | Centralizers: Quantity Plugs Top Bottom                       |
| Drill Pipe      | BBLS/                                   | LIN. FT 0.         | 01422 LIN    | . FT/BBL     |          | Stage Collars   |
| Annulus         | BBLS/                                   | LIN. FT            | LIN          | . FT/BBL     |          | Special Equipment   |
|                 | 100000000000000000000000000000000000000 | LIN. FT            | LIN          | . FT/BBL     |          | Disp: Fluid Type H2O & Mud Amt bbls Weight PP                 |
| Perforations    | From                                    | ft                 | to           | ft Am        | t        | Mud Type Weight 9.5   |
| TIME<br>AM/PM   | DRILL PIPE                              | JRES PSI ANNULUS   | FLU<br>TOTAL | IID PUMPED I | RATE     | REMARKS   |
|                 | CASING                                  | ANNOLOS            | FLUID        | TIME PERIOD  | BBLS/MIN |   |
| 6:00 pm         |   |                    |              |              | -        | Arrive on location  |
| 6:00            |   |                    |              |              |          | Spot equipment and rig up  Rig done going in with drillpipe   |
| 6:55            | -                                       |                    |              |              | -        | Safety meeting  |
| 7:13            |   |                    |              |              |          | 1st plug @1780'   |
| 7:17            | 130                                     |                    | 13           |              | 3        | 50 sks of cmt (13 bbls @13.5)                                 |
| 7:25            | 90                                      |                    | 21           | <b>†</b>     | 3        | 21 bbls of mud displacement                                   |
| 7:32            |   |                    |              |              |          | Come out of hole with drillpipe                               |
| 8:12            |   |                    |              |              |          | 2nd plug @1080'   |
| 8:15            | 90                                      |                    | 13           |              | 3        | 50 sks of cmt (13 bbls @13.5)                                 |
| 8:21            | 90                                      |                    | 12           |              | 3        | 12 bbls of water displacement                                 |
| 8:25            |   |                    |              |              |          | Come out of hole with drillpipe                               |
| 9:00            |   |                    |              |              |          | 3rd plug @500'  |
| 9:03            | 90                                      |                    | 10.5         |              | 3        | 40 sks of cmt (10.5 bbls @13.5)                               |
| 9:08            | 90                                      |                    | 4.5          |              | 3        | 4.5 bbls of water displacement                                |
| 9:11            |   |                    |              |              | -        | Come out of hole with drillpipe                               |
| 9:39            |   |                    |              | -            |          | 4th plug @86'   |
| 9:42            | 90                                      |                    | 5            |              | 3        | 20 sks of cmt (5 bbls @13.5)  Come out of hole with drillpipe |
| 9:44            | -                                       |                    |              |              | +        | Rat & Mouse hole  |
| 9:51            | 00                                      |                    | 13           |              | 2        | 50 sks of cmt (13 bbls @13.5)                                 |
| 9:54            | 90                                      |                    | 13           |              |          | Shutdown / Clean lines and truck                              |
| 10:09           |   |                    |              |              | -        | End job   |
| 10:30           |   |                    |              |              |          | Rig down equipment  |
| 11:30 pm        |   |                    |              |              | 1        | Crew leave location   |
| 11.30 pin       |   |                    |              |              | 1        |   |
|                 |   |                    |              |              | <b>†</b> |   |
|                 |   |                    |              |              |          |   |
|                 |   | 1                  |              |              |          |   |

Na PSI BUMP PLUG TO Na

FINAL DISP. PRESS.



9:40

9:45

9:50

10:35 am

## **CEMENTING LOG**

Bump plug at 530 psi and took it up to 1170 psi. Hold for 4 minutes

| W 10 d  | DIL & GAS SEI                           | VICES, LLC   |  |                           |               |  |  |  |  |
|---|---|--------------|--|---------------------------|---------------|--|--|--|--|
| Data 1/3  | 0/201E Dist                             | trict Libono | 1#21 Tiekes  | No                        | CE #10        | CEMENT DATA  |  |  |  |
|   |   | rict Libera  | Ticket   | 77.                       | 65418<br>te 5 | Spacer Type         Water           Amt.         Sks Yield         ft³/sk Density         8.33         P |  |  |  |
| Lease   |   | Six M        | Well N   |                           | 4-23          | AmtSks fieldit-7sk Density8.33   |  |  |  |
| _   | ı                                       |              |  | _                         | Ks            |  |  |  |  |
|   |   |              |  |                           |               | LEAD: Time hrs. Type ALWC Class A  |  |  |  |
| Field   |   |              |  |                           |               | 6% gel, 0.5 lbs/sk flo-seal, 3% calcium chloride Excess 100%   |  |  |  |
|   | Conducto                                | r PTA        | Sque   | 070                       | Misc.         | Amt. 625 Sks Yield 2 ft³/sk Density 12.46 P  |  |  |  |
| casing Data   | ✓ Surface                               | ☐ Interme    | diate Produ  | ection                    | Liner         | TAIL: Time hrs. Type Class A Common  |  |  |  |
| Sizo 8  |   |              | Weight 2   |                           |               | 3% calcium chloride, 0.25#/sk flo-seal Excess 100%   |  |  |  |
| 5120  | 3/0 1/2                                 |              | _ Weight   | Condi                     |               | Amt. 200 Sks Yield 1.2 ft <sup>s</sup> /sk Density 15.6 P  |  |  |  |
|   |   |              |  |                           |               | WATER Lead 10.9 Gal/sk Tail 5.2 Gal/sk Total 187 Bi  |  |  |  |
| Casing Dept   | hs Top                                  |              | Bottom   | 1752                      | 2.32          | Pump Trucks Used: 531-541  |  |  |  |
| casing ocp  |   | B- B-        |  |                           |               | Bulk Equipment 868-467   |  |  |  |
|   |   |              |  |                           |               | 774-744  |  |  |  |
| Drill Pipe:   | RRISA                                   | LIN. FT      | IIN F  | T/BBL                     |               |  |  |  |  |
| Open Hole:  |   |              |  |                           |               | Float Equipment: Manufacturer  |  |  |  |
| ·   |   |              |  |                           |               |  |  |  |  |
| Capacity Factors: BBLS/LIN. FT LIN. FT/BBL Casing BBLS/LIN. FT 0.0636 LIN. FT/BBL |   |              |  |                           |               | Float: Type AFU FLOAT VALVE Depth  |  |  |  |
| Open Holes  |   |              |  |                           | 13.6037       |  |  |  |  |
| Drill Pipe  |   | LIN. FT      |  |                           | 13.0037       | Stage Collars Cement Basket  |  |  |  |
| Annulus   |   | LIN. FT      | LIN F  | T/RRI                     |               | Special Equipment  |  |  |  |
| Aillidius   | 100000000000000000000000000000000000000 |              | LIN. F   | T/RRI                     |               | Disp: Fluid Type FRESH WATER Amt 109 bbls Weight 8.33 PPG  |  |  |  |
| Perforations  |   | ft 1         | to   | ft Am                     | it            | Mud Type Weight  |  |  |  |
| COMPANY F   | REPRESENTAT                             | IVE          |  |                           |               | CEMENTER Edgar A. Rodriguez  |  |  |  |
| TIME  | T ppress                                | IDEC DOL     | FILLED   | DUBARER                   | DATA          |  |  |  |  |
| TIME  | -                                       | JRES PSI     | The same of the sa | PUMPED I                  | 1             | DEMARKS  |  |  |  |
| AM/PM   | DRILL PIPE<br>CASING                    | ANNULUS      |  | PUMPED PER<br>TIME PERIOD | BBLS/MIN      | REMARKS  |  |  |  |
| 4:50 am   |   |              |  |                           |               | Got to location & spoted trucks  |  |  |  |
| 5:00  |   | -            |  |                           |               | Rig running casing   |  |  |  |
| 6:00  |   |              |  |                           |               | Rig running casing   |  |  |  |
| 7:20  |   |              |  |                           |               | Casing on bottom. Will stab cement head and circulate while we rig up                                    |  |  |  |
| 7:50  |   |              |  |                           |               | Perform safety meeting   |  |  |  |
| 8:00  | 1100                                    |              |  |                           |               | Pressure test lines to 1000 psi  |  |  |  |
| 8:04  | 180                                     |              | 5  |                           | 1             | Pump 5 bbls of fresh water   |  |  |  |
| 8:09  | 220                                     |              | 223  |                           | 6             | Pump 625 sks of lead cmt (223 bbls @12.5)  |  |  |  |
| 8:53  | 280                                     |              | 43   |                           | 5             | Pump 200 sks of tail cmt (43 bbls @15.6)   |  |  |  |
| 9:07  |   |              |  |                           |               | Shutdown / Drop plug   |  |  |  |
| 9:10  | 120                                     |              |  |                           | 5             | Pump 109 bbls of displacement  |  |  |  |
| 9:25  | 200                                     |              | 74   |                           | 5             | Cement back to surface. Total of 35 bbls back  |  |  |  |
| 9:33  | 560                                     |              | 95   |                           | 3             | Slow rate to bump plug   |  |  |  |
| 9:36  | 530                                     |              | 109  |                           | 3             | Bump plug at 530 psi and took it up to 1170 psi. Hold for 4 minutes                                      |  |  |  |

FINAL DISP. PRESS. PSI 530 BUMP PLUG TO 1170 PSI BLEEDBACK 1/4 BBLS THANK YOU

Floats held. 1/4 bbl back

Rig down equipment

Crew leave location

End job. Full circulation during entire job