



Proposed P&A Procedure

Well Name: BILLY 22-45

| | | | | |
|---------------------|-------------------------------------|--------------------------------|-------------------------------|---|
| API 05-123-24111 | Original KB Elevation (ft) 4,650 | Ground Elevation (ft) 4,634 | Total Depth (ftKB) 7,172.0 | Current PBTD (mKB) ORIGINAL HOLE - 7,107.5 |
| Section 22 | Township 5 | Range 65 | County/Parish WELD | State/Province COLORADO |

Casing Strings

| Csg Des | MD (ftKB) | Run Date | Prop Run? | Cut/Pull Date | Proposed Cut/Pull? | Depth Cut/Pull (ftKB) | OD (in) | ID (in) | Grade | Len (ft) |
|------------|-----------|-----------|-----------|---------------|--------------------|-----------------------|---------|---------|-------|----------|
| Surface | 398.0 | 3/31/2007 | No | | No | | 8 5/8 | 8.10 | J-55 | 382.00 |
| Production | 7,147.0 | 4/4/2007 | No | 7/3/2017 | Yes | 598.0 | 4 1/2 | 4.00 | M-80 | 7,131.00 |

Tubing Strings

| Des | Set Depth (ftKB) | Run Date | Prop Run? | String Location | Pull Date | Prop Pull? | Cut/Pull Date | Proposed Cut/Pull? | Depth Cut/Pull (ftKB) |
|---------------------|------------------|-----------|-----------|---|-----------|------------|---------------|--------------------|-----------------------|
| Tubing - Production | 6,960.7 | 6/19/2014 | No | Tubing - Production set at 6,949.0ftKB on 10/3/2007 00:00 | 7/3/2017 | Yes | | No | |

Perforations

| Zone | Type | Date | Prop? | Top (ftKB) | Btm (ftKB) |
|-----------------------|------------|-----------|-------|------------|------------|
| | Perforated | 7/3/2017 | Yes | 2,290.00 | 2,290.00 |
| CODELL, ORIGINAL HOLE | Perforated | 4/30/2007 | No | 6,980.00 | 6,996.00 |

Other In Hole

| Des | Run Date | Prop Run? | Prop Pull? | Top (ftKB) | Btm (ftKB) |
|-----------------------|----------|-----------|------------|------------|------------|
| CICR | 7/3/2017 | Yes | No | 2,188.0 | 2,190.0 |
| Cast Iron Bridge Plug | 7/3/2017 | Yes | No | 6,928.0 | 6,930.0 |

Cement Stages

| Des | Type | Prop? | End Date | Top (ftKB) | Btm (ftKB) |
|--------------------------|--------|-------|-----------|------------|------------|
| Surface Casing Cement | Casing | No | 3/31/2007 | 16.0 | 398.0 |
| Production Casing Cement | Casing | No | 4/5/2007 | 2,620.0 | 7,147.0 |
| DUMP BAIL | Plug | Yes | 7/3/2017 | 6,467.0 | 6,928.0 |
| COURTESY PLUG | Plug | Yes | 7/3/2017 | 2,059.0 | 2,188.0 |
| COURTESY PLUG | Plug | Yes | 7/3/2017 | 2,190.0 | 2,290.0 |
| COURTESY PLUG | Casing | Yes | 7/3/2017 | 1,790.0 | 2,290.0 |
| COURTESY PLUG | Plug | Yes | 7/3/2017 | 598.0 | 648.0 |
| COURTESY PLUG | Plug | Yes | 7/3/2017 | 16.1 | 598.0 |

P&A PROCESS

| | | | | |
|-----------------|------------------------|------------------------|-----------------------------|----------------------------|
| Type Abandon | Sub Type WBI Non-Op | Start Date 7/3/2017 | Engineer SARAH MCDONNELL | Cell Phone 832-247-2575 |
|-----------------|------------------------|------------------------|-----------------------------|----------------------------|

PROCESS STEPS

| Type | Comment | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------|---|-----------------------|---------------------|---------------------------|-----------------------------|---------------------------|-----------------------------|-------------|-------------|-----|--------|-------|-------|-----|-------|-----|-----|-----|-------|-------|-------|---|-------|---|----|--|--|--|--|--|--|--|------------|
| 1) | Perform Form 17 if not done already. If the beginning pressure is greater than 25 psi, any pressure remains at the conclusion of the test, or if liquids were present; call COGCC engineer for sampling requirements. Submit form 17 within 10 days. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2) | MIRU workover rig, pump, and tank. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3) | Blow down well and roll hole with fresh water, if possible. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4) | ND WH, NU BOP. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5) | POOH and stand back tbq. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6) | RU WL and RIH w/ CIBP and set @ 6,930' (50' above Codell top perf). | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7) | RIH w/ workstring and pump 35 sx of Class G Neat cement from top of CIBP to 6467'. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8) | Load hole with fluid and pressure test CIBP to 1000 psi with rig pumps. Hold for 15 minutes. Test will be considered successful if lose less than 100 psi. If test is unsuccessful, contact engineer. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9) | RIH w/ 1' perforating gun and shoot 4-6 spf @ 2,290' (TOC is 2,620'). | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10) | RIH w/ CICR on workstring and set @ 2,190' (100' above perforations). | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11) | Load annulus between production casing and workstring. Test to 500 psi for 15 minutes. Test is considered successful if lose less than 50 psi. If pressure test fails, contact engineer. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12) | Establish injection rate. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13) | Pump 10 bbls Mud Flush (or similar spacer) followed by 200 sx of cement. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Length (ft)</th> <th>OD (in)</th> <th>ID (in)</th> <th>ft³/ft</th> <th>Volume (ft³)</th> <th>Yield (ft³/sk)</th> <th>Cement (sk)</th> <th>Nearest 5sk</th> </tr> </thead> <tbody> <tr> <td>500</td> <td>10.000</td> <td>4.500</td> <td>0.435</td> <td>217</td> <td>1.150</td> <td>189</td> <td>190</td> </tr> <tr> <td>100</td> <td>4.000</td> <td>0.000</td> <td>0.087</td> <td>9</td> <td>1.150</td> <td>8</td> <td>10</td> </tr> <tr> <td colspan="7"></td> <td style="text-align: right;">TOTAL: 200</td> </tr> </tbody> </table> | Length (ft) | OD (in) | ID (in) | ft ³ /ft | Volume (ft ³) | Yield (ft ³ /sk) | Cement (sk) | Nearest 5sk | 500 | 10.000 | 4.500 | 0.435 | 217 | 1.150 | 189 | 190 | 100 | 4.000 | 0.000 | 0.087 | 9 | 1.150 | 8 | 10 | | | | | | | | TOTAL: 200 |
| Length (ft) | OD (in) | ID (in) | ft ³ /ft | Volume (ft ³) | Yield (ft ³ /sk) | Cement (sk) | Nearest 5sk | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 500 | 10.000 | 4.500 | 0.435 | 217 | 1.150 | 189 | 190 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 100 | 4.000 | 0.000 | 0.087 | 9 | 1.150 | 8 | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | TOTAL: 200 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14) | Displace cement with 6 bbls fresh water (2 bbls short of workstring volume). | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Tubing ID</th> <th>Length (ft)</th> <th>Disp. Factor (BBL/ft)</th> <th>Disp (BBL)</th> <th>Disp -2BBL</th> </tr> </thead> <tbody> <tr> <td>1.995</td> <td>2190</td> <td>0.00387</td> <td>8</td> <td>6</td> </tr> </tbody> </table> | Tubing ID | Length (ft) | Disp. Factor (BBL/ft) | Disp (BBL) | Disp -2BBL | 1.995 | 2190 | 0.00387 | 8 | 6 | | | | | | | | | | | | | | | | | | | | | | |
| Tubing ID | Length (ft) | Disp. Factor (BBL/ft) | Disp (BBL) | Disp -2BBL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.995 | 2190 | 0.00387 | 8 | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15) | Unsting from CICR. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16) | Place remaining 2 bbls of cement on top of CICR. Allow to fall on CICR as pulling out. TOC inside casing: 2,059' | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17) | POOH w/ workstring. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18) | RIH w/ WL and cut production casing at 598' (200' below surface shoe, Fox Hills, or deepest water well). | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19) | Circulate a MINIMUM of 2 bottoms up volumes (66 bbls) or until well is free of oil, gas, or any large cuttings. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Well Name: BILLY 22-45

| PROCESS STEPS | | | | | | | | |
|---------------|---|---------|---------|---------------------|---------------------------|-----------------------------|-------------|-------------|
| Type | Comment | | | | | | | |
| | Length (ft) | OD (in) | ID (in) | BBL/ft | Disp (BBL) | 2x Disp (BBL) | | |
| | 398 | 8.097 | 4.500 | 0.0440 | 18 | 35 | | |
| | 0 | 12.250 | 4.500 | 0.1261 | 0 | 0 | | |
| | 200 | 10.000 | 4.500 | 0.0775 | 15 | 31 | | |
| | | | | | | TOTAL: 66 | | |
| 20) | Perform flow check for 5 minutes to ensure well is static and record current fluid weight in WellView. | | | | | | | |
| 21) | Unland production casing. | | | | | | | |
| 22) | POOH and LD production casing filling pipe every 6 joints. | | | | | | | |
| 23) | RIH w/ workstring to 648' (50' inside cut casing). | | | | | | | |
| 24) | Establish circulation. | | | | | | | |
| 25) | Pump 10 bbls Mud Flush (or similar spacer) followed by 225 sx of cement as a balanced plug. TOC should be at surface. | | | | | | | |
| | Length (ft) | OD (in) | ID (in) | ft ³ /ft | Volume (ft ³) | Yield (ft ³ /sk) | Cement (sk) | Nearest 5sk |
| | 398 | 8.097 | 0.000 | 0.358 | 142 | 1.150 | 124 | 125 |
| | 200 | 10.000 | 0.000 | 0.545 | 109 | 1.150 | 95 | 95 |
| | 50 | 4.000 | 0.000 | 0.087 | 4 | 1.150 | 4 | 5 |
| | | | | | | | | TOTAL: 225 |
| 26) | POOH w/ workstring. Top off cement if needed. Cement needs to be ~10' from surface. | | | | | | | |
| 27) | ND BOP. | | | | | | | |
| 28) | RDMO. | | | | | | | |