**PATENT ASSIGNMENT COVER SHEET**

**SUBMISSION TYPE:** NEW ASSIGNMENT

**NATURE OF CONVEYANCE:** ASSIGNMENT

### CONVEYING PARTY DATA

<table>
<thead>
<tr>
<th>Name</th>
<th>Execution Date</th>
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<tbody>
<tr>
<td>RUSSELL GILLEYLEN</td>
<td>12/11/2012</td>
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<tr>
<td>HARESH GHANSYAM</td>
<td>12/04/2012</td>
</tr>
<tr>
<td>JAMES R. STREATER JR.</td>
<td>01/04/2013</td>
</tr>
<tr>
<td>DEEPTHI SETLUR</td>
<td>12/18/2012</td>
</tr>
<tr>
<td>ALAN H. KITCHING</td>
<td>12/14/2012</td>
</tr>
<tr>
<td>SHIRAN WAAS</td>
<td>01/04/2013</td>
</tr>
<tr>
<td>MURRAY GILBERTSON</td>
<td>12/06/2012</td>
</tr>
</tbody>
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### RECEIVING PARTY DATA

- **Name:** NATIONAL OILWELL VARCO, L.P.
- **Street Address:** 7909 Parkwood Circle Dr.
- **City:** Houston
- **State/Country:** TEXAS
- **Postal Code:** 77036

### PROPERTY NUMBERS Total: 1

<table>
<thead>
<tr>
<th>Property Type</th>
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<tr>
<td>Application Number</td>
<td>14090829</td>
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### CORRESPONDENCE DATA

- **Fax Number:** (713)226-6215
- **Phone:** 7132266000
- **Email:** patmail@porterhedges.com

*Correspondence will be sent via US Mail when the email attempt is unsuccessful.*

- **Correspondent Name:** DEREK V. FORINASH
- **Address Line 1:** P.O. BOX 4078
- **Address Line 2:** PORTER HEDGES, LLP
- **Address Line 4:** HOUSTON, TEXAS 77521

**ATTORNEY DOCKET NUMBER:** 012436-0901
<table>
<thead>
<tr>
<th>NAME OF SUBMITTER:</th>
<th>DEREK V. FORINASH</th>
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<tbody>
<tr>
<td>Signature:</td>
<td>/Derek V. Forinash/</td>
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<tr>
<td>Date:</td>
<td>11/26/2013</td>
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Total Attachments: 8
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ASSIGNMENT

IN CONSIDERATION OF TEN DOLLARS ($10.00) cash in hand paid to us by NATIONAL OILWELL VARCO, L.P., and other valuable consideration, the receipt and sufficiency of which are hereby acknowledged, we GILLEYLEN, Russell; GHANSYAM, Haresh; STREATER, James R. Jr.; SETLUR, Deepthi; KITCHING, Alan; WAAS, Shiran; and GILBERTSON, Murray, ("ASSIGNORS"), having made an invention in "DOWNHOLE PULSE GENERATING DEVICE FOR THROUGH-BORE OPERATIONS", do hereby ASSIGN, SELL and CONVEY to said NATIONAL OILWELL VARCO, L.P., a corporation having a business address of 7909 Parkwood Circle Dr., Houston, TX 77036 ("ASSIGNEE"), its successors and assigns, the entire right, title and interest throughout the world in and to:

1. Said invention in "DOWNHOLE PULSE GENERATING DEVICE FOR THROUGH-BORE OPERATIONS";

2. United States of America Provisional Application Serial No. 61/732,049, filed November 30, 2012, entitled "DOWNHOLE PULSE GENERATING DEVICE FOR THROUGH-BORE OPERATIONS";

3. All applications for patent or like protection on said invention that have now been or may in the future be made by us or our legal representatives, including any continuation, continuation-in-part and any other utility applications that may be based on this invention, whether in the United States of America or any other place anywhere in the world;

4. All patents and like protection that have now been or may in the future be granted on said invention to us or our legal representatives, whether in the United States of America or in any other country or place anywhere in the world;

5. All substitutions for and divisions, continuations, continuations-in-part, renewals, reissues, extensions, and the like of said applications and patents and like grants, including without limitation, those obtained or permissible under past, present and future laws and statutes;

6. All rights of action on account of past, present and future unauthorized use of said invention and for infringement of said patents and like protection;

7. The right in ASSIGNEE to file in its name applications for patents and like protection for said invention in any country or countries foreign to the United States; and
8. All international rights of priority associated with said invention, applications, patents, and like protection;

and we covenant that we, and our heirs, legal representatives, assigns, administrators, and executors, will, at the expense of ASSIGNEE, its successors and assigns, execute all papers and perform such other acts as may be reasonably necessary to give ASSIGNEE, its successors and assigns, the full benefit of this Assignment.

EXECUTED on the date indicated below, opposite our signatures.

ASSIGNOR

Date: 12-11-2012

GILLEYLEN, Russell

THE STATE OF TEXAS

COUNTY OF HARRIS

BEFORE ME, the undersigned authority, on this day personally appeared GILLEYLEN, Russell, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 11th day of DECEMBER, 2012.

Pamela Mary Ridgway
Notary Public in and for the State of TEXAS

My Commission Expires: April 19, 2014

************
EXECUTED on the date indicated below, opposite our signatures.

ASSIGNOR

Date: December 4, 2017.

GHANSYAM, Haresh

THE STATE OF TEXAS

COUNTY OF HARRIS

BEFORE ME, the undersigned authority, on this day personally appeared GHANSYAM, Haresh, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 4th day of December, 2012.

Notary Public in and for the State of TEXAS

My Commission Expires:

April 19, 2014
EXECUTED on the date indicated below, opposite our signatures.

ASSIGNOR

Date: 1/4/2013

THE STATE OF TEXAS

COUNTY OF HARRIS

BEFORE ME, the undersigned authority, on this day personally appeared STREATER, James R. Jr., known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 4th day of January, 2013.

My Commission Expires:

May 23rd, 2014

********************
EXECUTED on the date indicated below, opposite our signatures.

ASSIGNOR

Date: 12/18/2012

SETLUR, Deepthi

THE STATE OF Texas §

COUNTY OF Harris §

BEFORE ME, the undersigned authority, on this day personally appeared SETLUR, Deepthi, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 18th day of

December, 2012.

Nataly Felix
NOTARY PUBLIC
STATE OF TEXAS
MY COMM. EXPIRES 02/16/15

My Commission Expires:

2/16/15

************
**EXECUTED on the date indicated below, opposite our signatures.**

ASSIGNOR

Date: 14-Dec-2012

KITCHING, Alan

THE STATE OF TX
COUNTY OF Harris

BEFORE ME, the undersigned authority, on this day personally appeared KITCHING, Alan, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 14th day of December, 2012.

[SEAL]

My Commission Expires:

12-14-13

************
EXECUTED on the date indicated below, opposite our signatures.

ASSIGNOR

Date: 1/4/2013  
WAAS, Shiran

THE STATE OF Texas  
COUNTY OF Harris

BEFORE ME, the undersigned authority, on this day personally appeared WAAS, Shiran, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 04 day of January, 2013  
Smith  
Notary Public in and for the State of Texas

My Commission Expires: 04-10-2016

**********
EXECUTED on the date indicated below, opposite our signatures.

ASSIGNOR

Date: 12/6/2012

GILBERTSON, Murray

THE STATE OF TEXAS §
COUNTY OF HARRIS §

BEFORE ME, the undersigned authority, on this day personally appeared GILBERTSON, Murray, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 6th day of December, 2012.

KATHY A. DEAN
Notary Public, State of Texas
My Commission Expires March 21, 2015

Notary Public in and for the State of Texas

My Commission Expires: March 21, 2015

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