

(21) Application No: 2010005.3 (22) Date of Filing: 29.10.2018 Date Lodged: 30.06.2020 (30) Priority Data: (31) 62595120 (32) 06.12.2017 (33) US (86) International Application Data: PCT/US2018/057928 En 29.10.2018 (87) International Publication Data: WO2019/112706 En 13.06.2019	(51) INT CL: E21B 37/04 (2006.01) E21B 37/00 (2006.01) (56) Documents Cited: WO 2016/205956 A1 US 5505262 A (58) Field of Search: INT CL E21B Other: EPO-Internal, WPI Data
(71) Applicant(s): Michael W Dennis 918 E. Austin, Kermit 79745, Texas, United States of America (72) Inventor(s): Michael W Dennis Gary W Pankonien Gary A Wilson (74) Agent and/or Address for Service: Marks & Clerk LLP 1 New York Street, MANCHESTER, M1 4HD, United Kingdom	

(54) Title of the Invention: **Cleanout tools and related methods of operation**
Abstract Title: **Cleanout tools and related methods of operation**

(57) Cleanout tools and related methods of operation. At least some of the example embodiments are cleanout tools including a tool body that defines an internal annular channel, a joiner coupled to the tool body, a sleeve telescoped within the joiner and tool body, and a ball disposed within the annular channel. The ball held within the annular channel by the sleeve, and the ball configured to move along the annular channel under force of fluid pumped into the cleanout tool. The ball creates a pulsing of fluid streams exiting the tool body. Moreover, in some example systems the fluid streams created by the tool body intersect the inside diameter of a casing at non-perpendicular angles.

