

## PATENT ASSIGNMENT

Electronic Version v1.1  
 Stylesheet Version v1.1

SUBMISSION TYPE:	NEW ASSIGNMENT				
NATURE OF CONVEYANCE:	ASSIGNMENT				
CONVEYING PARTY DATA					
<table border="1"> <thead> <tr> <th>Name</th> <th>Execution Date</th> </tr> </thead> <tbody> <tr> <td>Mark A. Sitka</td> <td>11/02/2011</td> </tr> </tbody> </table>		Name	Execution Date	Mark A. Sitka	11/02/2011
Name	Execution Date				
Mark A. Sitka	11/02/2011				
RECEIVING PARTY DATA					
Name:	Halliburton Energy Services, Inc.				
Street Address:	10200 Bellaire Blvd				
City:	Houston				
State/Country:	TEXAS				
Postal Code:	77072				
PROPERTY NUMBERS Total: 1					
<table border="1"> <thead> <tr> <th>Property Type</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>PCT Number:</td> <td>US2011060618</td> </tr> </tbody> </table>		Property Type	Number	PCT Number:	US2011060618
Property Type	Number				
PCT Number:	US2011060618				
CORRESPONDENCE DATA					
Fax Number:	6057911857				
<i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i>					
Phone:	6123736900				
Email:	jolinares@slwip-rc.com				
Correspondent Name:	Schwegman Lundberg & Woessner, P.A.				
Address Line 1:	PO Box 2938				
Address Line 4:	Minneapolis, MINNESOTA 55402				
ATTORNEY DOCKET NUMBER:	1880.345WO1				
NAME OF SUBMITTER:	Janine Olinares				
<p>Total Attachments: 4          source=1880_345WO1 - Assignment#page1.tif          source=1880_345WO1 - Assignment#page2.tif          source=1880_345WO1 - Assignment#page3.tif          source=1880_345WO1 - Assignment#page4.tif</p>					

CH \$40.00 US2011060618

RECORDATION FORM COVER SHEET  
PATENTS ONLY

Atty Ref/Docket No.: 1880.345WO1

Patent and Trademark Office

To the Director of the U.S. Patent and Trademark Office: Please record the attached original documents or copy thereof.

1. Name of conveying party(ies):

Mark A. Sitka

Additional name(s) of conveying party(ies) attached?

Yes  No

3. Nature of conveyance:

Assignment

Merger

Security Agreement  Change of Name

Other

Execution Date: November 2, 2011

2. Name and address of receiving party(ies):

Name: Halliburton Energy Services, Inc.

Street Address: 10200 Bellaire Blvd

City: Houston State: TX Zip: 77072

Country: United States of America

Additional name(s) & address(es) attached?  Yes  No

4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is:

A. Patent Application No.(s)

B. Patent No.(s)

Serial No. PCT/US2011/060618, filed November 14, 2011

Additional numbers attached?  Yes  No

5. Name and address of party to whom correspondence concerning document should be mailed:

Name: Michael L. Lynch

Address:

Schwegman, Lundberg & Woessner, P.A.

P.O. Box 2938

Minneapolis, MN 55402-0938

6. Total number of applications and patents involved: 1

7. Total fee (37 CFR 3.41):\$ 40.00

Enclosed

Authorized to be charged to deposit account  
19-0743

8. Please charge any additional fees or credit any over payments to our Deposit Account No.: 19-0743

**DO NOT USE THIS SPACE**

9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Michael L. Lynch/Reg. No. 30,871

/Michael L. Lynch/

December 17, 2012

Name of Person Signing

Signature

Date

Total number of pages including cover sheet: 4

Mail documents to be recorded with required cover sheet information to:

**Commissioner of Patents and Trademarks**

**Mail Stop Assignment Recordation Services**

**P.O. Box 1450**

**Alexandria, VA 22313-1450**

**PATENT**  
**REEL: 029489 FRAME: 0963**

## ASSIGNMENT

WHEREAS, I, Mark A. Sitka, residing at 446 Richmond Place Drive, Richmond, TX 77469, made certain new and useful inventions and improvements which are described in an application for PCT Letters Patent entitled APPARATUS AND METHOD TO PRODUCE DATA PULSES IN A DRILL STRING;

WHEREAS, I hereby authorize and request the attorneys, representing Halliburton Energy Services, Inc. on this application, at Schwegman, Lundberg & Woessner, P.A., located at 121 South Eighth Street, Suite 1600, Minneapolis, MN 55402, to insert here in parentheses (Ser. No. PCT/US2011/060618 ; Filing Date: November 11, 2011 ) the filing date and application number of said application when known.

FOR GOOD AND VALUABLE CONSIDERATION, the receipt, sufficiency and adequacy of which are hereby acknowledged, the undersigned do hereby:

SELL, ASSIGN AND TRANSFER to Halliburton Energy Services, Inc. (the "Assignee"), a corporation of the State of Delaware, having a place of business at 10200 Bellaire Blvd, Houston, TX 77072, the entire right, title and interest for the United States and all foreign countries in and to: any and all inventions and improvements which are disclosed in the identified application for PCT Letters Patent, and which may be further identified below; such application and all divisional, continuing, substitute, renewal, reissue and all other applications for patent which have been or shall be filed in the United States (including all provisional and non-provisional applications), and in all foreign countries on any of such inventions and/or improvements (including any applications for utility models); all original and reissued patents which have been or shall be issued in the United States and all foreign countries on such inventions and/or improvements; and specifically including the right to file foreign applications under the provisions of any convention or treaty and to claim priority based on the identified application;

AUTHORIZE AND REQUEST that any attorney associated with U.S. PTO Customer No. 21186 may (directly or through his/her designee) delete, insert, or alter any information identifying this application, or any related application, below, after execution of this Assignment;

**Additional Application Information**

*No Provisional claim for priority is being made at this time.*

*No U.S. Non-Provisional claim for priority is being made at this time.*

*No International or foreign claim for priority is being made at this time.*

ASSIGNMENT

Docket No: 1880.345WO1

Client Ref. No. 2011-IP-041891/E-Billing

Assignors: Mark A. Sitka

Title: APPARATUS AND METHOD TO PRODUCE DATA PULSES IN A DRILL STRING

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

WARRANT AND COVENANT that no assignment, grant, mortgage, license or other agreement affecting the rights and/or property herein conveyed has been or will 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 will (1) execute all provisional, non-provisional, divisional, continuing, substitute, renewal, reissue, and all other patent applications on any and all such improvements; (2) execute all rightful oaths, declarations, assignments, powers of attorney and other papers; (3) communicate to the Assignee all facts known to the undersigned relating to such improvements 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 such improvements; and (5) take such further actions as the Assignee shall reasonably consider necessary or desirable for vesting title to such improvements in the Assignee, or for securing, maintaining and enforcing proper patent protection for such improvements;

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:

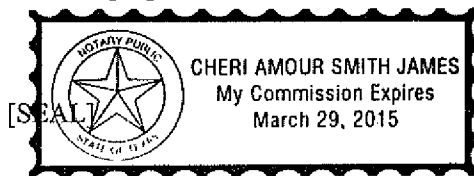
IN TESTIMONY WHEREOF, I have hereunto set my hand this 2nd day of  
November, 2011.

Mark A. Sitka

Mark A. Sitka

STATE OF Texas )  
COUNTY OF Harris )<sup>SS</sup>

On this 2nd day of November, 2011 before me personally appeared  
Mark A. Sitka to me known and known to me to be the person described in and who executed the  
foregoing instrument, and he/she duly acknowledged to me that he/she executed the same for the  
uses and purposes therein set forth.



[Signature]  
Notary Public