

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

EPAS ID: PAT4044172

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
DAVID FRASER HALLIDAY	09/08/2016
JON-FREDRIK HOPPERSTAD	09/08/2016
ROBERT MONTGOMERY LAWS	09/08/2016
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	WESTERNGECO L.L.C.
<b>Street Address:</b>	10001 RICHMOND AVENUE
<b>City:</b>	HOUSTON
<b>State/Country:</b>	TEXAS
<b>Postal Code:</b>	77042
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	15122948
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	
<i>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.</i>	
<b>Email:</b>	kdumas-scarber@slb.com
<b>Correspondent Name:</b>	KRISTINE DUMAS-SCARBER
<b>Address Line 1:</b>	10001 RICHMOND AVENUE
<b>Address Line 4:</b>	HOUSTON, TEXAS 77042
<b>ATTORNEY DOCKET NUMBER:</b>	IS13.4659-US-PCT
<b>NAME OF SUBMITTER:</b>	KRISTINE DUMAS-SCARBER
<b>SIGNATURE:</b>	/KRISTINE DUMAS-SCARBER/
<b>DATE SIGNED:</b>	09/09/2016
<b>Total Attachments: 6</b>	
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**Assignment**

WHEREAS, the undersigned inventors hereinafter referred to as the "Inventors," each said Inventor being listed below:

**David Fraser Halliday**, a citizen of the United Kingdom;

**Jon-Fredrik Hopperstad**, a citizen of Norway; and

**Robert Montgomery Laws**, a citizen of the United Kingdom;

Has/have invented certain new and useful improvements in

**WAVEFIELD GENERATION USING A SEISMIC VIBRATOR ARRAY**

as described and set forth in an application identified as International Application No. **PCT/US2015/021520**, (Docket No. **IS13.4659-WO-PCT**) filed **March 19, 2015**. **This assignment is effective as of March 19, 2015.**

AND WHEREAS, the "**COMPANIES**", listed in **Schedule A**, are desirous of acquiring or confirming their acquisition of the entire right, title and interest in and to said invention, inventions or improvements, and in and to said application, and in and to any and all patents, both of the United States and of all foreign countries, that may be obtained therefore **as outlined in Schedule A;**

NOW, THEREFORE, TO ALL WHOM IT MAY CONCERN, BE IT KNOWN, that the undersigned Inventors, for good and valuable considerations, the receipt and sufficiency of which hereby acknowledge, have sold, assigned, transferred and conveyed, and by this assignment do sell, assign, transfer and convey, unto said **COMPANIES**, their successors and assigns, the entire right, title and interest throughout the world, in and to the above-described invention, inventions or improvements described or set forth in said application, in any form or embodiment thereof, and in and to said application, and in and to any applications filed in any foreign country based thereon, including the right to file foreign applications under the provisions of any convention or treaty; and in and to any confirmation, divisional, continuation, continuation-in-part, or substitute application which may be filed on said invention, inventions or improvements in the United States or in any foreign country; and in and to any and all patents, certificates, utility models, reissues, extensions, additions or confirmations thereof which may be granted in the United States or in any foreign country upon said invention, inventions or improvements,

TO HAVE AND TO HOLD the same to the full end of the term or terms for which any and all such United States and foreign patents and grants may be issued on said invention, inventions or improvements.

AND said Inventors do hereby authorize and request the issuing authority to issue any and all of said United States and foreign patents on said application or applications to said **COMPANIES**,

their successors and assigns, as the assignee of the entire right, title and interest in and to the same, for the sole use and benefit of said **COMPANIES**, their successors and assigns.

AND said Inventors do hereby covenant and warrant that said Inventors have full right to convey the entire right, title and interest herein assigned free and clear of all licenses, encumbrances and liens whatsoever, and that no said Inventors has executed and will execute any instruments in conflict herewith.

AND said Inventors, for the conditions aforesaid, do hereby covenant and agree to and with the said **COMPANIES**, their successors and assigns, that each Inventor, his or her executors, administrators, or other personal representatives, shall and will do all lawful acts and things, make all rightful oaths, and make, execute and deliver any and all other instruments in writing, and any and all further applications, papers, powers, affidavits, assignments, disclaimers and other documents, which in the opinion of counsel for said **COMPANIES**, their successors and assigns, may be required or necessary in this or in any foreign country more effectually to secure to and vest in said **COMPANIES**, their successors and assigns, the entire right, title and interest in and to said invention, inventions or improvements, application or applications, patents, rights, titles, benefits, privileges, and advantages hereby sold, assigned, confirmed, transferred and conveyed.

This Agreement is entered in contemplation of and shall be construed in accordance with the laws of the State of Texas, and may not be amended or modified unless in a subsequent writing executed by the **COMPANIES**.

IN WITNESS WHEREOF I, David Fraser Halliday, have hereunto set my hand and seal this  
36 day of SEPTEMBER, 2016.

D. F. Halliday  
David Fraser Halliday

BE IT KNOWN that the aforementioned individual is to me known to be the individual described in the foregoing assignment and that on the aforementioned date I was personally present and did see him/her sign and execute the foregoing assignment; and, that he/she did acknowledge to me that he/she executed the same as his/her free act and deed for the uses and purposes therein set forth.

Robert M. Laws  
Witness- Signature

ROBERT M. LAWS  
Witness- Printed Name

CLIFTONVILLE

GEORGE ST,

CAMBRIDGE, CB4 1AJ  
Post Office Address

Ed Kiragh  
Witness- Signature

ED KIRAGH  
Witness- Printed Name

BESLYNS BARN


BESLYNS ROAD

G. BARDFIELD, M74TG.UK  
Post Office Address

IN WITNESS WHEREOF I, **Jon-Fredrik Hopperstad**, have hereunto set my hand and seal this  
8th day of Sep, 2016.

  
\_\_\_\_\_  
Jon-Fredrik Hopperstad

BE IT KNOWN that the aforementioned individual is to me known to be the individual described in the foregoing assignment and that on the aforementioned date I was personally present and did see him/her sign and execute the foregoing assignment; and, that he/she did acknowledge to me that he/she executed the same as his/her free act and deed for the uses and purposes therein set forth.

  
\_\_\_\_\_  
Witness- Signature

DAVID F HALLIDAY  
\_\_\_\_\_  
Witness- Printed Name

65 O<sub>2</sub> MEADOW  
\_\_\_\_\_

BOTTISHAM, UK  
\_\_\_\_\_

CB25 9FL  
\_\_\_\_\_  
Post Office Address

  
\_\_\_\_\_  
Witness- Signature

Nihad el Allouch  
\_\_\_\_\_  
Witness- Printed Name

11 Marion close  
\_\_\_\_\_

Cambridge, UK  
\_\_\_\_\_

CB3 0HW  
\_\_\_\_\_  
Post Office Address

IN WITNESS WHEREOF I, Robert Montgomery Laws, have hereunto set my hand and seal  
this 8th day of September, 2016.

Robert M. Laws  
Robert Montgomery Laws

BE IT KNOWN that the aforementioned individual is to me known to be the individual described in the foregoing assignment and that on the aforementioned date I was personally present and did see him/her sign and execute the foregoing assignment; and, that he/she did acknowledge to me that he/she executed the same as his/her free act and deed for the uses and purposes therein set forth.

Ed Krach  
Witness- Signature

ED KRACH  
Witness- Printed Name

BESLYNS BARN

BESLYNS ROAD

GT. BARDFIELD, CM7 4TG, UK  
Post Office Address

D. F. Halliday  
Witness- Signature

DAVID F. HALLIDAY  
Witness- Printed Name

65 OX MEADOW

BOTTISHAM, UK

CB25 9FL  
Post Office Address

**Schedule A**  
**"COMPANIES"**

**WESTERNGECO L.L.C.**

Corporation of: Delaware, USA

Located at: 10001 Richmond Avenue, Houston, Texas 77042-4299, USA

Assignee for applications in: The United States of America

**SCHLUMBERGER CANADA LIMITED**

Corporation of: Canada

Located at: 125 - 9 Avenue SE, Calgary, Alberta T2G 0P6

Assignee for applications in: Canada

**SCHLUMBERGER TECHNOLOGY B.V.**

Corporation of: The Netherlands

Located at: Parkstraat 83-89, 2514 TJG, The Hague, The Netherlands

Assignee for applications in: GCC and all other countries not otherwise listed.