PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2

EPAS ID: PAT5874038

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
HENRY CLIFFORD BLAND	12/18/2019
MIKKO JAASKELAINEN	12/03/2019
JOSHUA LANE CAMP	11/27/2019
TIRUMANI SWAMINATHAN	12/02/2019
ERIC JAMES DAVIS	12/02/2019

RECEIVING PARTY DATA

Name:	HALLIBURTON ENERGY SERVICES, INC.
Street Address:	3000 N. SAM HOUSTON PARKWAY E.
City:	HOUSTON
State/Country:	TEXAS
Postal Code:	77032-3219

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	16694825

CORRESPONDENCE DATA

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KILPATRICK TOWNSEND & STOCKTON LLP - HAL **Correspondent Name:**

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SUITE 2800 Address Line 2:

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ATTORNEY DOCKET NUMBER:	061429-1148194
NAME OF SUBMITTER:	TAMBRA WHITE
SIGNATURE:	/Tambra White/
DATE SIGNED:	12/18/2019
	-

Total Attachments: 6

PATENT REEL: 051317 FRAME: 0619

505827208

ASSIGNMENT OF INTELLECTUAL PROPERTY RIGHTS IN PATENT APPLICATION

Whereas we, the undersigned inventors, have invented certain new and useful innovations as set forth in the patent application entitled:

VECTOR STRAIN SENSOR SYSTEM FOR A WELLBORE

the specification of which was filed with the U.S. Patent and Trademark Office on November 25, 2019, and assigned application no. 16/694,825.

For one dollar (\$1.00) and other good and valuable consideration, the receipt and sufficiency of which we acknowledge, we:

- Agree to assign, transfer, convey, and sell, hereby assign, transfer, convey, and sell
 and have assigned, transferred, conveyed, and sold to Halliburton Energy Services,
 Inc., a corporation of the State of Delaware, having a principal place of business at
 3000 N. Sam Houston Parkway E., Houston, Texas 77032-3219 ("Assignee"), the
 entire right, title, and interest in and to:
 - (a) all intellectual property (including, without limitation, any innovation, information, invention, discovery, product, process, work or design) disclosed, embodied, shown, or claimed in the above-referenced patent application, implicitly or explicitly;
 - (b) the above-referenced patent application, the right to claim priority to the above-referenced patent application, all applications based in whole or in part upon the above-referenced patent application, including, without limitation, all applications that are a provisional, non-provisional, design, divisional, continuation, continuation-in-part, registration, utility model, industrial design, reissue, renewal, substitute, extension, reexamination, post-grant review, inter partes review, supplemental examination or non-U.S. patent application or application for other rights based in whole or in part on the above-referenced patent application;
 - (c) all patents (including, without limitation, all U.S. and non-U.S. patents, registrations, utility models, industrial designs, design patents, counterparts, continuations, continuations-in-part, divisionals, reissues, renewals, substitutes, extensions, reexaminations, post-grant reviews, inter parter reviews and supplemental examinations) that are granted or issued upon, or that claim priority to, any and all applications described in (b) of this paragraph or that disclose or claim intellectual property described in (a) of this paragraph, in whole or in part; and

Assignment of Intellectual Property Rights in Application
Patent Application Entitled: Vector Strain Sensor System for a Wellbore
Attorney Docket: 061429-1148194 (HES Ref: 2019-IPM-103261 U1 US)

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- (d) all claims for damages by reason of past infringement of any rights under the applications or patents described in (a), (b) or (c) of this paragraph (including provisional rights to reasonable royalties pursuant to 35 U.S.C. §154(d)) and the right to sue for and collect such damages and royalties for Assignee's own use.
- Authorize and request the U.S. Patent and Trademark Office or any other U.S. or non-U.S. agency to issue to the Assignee any and all patent(s), or other rights or documents, resulting from the intellectual property, patent application(s) and patents described in paragraph 1 of this Assignment.
- 3. Agree to sign all papers and documents, including without limitation, applications, declarations, oaths and petitions, and, at the Assignee's expense, perform any other acts that are necessary in connection with prosecution of patent application(s) or intellectual property described in paragraph 1 of this Assignment and the enforcement of patent(s) or other rights resulting from such patent application(s) or intellectual property.
- 4. Agree that the terms, covenants, and conditions of this Assignment shall inure to the benefit of the Assignee, its successors, assigns and other legal representative, and shall be binding upon us, as well as our heirs, legal representatives, and assigns.
- 5. Promise and affirm that we have not entered, and will not enter, into any assignment, contract, or understanding that conflicts with this Assignment.

Dated: Dec 18, 201	7 by Bel
	Henry Clifford Bland
Witness Signature:	- Dr. J. W
Witness Printed Name:	BEN BANACK
Address:	717 23 Avenue SE
	CALGARY AB
~	T261N7

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Dated: 12/3/2019

Mikko Jaaskelainen

STATE OF Texas

COUNTY OF Harris

Before me, a Notary Public in and for the State of Jesses, on this 3st day of Mikko Jaaskelainen, who being duly sworn, signed and acknowledged the foregoing Assignment as his free act and/deed.

FALYNE PERRIN KIRKPATRICK Notary ID #12681418-9 My Commission Expires February 23, 2021

Assignment of Intellectual Property Rights in Application

Patent Application Entitled: Vector Strain Sensor System for a Wellbore

NOTARY (HUBLIC
My Commission Expires:)/23/2021

Assignment of Intellectual Property Rights in Application
Patent Application Entitled: Vector Strain Sensor System for a Wellbore
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Dated: 11/27//9

Joshua Lane Camp

STATE OF

COUNTY OF TANK

(Seal)

ALEX WEBSTER

HOTARY PUBLIC, STATE OF TEXAS

MY COMMISSION EXPIRES

JANUARY 04, 2020

10 #12884075-3

NOTARY PUBLIC
My Commission Expires:

Assignment of Intellectual Property Rights in Application
Patent Application Emitled: Vector Strain Sensor System for a Wellbore
Attorney Docket: 061429-1148194 (HES Ref: 2019-IPM-103261 UI US)

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Dated: 12/2 19	<u> The lle</u>
,	Tirumani Swaminathan
STATE OF JE4as	
COUNTY OF Aurlus	red as ad
Before me, a Notary Public in and fo	or the State of <u>Julias</u> , on this <u>2 had</u> day
of Vender, 2019, personally appear	or the State of, on this 2 nd day ared Tirumani Swaminathan , who being duly
sworn, signed and acknowledged the forego	ion Accionmannt on his force not and dond
ALEX WEBSTER	tat Wolfer
/Conf & AVELLEY MAYON DIRECT STATE OF TEACH WE	NOTARY PUBLIC
MY COMMISSION EXPIRES JANUARY 04, 2020 JANUARY 04, 2020	My Commission Expires:

Assignment of Intellectual Property Rights in Application Patent Application Entitled: Vector Strain Sensor System for a Wellbore Attorney Docket: 061429-1148194 (HES Ref: 2019-IPM-103261 UT US)

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Dated:

Eric James Davis

COUNTY OF

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the bocument to which this Before me, a Notary Public in and for the State of the St

of December, 2019, personally appeared Eric James Davis, who being duly sworn, signed and acknowledged the foregoing Assignment as his free act and deed.

(Seal)

M. E. ZAMORA COMM, #2180340 Notary Public - California & Contra Costa County / Comm. Expires Feb. 12, 2021 NOTARY PUBLIC

My Commission Expires: 02

PATENT REEL: 051317 FRAME: 0626

RECORDED: 12/18/2019