



NeoBailerBottom
Preparation and Actuation in Service
(NeoBB)
Document # DRI-0111-0000

NeoBBs are non-explosive systems used to dump NeoSuperSlurry and bridging material from gravity bailing systems.

NeoBB models are available for 1 5/8", 1 3/4", 2", 2 1/8", 2 1/2", 3", 3 1/2", 4" & 5" bailer systems.

Refer to drawings 0111-XXX-001 (where XXX = dia of the gravity bailer sys) to identify features and individual parts of the NeoBB.

Recommended Operations to Maintain Static Wellbore Conditions

The operations below were strictly followed for many decades of high success rate Thru-tubing Plug-back Operations. Many WL operators are unaware of or have chosen to not perform these critical operations. Maintaining static wellbore conditions during Thru-Tubing Plug-back Operations is critical.

These are recommended procedures that will maintain a relatively static shut-in tubing pressure (SITP) and overall wellbore pressure when making multiple wireline (WL) & Slickline (SL) runs in and out of the well

1. Perform the lubricator pressure test using the appropriate water solution e.g., fresh water, brackish water, or weighted brine.
 - a. Use a 25% glycol/water solution if there is gas below the Master Valve (MV).
 - b. The pressure test should be at least 250 psi above the SITP.
2. Once the lubricator pressure test is finished, reduce the lubricator pressure to be 50-100 psig above the SITP.
3. Slowly crack open the MV and allow pressure equalization. Record the lubricator/wellhead SITP.
4. Descend into the well.
5. Monitor, record and adjust the wellhead pressure throughout descent and ascent operations. This must be done during every RIH until the plug is pressure tested.

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- a. Record the SITP before and after opening the MV on every RIH. Call this the recent SITP.
 - b. Maintain a constant wellhead pressure equal to the recent SITP \pm 50 psig for that RIH.
 - i. Wellhead pressure can increase due to descending line displacement while RIH, bleed off wellhead pressure at the surface to maintain recent SITP \pm 50 psig.
 - ii. Wellhead pressure can decrease due to ascending line displacement while coming out of the hole (COOH). Pump 25% glycol water solution into the wellhead to maintain the recent SITP \pm 50 psig.
6. Perform a pressure test when and as instructed.

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1. Secure the NeoBB in a vise. Orient the NeoBB so that it is vertically upright.
2. Obtain a pre-prep'd NeoPigTail (Item #17, NeoProducts P/N 0111-175-091) (a pre-assembled combination of: a) 5" - long 18 - 22 gauge Teflon insulated multi-strand hook-up wire, b) a brass electrical connector crimped onto the wire, and c) a nitrile insulating boot slipped over the brass connector). Place a dab of Dow 111 Silicone Lubricant into the open end of the nitrile boot. Attach the NeoPigTail onto the Electrical Feed Thru (Item #2). Securely tie a strand of wax covered flat Nomex string onto the bottom of the nitrile boot to keep wellbore fluid from seeping into the electrical connection. Thread the Retaining Sleeve for Rubber Boot (Item #23) over the NeoPigTail and onto the Ceramic Feed-thru with Retaining Sleeve Threads (Item #2). This Retaining Sleeve will ensure that the NeoPigTail stays in place on the Ceramic Feed-thru.
3. Apply a generous amount of high-temp downhole grease to the threads and seal bore at the top of the NeoBB and to the O-ring (Item #18) on the Top Piston (Item #3).

PURGE ALL GAS FROM THE INTERIOR OF THE TOOL

4. Screw a Hydraulic Pump-in Fixture (Item #16) into the Hydraulic Fill Port. Attach a hydraulic pump filled with a suitable downhole hydraulic fluid to the pump-in fixture. Pump hydraulic fluid into the NeoBB. It is acceptable to quickly pump fluid into the NeoBB until the O-ring (Item #18) travels out of sight as it engages its' mating seal bore at the top of the NeoBB. Note: Do not use Teflon Tape or get the Hydraulic Pump-in Fixture dirty. Doing so can result in a contaminated check valve or and/or solenoid valve and result in replacement with new parts.
5. Then, slowly pump fluid using long slow pumping strokes until gas and fluid begin to sputter from the weep holes, whereupon, you must slow down the pump rate. Pump very slowly using long uniform strokes. Stop pumping once a steady stream of hydraulic fluid is expelled from each weep hole. All the air is now purged from the NeoBB.
6. Inspect all components of the BHA for service worthiness.
7. Make up the BHA from the rope socket down to the CCL.
8. Assemble the top-fill window sub, bailer joints and bottom fill sub (if needed).

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For the bailer joints, thread the pin end of one bailer joint into the box end of another by hand. Once the bailer joints are almost completely threaded, you may use a pipe wrench on each of the knurled sections to finish threading the two bailer joints into each other. Do not overtighten. If using a Bailer Clamp, attach the clamp to a knurled section of the bailer joints. Overtightening will result in damage to the bailer joints and possibly misruns.

Measure the length of the bailer system before RIH.

9. Obtain suitable 18 – 20 gauge multi-strand downhole hook-up wire with extra-thick Teflon insulation (rated for 1,000 Vdc). Cut the wire to a length that is 24” longer than the length of the dump bailer assembly. This wire will be called the “hot wire”.
10. Makeup the hot wire to a GO tear-drop sub. Run the hot wire through and out the bottom end of the bailer system. Makeup the tear drop sub to the top fill window sub.
11. Pull the “hot wire” taunt and cut it 3” – 4” below the end of the bailer pin (or bottom fill sub).
12. Obtain the NeoBB. Hold it close to the bottom end of the bailer system. Using a 3M Scotchlok IDC UY2 Butt Connector, connect the hot wire to the NeoPigTail. Stuff the hot wire into the bailer system and makeup the NeoBB to the bailer system.
13. Check the resistance of the NeoBB (the resistance typically reads 270-320 ohms on surface). Contact NeoProducts if the NeoBB has a resistance out of this range and does not fire properly.
14. Makeup the bailer system to the WL toolstring.
15. Flush out the interior of the bailer system with fresh water before and after every run in the hole.
16. Set up a drip pan to collect hydraulic fluid that will be expelled during the following tool test. Test fire the NeoBB on surface using the following steps:
 - a. Using a V_{dc} power supply, slowly apply DC voltage and ramp up the current to 450-500 milliamps in 4 – 5 seconds,
 - b. Maintain the current for 3 seconds and ramp down to zero.

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- c. Record the threshold current and voltage needed to actuate the tool. Note: Do not exceed 500 milliamps of current.

- 17. Screw the Hydraulic Pump-In Fixture (Item #16) into the Hydraulic Fill Port. Attach the hydraulic pump to the pump-in fixture and pump into the tool. It is acceptable to quickly pump fluid into the tool until the O-ring (Item #18) enters its mating seal bore at the top of the NeoBB.

- 18. Then, slowly pump hydraulic fluid using slow long strokes until fluid begins to sputter air and hydraulic fluid from the weep holes whereupon you should continue to pump fluid until a steady stream of fluid is expelled from each weep hole.

- 19. Fill the bailer with NeoSuperSlurry cement (or whatever medium is to be dump bailed downhole).

- 20. Pull the BHA into the lubricator. The BHA may be treated in the same ways as any other gravity bailer system.

- 21. Perform all subsequent WL and bailing operations per the instructions and protocols of the WL company and operating company.

- 22. Monitor the BHA weight throughout the descent into the well. Measure and record the line wgt and pick-up wgt just before actuating the NeoBB.

- 23. Locate the NeoBB so that its bottom end is 1' – 2' above the platform upon which the dump media will reside, actuate the NeoBB using the following steps:
 - a. Slowly ramp up the V_{dc} current to 450-500 milliamps in 4 – 5 seconds,
 - b. Maintain the current for 3 – 5 seconds and ramp down to zero,
 - c. Repeat Steps a & b two more times (minimum of 60 seconds between firing),
 - d. Wait 2 minutes then slowly raise the tool by a length equal to the expected fill height of the dump medium (never yo-yo the bailer system),
 - e. Wait 2 minutes and slowly pull up 20' – 30', and pull out of the hole per standard safe practice

Note: Increased wireline length will affect line resistance. Additional voltage may need to be applied at surface to reach desired voltage at the tool head.

- 24. The entire bailer system should be examined for service worthiness after every bailer run. Especially, the NeoBB should be thoroughly inspected. Examine the hot wire and the o-ring in the Top Piston for damage and service worthiness.

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25. Repeat Steps #3 - #5 followed by Steps #15 - #24 if the bailer system is to be run in the hole again. Otherwise, go to the next step.
26. Break down the bailer system once bailing operations are complete. Examine the NeoBB for general service worthiness. Attach a label to the NeoBB stating that it must be redressed before returned to service.
27. Contact NeoProducts if there appears to be any problems with the equipment or any need for product support.
28. Wipe down all bailer system components and stow away until future service.

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