505451892 04/30/2019

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5498693

| SUBMISSION TYPE: | NEW ASSIGNMENT |
|-----------------------|----------------|
| NATURE OF CONVEYANCE: | ASSIGNMENT |

CONVEYING PARTY DATA

| Name | Execution Date |
|------------------------|----------------|
| MEHDI SEBDANI MAZROOEE | 01/29/2018 |
| MICHAEL LINLEY FRIPP | 01/10/2018 |
| MATTHEW LEWIS LAHMAN | 04/18/2018 |
| MARK ALLEN ADAMS | 01/10/2018 |

RECEIVING PARTY DATA

| Name: | HALLIBURTON ENERGY SERVICES, INC. |
|-----------------|-----------------------------------|
| Street Address: | 3000 N. SAM HOUSTON PARKWAY E. |
| City: | HOUSTON |
| State/Country: | TEXAS |
| Postal Code: | 77032 |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 16346154 |

CORRESPONDENCE DATA

Fax Number: (512)670-8904

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent

using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: 5127108326

Email: uspto@gilliamip.com

Correspondent Name: GILLIAM IP PLLC (HALLIBURTON)

Address Line 1: 7200 N. MOPAC EXPY. #440

Address Line 4: AUSTIN, TEXAS 78731

| ATTORNEY DOCKET NUMBER: | 2016-IPM-100704 U1P1 US |
|-------------------------|-------------------------|
| NAME OF SUBMITTER: | MORGAN BRYANT |
| SIGNATURE: | /Morgan Bryant/ |
| DATE SIGNED: | 04/30/2019 |

Total Attachments: 6

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PATENT 505451892 REEL: 049029 FRAME: 0823

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PATENT REEL: 049029 FRAME: 0824

ASSIGNMENT

APPLICATION NO.: PCT/US2017/068891 DOCKET NUMBER: 2017 101718U1 TITLE: ADAPTIVE HYDRAULIC FRACTURING CONTROLLER FOR CONTROLLED BREAKDOWN TECHNOLOGY

WHEREAS, Mehdi Sebdani Mazrooee, Michael Linely Fripp, Matthew Lewis Lahman, Mark Allen Adams (hereinafter the "Undersigned") have made one or more inventions and other subject matter (hereinafter collectively referred to as the "Invention") which are identified above and accompanying this Assignment.

FOR GOOD AND VALUABLE CONSIDERATION, the receipt, sufficiency, and adequacy of which are hereby acknowledged by the Undersigned, the Undersigned do hereby irrevocably and unconditionally:

CONVEY, ASSIGN, AND TRANSFER to Halliburton Energy Services, Inc. (the "Assignee"), a corporation of the State of Delaware, having a place of business at 3000 N. Sam Houston Parkway E., Houston, TX 77032-3219, the Undersigned's entire right, title, and interest for the United States and all foreign countries and jurisdictions in and to:

the Invention which is disclosed in the above-identified application or applications;

such application or applications, and all divisional, continuing (including continuation-in-part), substitute, renewal, reissue, and all other applications for a patent or patents which have been or shall be filed in the United States (including all provisional and non-provisional applications), and in all foreign countries and jurisdictions based in whole or in part on any of such Invention (including any application for a utility model or an innovation patent application);

all original and reissued patents which have been or shall be issued in the United States and all foreign countries and jurisdictions based in whole or in part on any of such Invention;

including the right to claim priority to the above-identified patent application or applications in relation to subject matter based in whole or in part on the above-identified patent application or applications and any of the foregoing including the right to file foreign applications under the provisions of any convention or treaty;

and including the right to all causes of action, remedies, and other enforcement rights related to the above-identified application or applications, including without limitation the right to sue for past, present, or future infringement, misappropriation, or violation of any and all rights related to the above- identified patent application or applications and any of the foregoing, including the right to obtain and collect damages for past, present, or future infringement;

AUTHORIZE AND REQUEST the issuing authority to issue any and all United States and foreign patents granted on such Invention to the Assignee;

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WARRANT AND COVENANT that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been or shall be made to others by the Undersigned, and that the full right to convey the same as herein expressed is possessed by the Undersigned;

COVENANT, that when requested and without compensation, but at the expense of the Assignee, in order to carry out in good faith the intent and purpose of this Assignment, the Undersigned shall (1) execute all provisional, non-provisional, divisional, continuing (including continuation-in-part), substitute, renewal, reissue, and all other patent applications for the Invention; (2) execute all rightful oaths, declarations, assignments, powers of attorney and other papers for the Invention; (3) communicate to the Assignee all facts known to the Undersigned relating to the Invention and the history thereof; (4) cooperate with the Assignee in any interference, reexamination, reissue, opposition, dispute, or litigation involving any of the applications or patents for the Invention; and (5) take such further actions as the Assignee shall reasonably consider necessary or desirable for vesting title to such Invention in the Assignee, or for securing, maintaining and enforcing proper patent protection for the Invention;

COVENANT, that should any provision of this agreement be held unenforceable by an authority of competent jurisdiction, such a ruling shall not affect the validity and enforceability of the remaining provisions. To the extent that any such provision is found to be unenforceable, the Undersigned, when requested and without compensation shall act in good faith to substitute for such provision a new provision with content and purpose as close as possible to the provision deemed unenforceable

THIS AGREEMENT IS TO BE BINDING on the heirs, assigns, representatives, and successors of the Undersigned, and is to extend to the benefit of the successors, assigns, and nominees of the Assignee.

AGREED as of the date of my signature below:

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| Assignor: | |
|---------------------------------|--|
| (Signature): | Mehii Mofree |
| | Name:Mehdi Sebdani Mazrooee |
| | City/State:Double Oak, TX |
| Date: | 1/29/18 |
| STATE OF _ | Teyer |
| COUNTY OF | Dallay)ss |
| Mehdi Sebdan executed the fo | i Mazrooee, to me known and known to me to be the personally appeared oregoing instrument, and he/she duly acknowledged to me that he/she executed the ses and purposes therein set forth. |
| Notary P. Comm. I | DLFO R. SEGURA ublic, State of Texas Expires 10-25-2020 ry ID 12129458 |
| [SEAL] | |
| | / Notary Public |

| Assignor: | | | | |
|----------------------------|---------------------|--|---|--|
| (Signature): | 164 | 36/ | | |
| | Name: Michael | Linley Fripp | | |
| | City/State: Ca | arrollton, TX | | |
| Date: | JAN 10, 2 | 918 | _ | |
| STATE OF _ | TEXAS |) | | |
| COUNTY OI | F_DALLAS | <u>**</u> |)ss | |
| Michael Linle executed the | ey Fripp, to me kno | wn and known to nt, and he/she duly | _, 20 /8 before me p me to be the person de acknowledged to me | ersonally appeared scribed in and who that he/she executed the |
| [SEAL] | | Sharon | E. Dutholo | 2 |
| | . 4 | | Notary Public | |
| | | | My Com | E. BARTHOLOMEW blic, State of Texas mission Expires |

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| Assignor: |
|---|
| (Signature): |
| Name: Matthew Lewis Lahman |
| City/State: Houston, TX |
| Date: |
| STATE OF Defas |
| COUNTY OF Advis |
| On this day of |
| |
| [SEAL] Lex Wellsten |
| ALEX WEBSTER ALEX WEBSTER NOTARY PUBLIC, STATE OF TEXAS MY COMMISSION EXPIRES JANUARY 04, 2020 JD #12884075-3 |

| Assignor: | |
|---|---|
| (Signature): | |
| | Name: Mark Allen Adams |
| | City/State:Duncan, OK |
| Date: | 1-10-2018 |
| STATE OF | Oklahema) |
| |)ss |
| COUNTY O | F <u>Stephens</u> |
| Mark Allen A executed the | is <u>O</u> day of <u>Jon (My</u> , 20 <u>W</u> before me personally appeared Adams, to me known and known to me to be the person described in and who foregoing instrument, and he/she duly acknowledged to me that he/she executed the uses and purposes therein set forth. |
| [SEAL] | Jessia Flay |
| Notary Public, Commissi My Commission Exp | ICA MAYS State of Okishoma on # 15008675 ites \$eptember 18, 2019 |
| | |

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PATENT REEL: 049029 FRAME: 0830

RECORDED: 04/30/2019