OPTIMISE PRODUCTION AND IMPROVE WELL ACCESSIBILITY WITH NOVEL REFORMED EXPANDABLE TECHNOLOGY

SPE Aberdeen – Well Decommissioning 2021

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Overview

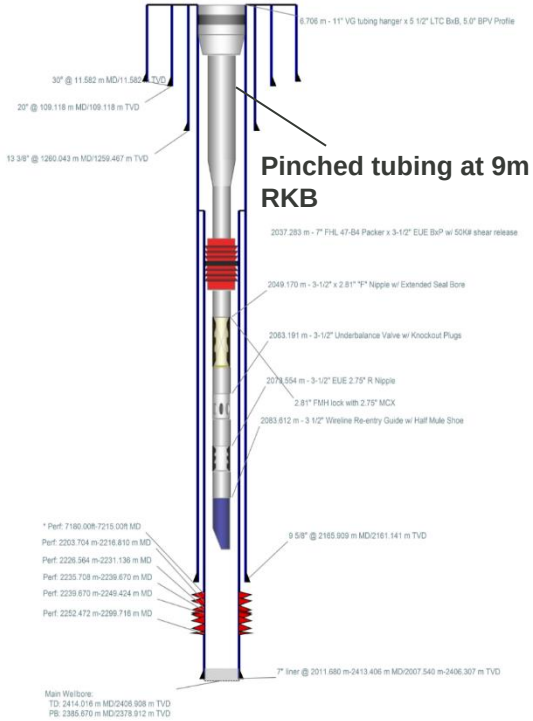
Operator in Papua New Guinea had a shallow tubing collapse, preventing access to the wellbore below. The shallow depth prevented a traditional swaging approach.

Objective

- Open collapsed tubing ID (without milling), run tubing cutter, cut and pull tubing for abandonment

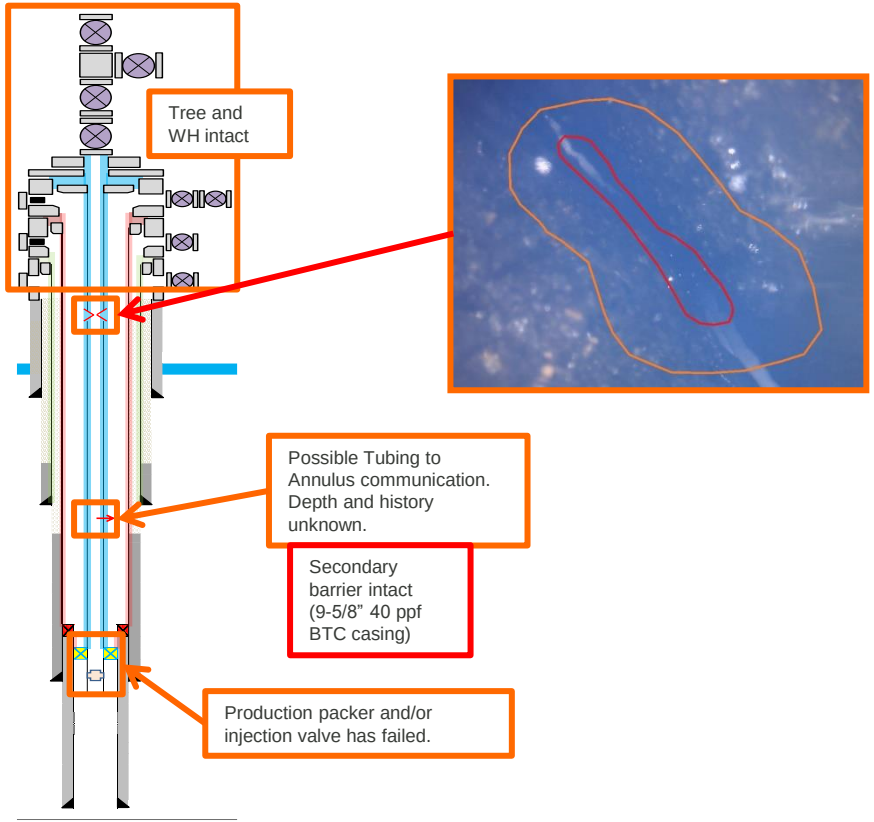
Solution & Result

- The ReForm system was deployed, ID was opened, and cutter deployed.



Area of Concern

- 5-½" 17# K-55 LTC tubing
- Collapse began at 9m RKB, ~2m below ground level, and was of unknown length.
- Production packer and/or injection valve leak – could not access below collapse to determine leak path.
- Corrosion/erosion may have affected the tubing in this area
- Tubing was collapsed with effectively no gap, “pinched flat”



Proposed Tool Operation

Reform Cone

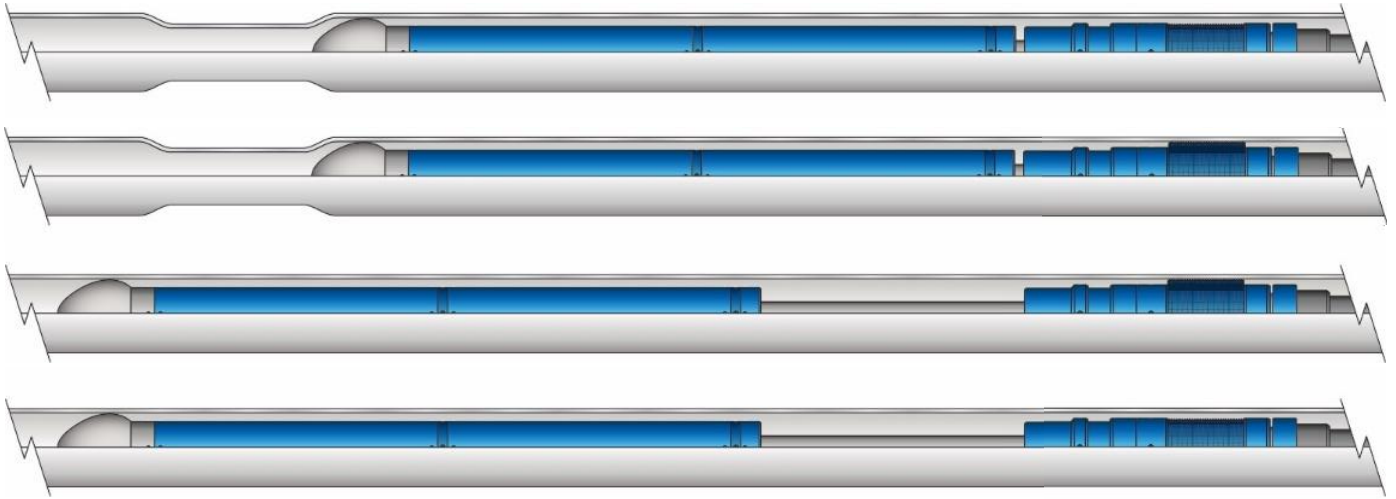
Shape provides easy entry in to collapsed section
OD chosen based on goals of operation and collapse severity

Drive Unit

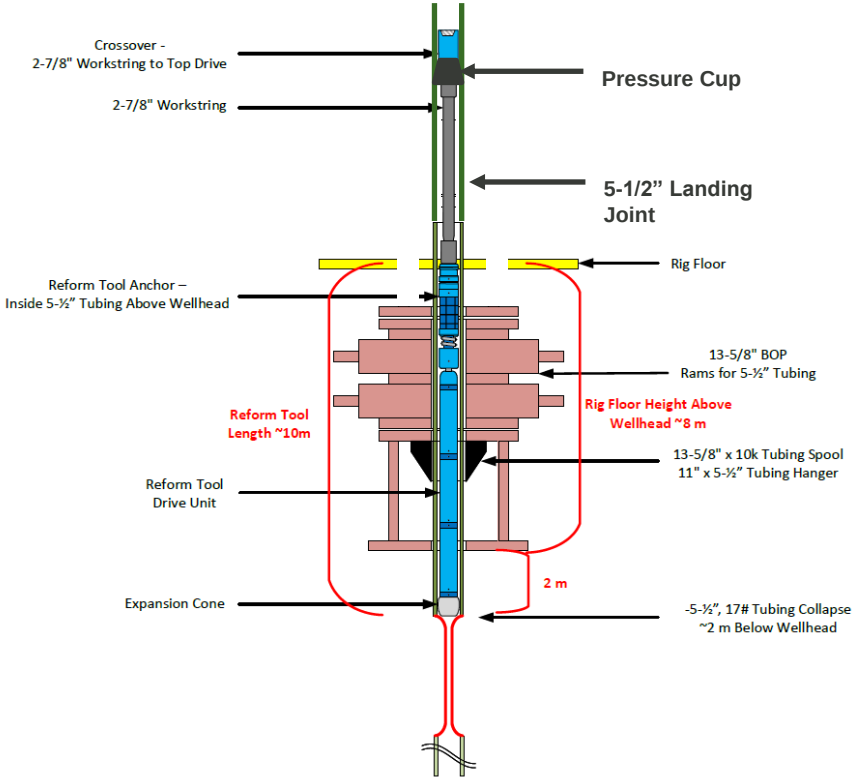
This pressure will extend the mandrel and apply force to the reform cone

ID Anchor

The ID anchor sets inside the tubing/casing and anchors the tool shaft to the tubing/casing.



Proposed Rig Up



- Make up landing joint for ID Anchor to bite
- Provide removable pressure cup above tool to direct flowback to flowline while tool across BOPs
- Provide two sizes of drive units for two-pass forming of the tubing (intermediate and full drift) to reduce forces
- 3.250" and 4.760" Cones selected for compatibility with drive units and cutter pass through requirements

Tool Testing

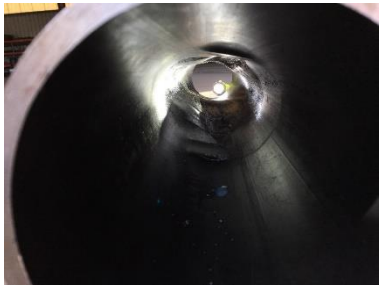
Crushed Pipe Prior to full scale test

Crushed Pipe partially reformed after first stroke

Fully Reformed after second stroke

Testing

3.250” OD Cone Pass – Before and After



4.760” OD Cone 2nd Pass – Before and After

Deployment

1) Landing joint was made up to the 5-½" liner hanger.
2) Small OD tool was picked up and RIH to top of collapse at 10m -- Stroked with 3.250” Cone
3) Free movement down to 15m, POOH
4) Cutter could not pass, 2-7/8” tubing could not pass
5) Large OD tool picked up and tagged at 10m --Stroked 2x with 4.760” Cone
6) Small OD tool run in and tagged at 17m -- Stroked with 3.250” cone
7) Free travel to 20m
8) Large OD tool run to 17m -- Stroked 2x with 4.760” cone
9) Free travel down to 29m
10) RIH with cutter

ANY QUESTIONS?

Thank You

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