Powell, Brandon, EMNRD

From: Powell, Brandon, EMNRD
Sent: Tuesday, July 3, 2018 4:04 PM
To: 'Christine Brock'; wtambekou@blm.gov; jwsavage@blm.gov; aelmandi@blm.gov
Cc: Kevin Eichinger; Cheryl Weston
Subject: RE: Bolin Hardie #1 (API:30-045-20126) - request to squeeze

Good afternoon,

You have approval from us to proceed. Please provide at least 24hr notification prior to the MIT pressure test.

Please note you may also need BLM approval.

Thank You

Brandon Powell
Office: (505) 334-6178 ext. 116
"He who wishes to gain knowledge is wiser than he who thinks he has knowledge (unknown)"

-----Original Message-----
From: Christine Brock <cbrock@hilcorp.com>
Sent: Tuesday, July 3, 2018 3:55 PM
To: Powell, Brandon, EMNRD <Brandon.Powell@state.nm.us>; wtambekou@blm.gov; jwsavage@blm.gov; aelmandi@blm.gov
Cc: Kevin Eichinger <keichinger@hilcorp.com>; Cheryl Weston <cweston@hilcorp.com>
Subject: Fwd: Bolin Hardie #1 (API:30-045-20126) - request to squeeze

Good afternoon-

Attached is the procedure for squeeze work we plan upon your approval and CBL. We would like to try and do this work toward the end of this week or some time early next week. If you have any questions or concerns our engineer contact info is below.

Thank you,
Christine

Sent from my iPhone

Begin forwarded message:

From: Kevin Eichinger <keichinger@hilcorp.com<mailto:keichinger@hilcorp.com>>
Date: July 3, 2018 at 3:21:09 PM MDT
To: Christine Brock <cbrock@hilcorp.com<mailto:cbrock@hilcorp.com>>, Cheryl Weston <cweston@hilcorp.com<mailto:cweston@hilcorp.com>>
Cc: David Garza <dgarza@hilcorp.com<mailto:dgarza@hilcorp.com>>, Virgil Chavez <vchavez@hilcorp.com<mailto:vchavez@hilcorp.com>>
Subject: RE: Bolin Hardie #1 (API:30-045-20126) - request to squeeze

Christine and Cherly,

Talking with A+, the cement will be class G, not C. Update attached. The yield they had me use to calculate volumes was actually for class G, so no change needed there.

Best regards,
Kevin Eichinger

From: Kevin Eichinger
Sent: Tuesday, July 3, 2018 4:02 PM
To: Christine Brock <cbrock@hilcorp.com<mailto:cbrock@hilcorp.com>>; Cheryl Weston <cweston@hilcorp.com<mailto:cweston@hilcorp.com>>
Cc: David Garza <dgarza@hilcorp.com<mailto:dgarza@hilcorp.com>>; Kevin Eichinger <keichinger@hilcorp.com<mailto:keichinger@hilcorp.com>>; Virgil Chavez <vchavez@hilcorp.com<mailto:vchavez@hilcorp.com>>
Subject: Bolin Hardie #1 (API:30-045-20126) - request to squeeze

Christine and Cheryl,

Requesting permission to squeeze the Bolin Hardie #1 well. The procedure is attached (including updated wellbore diagram), as are recent CBL and CIL.

Best regards,
Kevin Eichinger
Hilcorp Energy Company
Operations Engineer
Desk: (832)839-4567
Cell: (713)397-1032

Hilcorp Energy Company's address is 1111 Travis St, Houston, TX 77002

Bolin Hardie #1

Section 34-T29N-R08W

API#: 30-045-20126

Casing Squeeze

1. Starting point is a 4-1/2" CIBP set at ~5277' (this is below known ~1490' TOC from 5/30/18 CBL)
2. Squeeze casing as needed. Initial plan is as follows, subject to change pending operations and testing.
    a. RIH and set 4-1/2" CIBP at 4294'.
    b. Pull just above CIBP (5' or less higher).
        i. Fill casing with cement bottoms-up from 4294'-3118' plus excess to bring the top to 2500' before fallback.
            1. Pump cement. Approximate volume to be 140 sks of Class G cement with 1.15 ft^3/sk yield (28.6 bbls).
            2. Pull above top of unset cement to ~2450'.
            3. Circulate clean.
            4. POOH with tubing.
    c. RIH with CR.
        i. Tag top of cement and set at top of cement (estimated 2500' or slightly deeper). Must be set at 3118' or shallower.
        ii. Pull above CR.
        iii. Circulate cement to near end of tubing prior to stabbing into CR.
        iv. Stab into CR and prepare to pump through it.
            1. Continue to pump cement through the CR. Pump as much volume as possible/needed. Hesitate several times as needed to allow cement to thicken and apply increasing pressure with each step. Aim to have a final squeeze pressure of ~1500 psi trapped below the CR prior to running out of cement.
        v. Stab out of CR and circulate clean.
        vi. POOH with tubing string and stinger.
    d. Wait on cement. For a longer wait, may choose to RDMO service unit to allow cement to set longer.
3. Drill out squeeze(s) as applicable, leaving ~4294' CIBP in place.
    a. Test squeeze to 500 psi.
        i. *Note: Initial testing may be performed in increments while drilling out the squeeze. If a test does not pass, depending on leakoff rate and prior data, another squeeze may be performed or additional footage may be drilled prior to any possible subsequent squeeze(s).*
    b. Multiple squeeze attempts may be performed, as needed. A summary of operations and any squeeze hole(s) added will be provided after the job is finished.
4. Notify regulatory to provide the opportunity to witness pressure test. Proceed to next step after a successful 500 psi test.
5. Drill out 4294' CIBP, leaving the 5277' CIBP in place.
6. Continue with originally planned MV completion per prior NOI.

Hilcorp Energy Company

Current Schematic

Well Name: BOLIN-HARDIE #1

API / UWI	Surface Legal Location	Field Name	License No.	State/Province	Well Configuration Type
3004520126	034-029N-006W-D	DK		NEW MEXICO	Vertical

Ground Elevation (ft)	Original KB/RT Elevation (ft)	KB-Ground Distance (ft)	KB-Casing Flange Distance (ft)	KB-Tubing Hanger Distance (ft)
6,402.00	6,415.00	13.00	13.00	13.00

Vertical, Original Hole, 7/3/2018 12:32:41 PM

MD (ftKB)	TVD (ftKB)	Vertical schematic (actual)
13.1		
208.0		
209.0		1; Surface; 8 5/8 in; 8.10 in; 13.0 ftKB; 209.0 ftKB
211.9		
470.1		NACIMIENTO (final)
664.0		
1,490.2		
1,957.0		OJO ALAMO (final)
2,079.1		
2,104.0		KIRTLAND (final)
2,353.0		
2,660.1		FRUITLAND (final)
2,944.9		PICTURED CLIFFS (final)
3,095.1		LEWIS (final)
3,199.1		2; Intermediate1; 7 in; 6.46 in; 13.0 ftKB; 3,199.0 ftKB
3,200.1		
3,544.0		HUERFANITO BENTONITE (final)
3,910.1		CHACRA (final)
4,294.0		MESAVERDE (final)
4,560.0		CLIFF HOUSE (final)
4,690.0		MENEFEE (final)
5,176.8		POINT LOOKOUT (final)
5,276.9		Bridge Plug - Temporary; 5,277.0-5,279.0; WYOMING COMPLETION TOOLS 4 1/2" CAST IRON BRIDGE PLUG
5,278.9		
5,807.0		MANCOS (final)
6,111.9		GALLUP (final)
6,737.5		
7,120.1		GREENHORN (final)
7,180.1		GRANEROS (final)
7,190.0		Bridge Plug - Temporary; 7,190.0-7,192.0; WYOMING COMPLETION TOOLS 4 1/2" CAST IRON BRIDGE PLUG
7,191.9		
7,221.1		
7,222.1		DAKOTA (final)
7,326.1		PERF - DAKOTA; 7,221.0-7,326.0; 9/1/1967
7,354.0		
7,470.1		PERF - DAKOTA; 7,354.0-7,470.0; 9/1/1967
7,518.0		PBTD; 7,518.0
7,527.9		
7,529.9		3; Production1; 4 1/2 in; 4.00 in; 13.0 ftKB; 7,529.0 ftKB

Surface Casing Cement; 13.0-212.0; 8/16/1967; Cmt w/ 140 sx Class C. Circulate to surface

Production Casing Cement; 13.0-664.0; 8/27/1967; CBL ran on 5/30/18 shows cement 664' to surface.

Intermediate Casing Cement; 2,353.0-3,200.0; 8/21/1967; Cmt w/ 130 sx Class C, followed by 100 sx. TOC 2353' based on 75% eff. calc.

Production Casing Cement; 1,490.0-7,529.0; 8/27/1967; Cmt w/ 130 sx Class C, followed by 100 sx Class C. TOC 1490' per 5/30/18 CBL

Hydraulic Fracture; 9/1/1967; FRAC WITH 66000# 20/40 SAND AND 85000 GALLONS WATER

Hydraulic Fracture; 9/1/1967; FRAC WITH 14000# 20/40 SAND AND 24800 GALLONS WATER

Production Casing Cement (plug); 7,518.0-7,529.0; 8/27/1967; Cmt w/ 130 sx Class C, followed by 100 sx Class C. TOC 1490' per 5/30/18 CBL