

## PATENT ASSIGNMENT COVER SHEET

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EPAS ID: PAT6570511

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| <b>SUBMISSION TYPE:</b>                                                                                                                                                                         | NEW ASSIGNMENT                   |
| <b>NATURE OF CONVEYANCE:</b>                                                                                                                                                                    | ASSIGNMENT                       |
| <b>CONVEYING PARTY DATA</b>                                                                                                                                                                     |                                  |
| <b>Name</b>                                                                                                                                                                                     | <b>Execution Date</b>            |
| ECOLAB USA INC.                                                                                                                                                                                 | 06/03/2020                       |
| <b>RECEIVING PARTY DATA</b>                                                                                                                                                                     |                                  |
| <b>Name:</b>                                                                                                                                                                                    | CHAMPIONX USA INC.               |
| <b>Street Address:</b>                                                                                                                                                                          | 11177 S. STADIUM DRIVE           |
| <b>City:</b>                                                                                                                                                                                    | SUGAR LAND                       |
| <b>State/Country:</b>                                                                                                                                                                           | TEXAS                            |
| <b>Postal Code:</b>                                                                                                                                                                             | 77498                            |
| <b>PROPERTY NUMBERS Total: 1</b>                                                                                                                                                                |                                  |
| <b>Property Type</b>                                                                                                                                                                            | <b>Number</b>                    |
| <b>Application Number:</b>                                                                                                                                                                      | 17167314                         |
| <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>                                                                                                                                                                                   | stalley@kaganbinder.com          |
| <b>Correspondent Name:</b>                                                                                                                                                                      | C/O KAGAN BINDER PLLC            |
| <b>Address Line 1:</b>                                                                                                                                                                          | 221 MAIN ST N                    |
| <b>Address Line 2:</b>                                                                                                                                                                          | SUITE 200, MAPLE ISLAND BUILDING |
| <b>Address Line 4:</b>                                                                                                                                                                          | STILLWATER, MINNESOTA 55082      |
| <b>ATTORNEY DOCKET NUMBER:</b>                                                                                                                                                                  | CHX0057/US/2(PT10648USC1)        |
| <b>NAME OF SUBMITTER:</b>                                                                                                                                                                       | SONJA TALLEY                     |
| <b>SIGNATURE:</b>                                                                                                                                                                               | /Sonja Talley/                   |
| <b>DATE SIGNED:</b>                                                                                                                                                                             | 02/25/2021                       |
| <b>Total Attachments: 128</b>                                                                                                                                                                   |                                  |
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**PATENT ASSIGNMENT**

This PATENT ASSIGNMENT (this “Assignment”), dated as of June 3, 2020 (the “Effective Date”), is by and between Ecolab USA Inc., a Delaware corporation (“Assignor”) and ChampionX USA Inc., a Delaware corporation (“Assignee”), (each a “Party” and collectively, the “Parties”). Capitalized terms not otherwise defined in this Assignment will have the meanings ascribed to such terms in the Separation Agreement (as defined below).

**WHEREAS**, certain Affiliates of Assignor and certain Affiliates of Assignee have entered into that certain Separation and Distribution Agreement, dated as of December 18, 2019 (the “Separation Agreement”), which contemplates the assignment of the assets described herein; and

**WHEREAS**, pursuant to the Separation Agreement, Assignor has agreed to assign, transfer and convey to Assignee all of Assignor’s right, title, and interest in and to the Newco Assets, including the Patents set forth on Schedule A hereto (the “Assigned Patents”).

**NOW, THEREFORE**, in consideration of the foregoing and the covenants and agreements contained in this Assignment, the receipt and sufficiency of which are hereby acknowledged, the Parties hereby agree as follows:

1. Conveyance. Assignor hereby assigns, transfers and conveys to Assignee all of Assignor’s right, title and interest in and to the Assigned Patents, together with any and all (a) related continuations, continuations-in-part, divisionals, reissues, reexaminations, substitutions, extensions, and foreign equivalents thereof and (b) priority rights derived from any the Assigned Patents, or the items described in the foregoing subsection (a), by virtue of the International Convention for the Protection of Industrial Property and any other rights provided under applicable treaties or conventions, including rights in any and all provisional applications, together with all rights and remedies against past, present, and future infringement, misappropriation, or other violation thereof, including the right to enforce the foregoing and to sue for and recover profits and damages for any and all infringements, misappropriations, or other violations thereof, whether past, present or future, to the full end of the term or terms for which said patents may be granted, as fully and entirely as the same would have been held and enjoyed by Assignor without this assignment.

2. Recordation; Further Assurances. Assignor and Assignee shall each take any and all additional actions as may be reasonably necessary to effect the transactions contemplated hereby, including Assignor’s execution of individual assignment documentation prepared by Assignee at Assignee’s expense for filing with the authorities of each individual jurisdiction. Assignor and Assignee authorize and request that the United States Patent and Trademark Office and the corresponding entities or agencies in any applicable foreign jurisdictions, record Assignee as the assignee and owner of the Assigned Patents (including the Patents set forth on Schedule A) and issue the Patents from any pending applications included in the Assigned Patents to Assignee upon issuance or registration.

3. Successors and Assigns. The provisions of this Assignment and the obligations and rights hereunder shall be binding upon, inure to the benefit of and be enforceable by (and against) the Parties and their respective successors and permitted transferees and assigns.

4. Counterparts. This Assignment may be executed in more than one counterpart, all of which shall be considered one and the same agreement, and shall become effective when one or more such counterparts have been signed by each of the Parties and delivered to each of the Parties.

5. Title and Headings. Titles and headings to sections herein are inserted for the convenience of reference only and are not intended to be a part of or to affect the meaning or interpretation of this Assignment.

6. Conflict. Nothing contained in this Assignment is intended to or shall be deemed to modify, alter, amend or otherwise change any of the rights or obligations of Assignee or Assignor under the Separation Agreement.

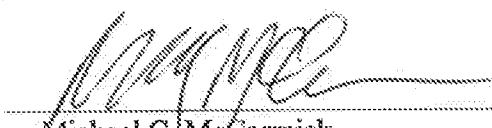
7. Governing Law. This Assignment and any dispute arising out of, in connection with or relating to this Assignment shall be governed by and construed in accordance with the Laws of the State of Delaware, without giving effect to the conflicts of laws principles thereof.

[Signature Page Follows]

IN WITNESS WHEREOF, Assignor and Assignee have duly executed this Assignment as of the date first written above.

ASSIGNOR:

Ecolab USA Inc.

By: 

Name: Michael C. McCormick

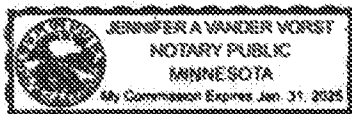
Title: Executive Vice President, General Counsel and Secretary

STATE OF Minnesota       )  
COUNTY OF Ramsey       ) ss.

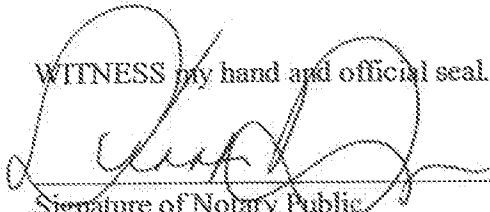
On this 25 day of August, 2020 before me Jennifer Vander Vorst

Personally appeared Michael C. McCormick, proved to me on the basis of satisfactory evidence to the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of Minnesota that the foregoing paragraph is true and correct.



WITNESS my hand and official seal.

  
Signature of Notary Public

*Signature Page to Patent Assignment*

Acknowledged and Accepted:

ASSIGNEE:

ChampionX USA Inc.

By: [Signature]  
Name: Deric Bryant  
Title: President

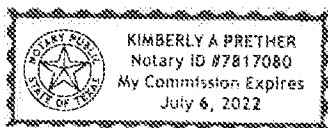
STATE OF Texas  
COUNTY OF Montgomery ss.

On this 13th day of August, 2020 before me Kim Prother

Personally appeared Deric Bryant, proved to me on the basis of satisfactory evidence to the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of Texas that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.



[Signature]  
Signature of Notary Public

*Signature Page to Patent Assignment*

**PATENT**  
**REEL: 055408 FRAME: 0173**

SCHEDULE A TO PATENT ASSIGNMENT

| Country Name  | TITLE                                                                                                                                                                                                                          | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
| Great Britain | Zwitterionic water-soluble substituted imine corrosion inhibitor                                                                                                                                                               | 20030024149        | 10/27/1999 | 2394224       | 6/2/2004   |
| Canada        | ZWITTERIONIC WATER-SOLUBLE SUBSTITUTED IMINE CORROSION INHIBITORS                                                                                                                                                              | 2289163            | 11/8/1999  | 2289163       | 1/4/2011   |
| Great Britain | ZWITTERIONIC WATER-SOLUBLE SUBSTITUTED IMINE CORROSION INHIBITORS                                                                                                                                                              | 3241494            | 10/27/1999 | 2394224       | 6/2/2004   |
| Norway        | Zwitterionske vannloselige imin-korrosjonsinhibitorer, sammensetninger omfattende korrosjonsinhibitorer, og en fremgangsmate for a inhibere korrosjoner pa jernholdige metalloverflater som er i kontakt med korrosive fluider | 19995234           | 10/26/1999 | 326021        | 9/1/2008   |
| Canada        | METHOD FOR MONITORING FOAM AND GAS CARRY UNDER AND FOR CONTROLLING THE ADDITION OF FOAM INHIBITING CHEMICALS.                                                                                                                  | 2275678            | 6/16/1999  | 2275678       | 9/9/2008   |
| Great Britain | METHOD FOR MONITORING FOAM AND GAS CARRY UNDER AND FOR CONTROLLING THE ADDITION OF FOAM INHIBITING CHEMICALS.                                                                                                                  | 19990012715        | 6/1/1999   | 2338789       | 5/28/2003  |
| Norway        | Fremgangsmate for a overvake skumproblemer, samt for a kontrollere tilsetning av skumdempere                                                                                                                                   | 19992965           | 6/17/1999  | 331631        | 2/13/2012  |
| United States | DEMULSIFICATION OF WATER-IN-OIL EMULSIONS.                                                                                                                                                                                     | 9243972            | 2/4/1999   | 6638983       | 10/28/2003 |
| Canada        | DEMULSIFICATION OF WATER-IN-OIL EMULSIONS.                                                                                                                                                                                     | 2293196            | 12/24/1999 | 2293196       | 8/26/2008  |
| Great Britain | Demulsification of water-in-oil emulsions                                                                                                                                                                                      | 20000001329        | 1/20/2000  | 2346378       | 2/12/2003  |

| Country Name  | TITLE                                                                                                                    | APPLICATION<br>NUMBER | DATE FILED | PATENT<br>NUMBER | GRANT<br>DATE |
|---------------|--------------------------------------------------------------------------------------------------------------------------|-----------------------|------------|------------------|---------------|
| Norway        | Demulgering av vann-i-olje emulsjoner                                                                                    | 20000234              | 1/17/2000  | 317645           | 11/29/2004    |
| Canada        | IMPROVED ACID CONTROL INHIBITOR                                                                                          | 2309414               | 5/24/2000  | 2309414          | 12/9/2008     |
| Netherlands   | IMPROVED ACID CONTROL INHIBITOR                                                                                          | 1015012               | 4/25/2000  | 1015012          | 11/30/2000    |
| United States | IMPROVED ACID CONTROL INHIBITOR                                                                                          | 9321240               | 5/27/1999  | 6117364          | 9/12/2000     |
| Canada        | CORROSION INHIBITOR COMPOSITIONS                                                                                         | 2291417               | 11/25/1999 | 2291417          | 1/20/2009     |
| United States | CORROSION INHIBITOR COMPOSITIONS                                                                                         | 9268381               | 3/15/1999  | 6303079          | 10/16/2001    |
| Great Britain | Corrosion inhibiting compositions and methods                                                                            | 20030011582           | 12/14/1999 | 2385324          | 10/15/2003    |
| Great Britain | Corrosion inhibiting compositions and methods                                                                            | 19990029566           | 12/14/1999 | 2351285          | 8/27/2003     |
| Norway        | Anvendelse samt fremgangsmate for fremstilling av korrosjonsinhibitorsammensetninger                                     | 19996320              | 12/20/1999 | 321420           | 5/8/2006      |
| United States | CORROSION INHIBITOR COMPOSITIONS                                                                                         | 9268604               | 3/15/1999  | 6488868          | 12/3/2002     |
| United States | CORROSION INHIBITOR COMPOSITIONS INCLUDING QUATERNIZED COMPOUNDS                                                         | 10167628              | 6/12/2002  | 6696572          | 2/24/2004     |
| Canada        | CORROSION INHIBITOR COMPOSITIONS                                                                                         | 2289408               | 11/15/1999 | 2289408          | 10/26/2010    |
| Great Britain | Corrosion inhibitor compositions and methods of making them                                                              | 19990026862           | 11/12/1999 | 2348199          | 3/3/2004      |
| Norway        | Korrosjonsinhibitor sammenstillinger samt metode for a fremstille disse                                                  | 19995578              | 11/12/1999 | 323111           | 1/2/2007      |
| United States | CORROSION INHIBITOR COMPOSITIONS                                                                                         | 9268377               | 3/15/1999  | 6448411          | 9/10/2002     |
| United States | METHOD OF REDUCING THE CONCENTRATION OF METAL SOAPS OF PARTIALLY ESTERIFIED PHOSPHATES FROM HYDROCARBON FLOWBACK FLUIDS. | 9392171               | 9/8/1999   | 6133205          | 10/17/2000    |
| United States | COMPOSITIONS AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR                                  | 10233950              | 9/3/2002   | 6984705          | 1/10/2006     |

| Country Name           | TITLE                                                                                   | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|------------------------|-----------------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
| United Arab Emirates   | COMPOSITIONS AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR | 3852002            | 5/23/2001  | 559           | 9/27/2015  |
| Australia              | COMPOSITIONS AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR | 2001266600         | 5/23/2001  | 2001266600    | 1/18/2007  |
| Bahrain                | COMPOSITIONS AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR | 23832002           | 12/23/2002 | BP 1470       | 10/7/2004  |
| Brazil                 | COMPOSITIONS AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR | PI01116134         | 5/23/2001  | PI0111613-4   | 11/3/2012  |
| Canada                 | COMPOSITIONS AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR | 2408312            | 5/23/2001  | 2408312       | 8/18/2009  |
| Denmark                | A method of recovering hydrocarbon fluids from a subterranean reservoir                 | 20010944162T       | 5/23/2001  | 1290310       | 7/2/2007   |
| European Patent Office | COMPOSITIONS AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR | 19441625           | 5/23/2001  | 1290310       | 3/21/2007  |
| Great Britain          | COMPOSITIONS AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR | 19441625           | 5/23/2001  | 1290310       | 3/21/2007  |

| Country Name  | TITLE                                                                                                                                   | APPLICATION<br>NUMBER | DATE FILED | PATENT<br>NUMBER | GRANT<br>DATE |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------|------------------|---------------|
| Indonesia     | COMPOSITIONS AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR                                                 | WOO020020280<br>8     | 5/23/2001  | ID0019951        | 10/24/2007    |
| Kuwait        | COMPOSITIONS AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR                                                 | PA1352002             | 5/23/2001  |                  |               |
| Mexico        | COMPOSITIONS AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR                                                 | PAA02011661           | 5/23/2001  | 262622           | 11/13/2008    |
| Netherlands   | COMPOSITIONS AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR                                                 | 19441625              | 5/23/2001  | 1290310          | 3/21/2007     |
| Norway        | Frengangsamate for a modifisere permeabiliteten for vann til en underjordisk formasjon.                                                 | 20025581              | 11/21/2002 | 330481           | 4/26/2011     |
| New Zealand   | Expandable cross-linked polymeric microparticle compositions and method for recovering hydrocarbon fluids from a subterranean reservoir | 522534                | 5/23/2001  | 522534           | 10/6/2005     |
| Russia        | COMPOSITION AND METHOD FOR WITHDRAWAL OF HYDROCARBON FLUIDS FROM UNDERGROUND LAYER                                                      | 20020133464           | 5/23/2001  | 2256071          | 7/10/2005     |
| United States | COMPOSITIONS AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR                                                 | 9593197               | 6/14/2000  | 6454003          | 9/24/2002     |
| Viet Nam      | COMPOSITIONS AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR                                                 | 1200201111            | 5/23/2001  | 10103            | 3/6/2012      |

| Country Name         | TITLE                                                                                                                               | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
| United States        | METHOD OF RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR                                                               | 10251742           | 9/20/2002  | 6729402       | 5/4/2004   |
| United States        | COMPOSITION FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR                                                         | 10251006           | 9/20/2002  | 7300973       | 11/27/2007 |
| United States        | DEMULSIFIERS, THEIR PREPARATION AND USE IN OIL BEARING FORMATIONS                                                                   | 10034661           | 12/20/2001 | 7504438       | 3/17/2009  |
| United States        | DELAYED RELEASE BREAKERS IN GELLED HYDROCARBONS                                                                                     | 9430935            | 11/1/1999  | 6187720       | 2/13/2001  |
| United States        | METHOD AND COMPOSITION FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR                                              | 10034276           | 12/20/2001 | 6569983       | 5/27/2003  |
| United Arab Emirates | USE OF DISPERSION POLYMERS AS FRICTION REDUCERS IN AQUEOUS FRACTURING FLUIDS                                                        | P11205             | 4/3/2003   |               |            |
| Argentina            | USE OF DISPERSION POLYMERS AS FRICTION REDUCERS IN AQUEOUS FRACTURING FLUIDS                                                        | P030101172         | 4/4/2003   | AR 039247     | 5/28/2010  |
| Australia            | USE OF DISPERSION POLYMERS AS FRICTION REDUCERS IN AQUEOUS FRACTURING FLUIDS                                                        | 2003226237         | 4/3/2003   | 2003226237    | 1/10/2008  |
| Brazil               | method of reducing friction resulting from turbulent flow in an aqueous fracturing fluid into a fracturing process in the oil field | 20030308889        | 4/3/2003   | P10308889-8   | 5/31/2016  |
| Canada               | USE OF DISPERSION POLYMERS AS FRICTION REDUCERS IN AQUEOUS FRACTURING FLUIDS                                                        | 2479210            | 4/3/2003   | 2479210       | 1/4/2011   |
| Colombia             | USE OF DISPERSION POLYMERS AS FRICTION REDUCERS IN AQUEOUS FRACTURING FLUIDS                                                        | 4097180            | 4/3/2003   | 340           | 11/30/2009 |
| Mexico               | USE OF DISPERSION POLYMERS AS FRICTION REDUCERS IN AQUEOUS FRACTURING FLUIDS                                                        | PAA04009500        | 4/3/2003   | 243829        | 2/19/2007  |

| Country Name           | TITLE                                                                                        | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|------------------------|----------------------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
| Norway                 | USE OF DISPERSION POLYMERS AS FRICTION REDUCERS IN AQUEOUS FRACTURING FLUIDS                 | 20044777           | 4/3/2003   |               |            |
| Russia                 | USE OF POLYMER IN FORM OF DISPERSION AS FRICTION REDUCING AGENT IN AQUEOUS FRACTURING FLUIDS | 2004132196         | 4/3/2003   | 2363719       | 8/10/2009  |
| United States          | USE OF DISPERSION POLYMERS AS FRICTION REDUCERS IN AQUEOUS FRACTURING FLUIDS                 | 10115852           | 4/3/2002   | 6787506       | 9/7/2004   |
| Australia              | USE OF ANIONIC DISPERSION POLYMERS AS VISCOSITY MODIFIERS IN AQUEOUS DRILLING FLUIDS.        | 2003247539         | 6/16/2003  | 2003247539    | 4/23/2009  |
| Brazil                 | USE OF ANIONIC DISPERSION POLYMERS AS VISCOSITY MODIFIERS IN AQUEOUS DRILLING FLUIDS.        | PI03114872         | 6/16/2003  | PI0311487-2   | 12/16/2014 |
| Canada                 | USE OF ANIONIC DISPERSION POLYMERS AS VISCOSITY MODIFIERS IN AQUEOUS DRILLING FLUIDS.        | 2486407            | 6/16/2003  | 2486407       | 8/17/2010  |
| Denmark                | Use of the anionic dispersion polymers as viscosity modifiers in aqueous drilling fluids     | 20030760425T       | 6/16/2003  | 1551935       | 2/27/2012  |
| European Patent Office | USE OF ANIONIC DISPERSION POLYMERS AS VISCOSITY MODIFIERS IN AQUEOUS DRILLING FLUIDS.        | 37604253           | 6/16/2003  | 1551935       | 1/25/2012  |
| Great Britain          | USE OF ANIONIC DISPERSION POLYMERS AS VISCOSITY MODIFIERS IN AQUEOUS DRILLING FLUIDS.        | 37604253           | 6/16/2003  | 1551935       | 1/25/2012  |
| Italy                  | USE OF ANIONIC DISPERSION POLYMERS AS VISCOSITY MODIFIERS IN AQUEOUS DRILLING FLUIDS.        | 37604253           | 6/16/2003  | 1551935       | 1/25/2012  |
| Mexico                 | USE OF ANIONIC DISPERSION POLYMERS AS VISCOSITY MODIFIERS IN AQUEOUS DRILLING FLUIDS.        | PAA04012427        | 6/16/2003  | 286978        | 5/27/2011  |
| Netherlands            | USE OF ANIONIC DISPERSION POLYMERS AS VISCOSITY MODIFIERS IN AQUEOUS DRILLING FLUIDS.        | 37604253           | 6/16/2003  | 1551935       | 1/25/2012  |

| Country Name  | TITLE                                                                                                                                                                                                              | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
| Norway        | Anvendelse av anioniske dispergeringspolymerer som viskositetsmodifiseringsmidler i vandige borevæsker                                                                                                             | 20050112           | 1/10/2005  | 338071        | 7/25/2016  |
| Russia        | UTILIZATION OF ANIONIC DISPERSED POLYMERS AS VISCOSITY MODIFIERS FOR WATER-BASED DRILLING FLUIDS                                                                                                                   | 2005100845         | 6/16/2003  | 2301244       | 6/20/2007  |
| United States | USE OF ANIONIC DISPERSION POLYMERS AS VISCOSITY MODIFIERS IN AQUEOUS DRILLING FLUIDS.                                                                                                                              | 10173253           | 6/17/2002  | 6831042       | 12/14/2004 |
| Angola        | PHOSPHATE ESTERS DEMULSIFIER COMPOSITION                                                                                                                                                                           | 8708               | 3/12/2004  | 621A          | 2/2/2009   |
| Azerbaijan    | PHOSPHATE ESTERS DEMULSIFIER COMPOSITION                                                                                                                                                                           | A20050233          | 3/10/2004  | I20080152     | 9/9/2008   |
| Canada        | PHOSPHATE ESTERS DEMULSIFIER COMPOSITION                                                                                                                                                                           | 2519172            | 3/10/2004  | 2519172       | 11/22/2011 |
| Great Britain | Phosphoric ester demulsifier composition                                                                                                                                                                           | 20050018795        | 3/10/2004  | 2414482       | 11/28/2007 |
| Norway        | Fosforester demulgatorer, demulgator sammensetning omfattende nevnte fosforester demulgatorer, fremgangsmåte for å fremstille en fosforester demulgator, og fremgangsmåte for å gjenoppløse en vann-i-oljeemulsjon | 20054747           | 10/14/2005 | 336246        | 6/29/2015  |
| United States | PHOSPHATE ESTERS DEMULSIFIER COMPOSITION                                                                                                                                                                           | 10389447           | 3/14/2003  | 7217779       | 5/15/2007  |
| United States | METHOD OF PREPARING QUATERNIZED AMIDAMINE SURFACTANTS                                                                                                                                                              | 10338442           | 1/8/2003   | 6964940       | 11/15/2005 |
| United States | QUATERNIZED AMIDO CYCLIC AMINE SURFACTANT                                                                                                                                                                          | 10244651           | 9/16/2002  | 7053127       | 5/30/2006  |
| Angola        | POLYETHER POLYESTERS HAVING ANIONIC FUNCTIONALITY                                                                                                                                                                  | 8651               | 1/24/2004  | 603A          | 2/2/2009   |
| Azerbaijan    | POLYETHER POLYESTERS HAVING ANIONIC FUNCTIONALITY                                                                                                                                                                  | a20050181          | 1/22/2004  | I20080153     | 9/9/2008   |

| Country Name  | TITLE                                                                                  | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
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| Canada        | POLYETHER POLYESTERS HAVING ANIONIC FUNCTIONALITY                                      | 2510351            | 1/22/2004  | 2510351       | 6/14/2011  |
|               | POLYETHER POLYESTERS HAVING ANIONIC FUNCTIONALITY                                      | 47044912           | 1/22/2004  | 1587598       | 7/24/2019  |
| Kazakhstan    | POLYETHER POLYESTERS HAVING ANIONIC FUNCTIONALITY                                      | 200515461          | 1/22/2004  | 19578         | 1/17/2011  |
| Russia        | POLYESTERS, CONTAINING ESTER AND ETHER GROUPS, WITH ANIONIC FUNCTIONALITY              | 2005126727         | 1/22/2004  | 2361893       | 7/20/2009  |
| United States | POLYETHER POLYESTERS HAVING ANIONIC FUNCTIONALITY                                      | 10350462           | 1/24/2003  | 7041707       | 5/9/2006   |
| Canada        | METHOD AND COMPOSITION FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR | 2538753            | 9/10/2004  | 2538753       | 4/16/2013  |
| Great Britain | METHOD AND COMPOSITION FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR | 20060005214        | 9/10/2004  | 2423989       | 2/27/2008  |
| India         | METHOD AND COMPOSITION FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR | 750KOLNP06         | 9/10/2004  | 236703        | 11/17/2009 |
| Mexico        | METHOD AND COMPOSITION FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR | 2006PA02801        | 9/10/2004  | 337349        | 2/29/2016  |
| Malaysia      | METHOD AND COMPOSITION FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR | PI20043702         | 9/12/2003  | MY140843A     | 1/29/2010  |

| Country Name  | TITLE                                                                                              | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
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| Oman          | METHOD AND COMPOSITION FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR             | OMP200600014       | 9/10/2004  |               |            |
| Russia        | METHOD AND COMPOSITION FOR EXTRACTING HYDROCARBON FLUIDS OUT OF UNDERGROUND FORMATION              | 2006112006         | 9/10/2004  | 2383560       | 3/10/2010  |
| United States | METHOD AND COMPOSITION FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR             | 10661669           | 9/12/2003  | 7417011       | 8/26/2008  |
| Brazil        | CLAY STABILIZATION IN SUB-SURFACE FORMATIONS                                                       | PI05090431         | 3/24/2005  |               |            |
| United States | BIS-QUATERNARY AMMONIUM SALT CORROSION INHIBITORS                                                  | 10891575           | 7/15/2004  | 8999315       | 4/7/2015   |
| United States | ENVIRONMENTALLY FRIENDLY DEMULSIFIERS FOR CRUDE OIL EMULSIONS                                      | 12489079           | 6/22/2009  | 8802740       | 8/12/2014  |
| Angola        | ENVIRONMENTALLY FRIENDLY DEMULSIFIERS FOR CRUDE OIL EMULSIONS                                      | 831                | 12/20/2005 |               |            |
| Brazil        | A water-in-oil type demulsifier, and a method for decomposing an emulsion comprising oil and water | 2005PI17206        | 11/2/2005  | PI0517206-3   | 5/9/2017   |
| Canada        | ENVIRONMENTALLY FRIENDLY DEMULSIFIERS FOR CRUDE OIL EMULSIONS                                      | 2591450            | 11/2/2005  | 2591450       | 5/8/2012   |
| Nigeria       | ENVIRONMENTALLY FRIENDLY DEMULSIFIERS FOR CRUDE OIL EMULSIONS                                      | 37005              | 12/15/2006 | RP16473       | 3/26/2009  |
| Norway        | Miljøvennlige demulgatorer for råolje emulsjoner.                                                  | 20072956           | 6/11/2007  | 343001        | 9/24/2018  |
| United States | ENVIRONMENTALLY FRIENDLY DEMULSIFIERS FOR CRUDE OIL EMULSIONS                                      | 11017390           | 12/20/2004 | 7566744       | 7/28/2009  |

| Country Name           | TITLE                                                                                                                   | APPLICATION NUMBER | DATE FILED | PATENT NUMBER    | GRANT DATE |
|------------------------|-------------------------------------------------------------------------------------------------------------------------|--------------------|------------|------------------|------------|
| United States          | MONO AND BIS-ESTER DERIVATIVES OF PYRIDINIUM AND QUINOLINIUM COMPOUNDS AS ENVIRONMENTALLY FRIENDLY CORROSION INHIBITORS | 12882686           | 9/15/2010  | 8585930          | 11/19/2013 |
| Brazil                 | SILOXANE CROSS-LINKED DEMULSIFIERS                                                                                      | PI07152868         | 3/20/2009  | PI07152868       | 12/26/2017 |
| Canada                 | SILOXANE CROSS-LINKED DEMULSIFIERS                                                                                      | 2663575            | 9/21/2007  | 2663575          | 4/15/2014  |
| European Patent Office | SILOXANE CROSS-LINKED DEMULSIFIERS                                                                                      | 78429792           | 9/21/2007  | 2063971          | 6/28/2017  |
| Great Britain          | SILOXANE CROSS-LINKED DEMULSIFIERS                                                                                      | 78429792           | 9/21/2007  | 2063971          | 6/28/2017  |
| Nigeria                | SILOXANE CROSS-LINKED DEMULSIFIERS                                                                                      | NGC200946          | 4/2/2009   | NG/C/2009/4<br>6 | 7/6/2009   |
| Netherlands            | SILOXANE CROSS-LINKED DEMULSIFIERS                                                                                      | 78429792           | 9/21/2007  | 2063971          | 6/28/2017  |
| Norway                 | Siloksan kryssbundede demulgatorer                                                                                      | 20091135           | 3/17/2009  | 341621           | 12/11/2017 |
| United States          | SILOXANE CROSS-LINKED DEMULSIFIERS                                                                                      | 11858602           | 9/20/2007  | 7981979          | 7/19/2011  |
| Australia              | DEPOSIT REMOVAL PROBE AND METHOD OF USE                                                                                 | 2007333301         | 12/4/2007  | 2007333301       | 8/15/2013  |
| Brazil                 | DEPOSIT REMOVAL PROBE AND METHOD OF USE                                                                                 | PI07178999         | 6/4/2009   |                  |            |
| Canada                 | DEPOSIT REMOVAL PROBE AND METHOD OF USE                                                                                 | 2671486            | 12/4/2007  | 2671486          | 1/17/2017  |
| European Patent Office | DEPOSIT REMOVAL PROBE AND METHOD OF USE                                                                                 | 78549177           | 12/4/2007  |                  |            |
| United States          | DEPOSIT REMOVAL PROBE AND METHOD OF USE                                                                                 | 11608065           | 12/7/2006  | 7628060          | 12/8/2009  |
| United States          | CORROSION INHIBITOR COMPOSITION COMPRISING A BUILT-IN INTENSIFIER                                                       | 11612770           | 12/19/2006 | 7842127          | 11/30/2010 |
| United States          | ALKOXYLATED SORBITAN ESTERS AS CRUDE OIL EMULSION BREAKERS                                                              | 13753011           | 1/29/2013  | 9102791          | 8/11/2015  |
| Canada                 | PURIFICATION OF OIL SANDS POND WATER                                                                                    | 2704741            | 10/10/2008 | 2704741          | 5/2/2017   |

| Country Name           | TITLE                                                                                                                                         | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
|                        | METHOD OF INCREASING FLOW OF WATER FROM SETTLING TANK OF PROCESS OF TREATING TAR SANDS THROUGH MEMBRANE SEPARATION AND WATER TREATMENT SYSTEM | 2010115218         | 10/10/2008 | 2487085       | 7/10/2013  |
| Russia                 |                                                                                                                                               | 2010115218         | 10/10/2008 | 2487085       | 7/10/2013  |
| Venezuela              | PURIFICATION OF OIL SANDS POND WATER                                                                                                          | 20922008           | 10/15/2008 |               |            |
| United States          | PURIFICATION OF OIL SANDS POND WATER                                                                                                          | 12881303           | 10/4/2010  | 8597515       | 12/3/2013  |
| European Patent Office | METHOD FOR FOAMING A FLUID IN A WELL                                                                                                          | 88503594           | 11/11/2008 | 2217673       | 8/15/2018  |
| Australia              | IMIDAZOLINE-BASED HETEROCYCLIC FOAMERS FOR DOWNHOLE INJECTION                                                                                 | 2008321109         | 11/11/2008 | 2008321109    | 10/3/2013  |
|                        | IMIDAZOLINE-BASED HETEROCYCLIC FOAMERS FOR DOWNHOLE INJECTION                                                                                 | PI08190690         | 5/14/2010  | PI08190690    | 6/4/2019   |
| Canada                 | IMIDAZOLINE-BASED HETEROCYCLIC FOAMERS FOR DOWNHOLE INJECTION                                                                                 | 2703883            | 11/11/2008 | 2703883       | 7/12/2016  |
| United States          | IMIDAZOLINE-BASED HETEROCYCLIC FOAMERS FOR DOWNHOLE INJECTION                                                                                 | 11940777           | 11/15/2007 | 8551925       | 10/8/2013  |
| Angola                 | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS                                                                                           | 1857               | 10/16/2009 |               |            |
| Brazil                 | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS                                                                                           | PI09205780         | 4/18/2011  |               |            |
| Canada                 | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS                                                                                           | 2740235            | 10/16/2009 | 2740235       | 3/14/2017  |
| Egypt                  | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS                                                                                           | 20091001520        | 10/15/2009 | 26872         | 11/11/2014 |

| Country Name                               | TITLE                                               | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|--------------------------------------------|-----------------------------------------------------|--------------------|------------|---------------|------------|
| GCC (Gulf Co-op Council)                   | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS | P200914507         | 10/17/2009 | GC0004790     | 5/1/2017   |
| Kazakhstan                                 | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS | 201115291          | 10/16/2009 | 28165         | 1/21/2014  |
| New Zealand                                | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS | 592109             | 10/16/2009 | 592109        | 8/6/2012   |
| African Intellectual Property Organization | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS | 1200900346         | 10/16/2009 | 14732         | 6/30/2010  |
| Argentina                                  | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS | 20090104003        | 10/16/2009 | AR073899B1    | 5/24/2017  |
| Australia                                  | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS | 2016210594         | 10/16/2009 |               |            |
| Australia                                  | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS | 2018250400         | 10/16/2009 |               |            |
| Germany                                    | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS | 97641146           | 10/16/2009 | 2350238       | 12/31/2014 |
| European Patent Office                     | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS | 97641146           | 10/16/2009 | 2350238       | 12/31/2014 |
| France                                     | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS | 97641146           | 10/16/2009 | 2350238       | 12/31/2014 |
| Great Britain                              | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS | 97641146           | 10/16/2009 | 2350238       | 12/31/2014 |

| Country Name  | TITLE                                                                              | APPLICATION NUMBER | DATE FILED | PATENT NUMBER     | GRANT DATE |
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| Netherlands   | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS                                | 97641146           | 10/16/2009 | 2350238           | 12/31/2014 |
| Norway        | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS                                | 97641146           | 10/16/2009 | 2350238           | 12/31/2014 |
| Sweden        | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS                                | 97641146           | 10/16/2009 | 2350238           | 12/31/2014 |
| United States | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS                                | 12253529           | 10/17/2008 |                   |            |
| China         | COMPOSITIONS AND METHODS FOR INHIBITING THE AGGLOMERATION OF HYDRATES IN A PROCESS | 201080011809<br>4  | 3/4/2010   | 102348695         | 11/19/2014 |
| Malaysia      | COMPOSITIONS AND METHODS FOR INHIBITING THE AGGLOMERATION OF HYDRATES IN A PROCESS | 2011P104221        | 3/4/2010   | MY-152012-A       | 8/15/2014  |
| Nigeria       | COMPOSITIONS AND METHODS FOR INHIBITING THE AGGLOMERATION OF HYDRATES IN A PROCESS | NCC2010192         | 2/25/2010  | NG/C/2010/1<br>92 | 4/29/2010  |
| New Zealand   | COMPOSITIONS AND METHODS FOR INHIBITING THE AGGLOMERATION OF HYDRATES IN A PROCESS | 594671             | 3/4/2010   | 594671            | 9/3/2013   |
| United States | COMPOSITIONS AND METHODS FOR INHIBITING THE AGGLOMERATION OF HYDRATES IN A PROCESS | 12400428           | 3/9/2009   | 8334240           | 12/18/2012 |
| Argentina     | COMPOSICIONES Y METODOS PARA INHIBIR LA AGLOMERACION DE HIDRATOS                   | 20090103847        | 10/6/2009  |                   |            |
| Australia     | COMPOSITIONS AND METHODS FOR INHIBITING THE AGGLOMERATION OF HYDRATES              | 2009302583         | 10/6/2009  | 2009302583        | 11/6/2014  |
| Brazil        | COMPOSITIONS AND METHODS FOR INHIBITING THE AGGLOMERATION OF HYDRATES              | P109204210         | 10/6/2009  | 0920421-0         | 8/1/2017   |

| Country Name                               | TITLE                                                                                                             | APPLICATION NUMBER | DATE FILED | PATENT NUMBER   | GRANT DATE |
|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------|--------------------|------------|-----------------|------------|
| Canada                                     | COMPOSITIONS AND METHODS FOR INHIBITING THE AGGLOMERATION OF HYDRATES                                             | 2738667            | 10/6/2009  | 2738667         | 11/15/2016 |
| Egypt                                      | COMPOSITIONS AND METHODS FOR INHIBITING THE AGGLOMERATION OF HYDRATES                                             | 20091463           | 10/4/2009  | 26471           | 11/25/2013 |
| GCC (Gulf Co-op Council)                   | COMPOSITIONS AND METHODS FOR INHIBITING THE AGGLOMERATION OF HYDRATES                                             | P200914426         | 10/4/2009  | GC0004143       | 9/1/2017   |
| Nigeria                                    | COMPOSITIONS AND METHODS FOR INHIBITING THE AGGLOMERATION OF HYDRATES                                             | NGC2009555         | 10/4/2009  | NG C<br>2010193 | 4/29/2010  |
| New Zealand                                | COMPOSITIONS AND METHODS FOR INHIBITING THE AGGLOMERATION OF HYDRATES                                             | 591920             | 10/6/2009  | 591920          | 8/6/2012   |
| African Intellectual Property Organization | COMPOSITIONS AND METHODS FOR INHIBITING THE AGGLOMERATION OF HYDRATES                                             | 1200900326         | 10/2/2009  | 14718           | 6/30/2011  |
| United States                              | COMPOSITIONS AND METHODS FOR INHIBITING THE AGGLOMERATION OF HYDRATES                                             | 12245849           | 10/6/2008  | 8329620         | 12/11/2012 |
| Angola                                     | COMPOSITIONS AND METHODS FOR DIVERTING INJECTED FLUIDS TO ACHIEVE IMPROVED HYDROCARBON FLUID RECOVERY             | 1697               | 4/15/2009  |                 |            |
| Argentina                                  | COMPOSICIONES Y METODOS PARA DESVIAR LOS FLUIDOS INYECTADOS Y ALCANZAR UNA RECUPERACION MEJORADA DE HIDROCARBUROS | 90101409           | 4/21/2009  | AR073341B1      | 11/30/2016 |
| Australia                                  | COMPOSITIONS AND METHODS FOR DIVERTING INJECTED FLUIDS TO ACHIEVE IMPROVED HYDROCARBON FLUID RECOVERY             | 2009238422         | 4/15/2009  | 2009238422      | 3/27/2014  |

| Country Name  | TITLE                                                                                                 | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
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| Brazil        | COMPOSITIONS AND METHODS FOR DIVERTING INJECTED FLUIDS TO ACHIEVE IMPROVED HYDROCARBON FLUID RECOVERY | PI09073086         | 4/15/2009  |               |            |
| Canada        | COMPOSITIONS AND METHODS FOR DIVERTING INJECTED FLUIDS TO ACHIEVE IMPROVED HYDROCARBON FLUID RECOVERY | 2721948            | 4/15/2009  | 2721948       | 12/13/2016 |
| Great Britain | COMPOSITIONS AND METHODS FOR DIVERTING INJECTED FLUIDS TO ACHIEVE IMPROVED HYDROCARBON FLUID RECOVERY | 20100019397        | 4/15/2009  | 2472722       | 12/12/2012 |
| Indonesia     | COMPOSITIONS AND METHODS FOR DIVERTING INJECTED FLUIDS TO ACHIEVE IMPROVED HYDROCARBON FLUID RECOVERY | W00201003978       | 4/15/2009  | IDP0035189    | 12/13/2013 |
| India         | COMPOSITIONS AND METHODS FOR DIVERTING INJECTED FLUIDS TO ACHIEVE IMPROVED HYDROCARBON FLUID RECOVERY | 8003DELNP2010      | 11/12/2010 | 276912        | 11/11/2016 |
| Russia        | COMPOSITION AND METHOD FOR DIVERTING INJECTED FLUIDS TO ACHIEVE IMPROVED HYDROCARBON FLUID RECOVERY   | 2010142188         | 4/15/2009  | 2511444       | 4/10/2014  |
| United States | COMPOSITIONS AND METHODS FOR DIVERTING INJECTED FLUIDS TO ACHIEVE IMPROVED HYDROCARBON FLUID RECOVERY | 12424244           | 4/15/2009  | 8889603       | 11/18/2014 |
| United States | COMPOSITIONS AND METHODS FOR DIVERTING INJECTED FLUIDS TO ACHIEVE IMPROVED HYDROCARBON FLUID RECOVERY | 14543417           | 11/17/2014 | 9206346       | 12/8/2015  |

| Country Name  | TITLE                                                                                        | APPLICATION<br>NUMBER | DATE FILED | PATENT<br>NUMBER | GRANT<br>DATE |
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| Angola        | COMPOSITION AND METHOD FOR RECOVERING<br>HYDROCARBON FLUIDS FROM A SUBTERRANEAN<br>RESERVOIR | 1695                  | 10/18/2010 |                  |               |
| Argentina     | COMPOSICION Y METODO PARA RECUPERAR FLUIDOS DE<br>HIDROCARBUROS DE UN RESERVORIO SUBTERRANEO | 90101403              | 4/21/2009  | AR073443B1       | 5/27/2015     |
| Australia     | COMPOSITION AND METHOD FOR RECOVERING<br>HYDROCARBON FLUIDS FROM A SUBTERRANEAN<br>RESERVOIR | 2009239528            | 4/21/2009  | 2009239528       | 12/12/2013    |
| Brazil        | COMPOSITION AND METHOD FOR RECOVERING<br>HYDROCARBON FLUIDS FROM A SUBTERRANEAN<br>RESERVOIR | PI09072624            | 4/21/2009  |                  |               |
| Canada        | COMPOSITION AND METHOD FOR RECOVERING<br>HYDROCARBON FLUIDS FROM A SUBTERRANEAN<br>RESERVOIR | 2721970               | 4/21/2009  | 2721970          | 12/2/2014     |
| Colombia      | COMPOSITION AND METHOD FOR RECOVERING<br>HYDROCARBON FLUIDS FROM A SUBTERRANEAN<br>RESERVOIR | 10144783              | 11/18/2010 | 62427            | 10/25/2013    |
| Great Britain | COMPOSITION AND METHOD FOR RECOVERING<br>HYDROCARBON FLUIDS FROM A SUBTERRANEAN<br>RESERVOIR | 20100019393           | 4/21/2009  | 2472721          | 3/6/2013      |
| Indonesia     | COMPOSITION AND METHOD FOR RECOVERING<br>HYDROCARBON FLUIDS FROM A SUBTERRANEAN<br>RESERVOIR | W0020100397<br>7      | 4/21/2009  | IDP00003493<br>7 | 11/11/2013    |
| Russia        | COMPOSITION AND METHOD OF HYDROCARBON FLUID<br>EXTRACTION AT UNDERGROUND DEPOSIT             | 2010142191            | 4/21/2009  | 2499021          | 11/20/2013    |

| Country Name  | TITLE                                                                                                             | APPLICATION<br>NUMBER | DATE FILED | PATENT<br>NUMBER | GRANT<br>DATE |
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| United States | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR                            | 12426569              | 4/20/2009  | 7888296          | 2/15/2011     |
| India         | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR                            | 8002DELNP2010         | 4/21/2009  | 285154           | 7/13/2017     |
| Angola        | BLOCK COPOLYMERS FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR                                  | 1700                  | 4/17/2009  |                  |               |
| Argentina     | COMPOSICIONES Y METODOS PARA DESVIAR LOS FLUIDOS INYECTADOS Y ALCANZAR UNA RECUPERACION MEJORADA DE HIDROCARBUROS | 90101408              | 4/21/2009  | AR073340B1       | 11/30/2016    |
| Australia     | BLOCK COPOLYMERS FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR                                  | 2009239549            | 4/17/2009  | 2009239549       | 5/24/2014     |
| Brazil        | BLOCK COPOLYMERS FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR                                  | PI09073132            | 10/20/2010 |                  |               |
| Canada        | BLOCK COPOLYMERS FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR                                  | 2721949               | 4/17/2009  | 2721949          | 6/2/2015      |
| Great Britain | BLOCK COPOLYMERS FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR                                  | 20100019406           | 4/17/2009  | 2471980          | 3/6/2013      |
| Indonesia     | BLOCK COPOLYMERS FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR                                  | W00201004003          | 11/19/2010 | IDP000037814     | 2/2/2015      |
| India         | BLOCK COPOLYMERS FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR                                  | 7719DELNP2010         | 11/1/2010  | 279615           | 2/3/2017      |
| Russia        | BLOCK COPOLYMERS FOR EXTRACTION OF HYDROCARBON FLUIDS FROM UNDERGROUND DEPOSIT                                    | 2010142190            | 4/17/2009  | 2502775          | 12/27/2013    |

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| United States | BLOCK COPOLYMERS FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR          | 12425047           | 4/16/2009  | 7989401       | 8/2/2011   |
| Angola        | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR    | 1694               | 4/20/2009  |               |            |
| Argentina     | COMPOSICION Y METODO PARA RECUPERAR FLUIDOS DE HIDROCARBUROS DE UN RESERVORIO SUBTERRANEO | 90101405           | 4/21/2009  | AR073338B1    | 6/29/2015  |
| Australia     | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR    | 2009239586         | 4/20/2009  | 2009239586    | 1/16/2014  |
|               | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR    | PI09072632         | 10/20/2010 | PI09072632    | 5/7/2019   |
| Canada        | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR    | 2721960            | 4/20/2009  | 2721960       | 11/1/2016  |
| Great Britain | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR    | 1019403            | 4/20/2009  | 2471642       | 12/12/2012 |
| Indonesia     | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR    | W00201003999       | 11/19/2010 | IDP000033942  | 6/19/2013  |
| India         | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR    | 7922DELNP2010      | 11/10/2010 | 276649        | 11/4/2016  |

| Country Name  | TITLE                                                                                     | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|---------------|-------------------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
| Russia        | COMPOSITION AND METHOD FOR EXTRACTION OF HYDROCARBON FLUIDS FROM UNDERGROUND DEPOSIT      | 2010142192         | 4/20/2009  | 2501830       | 12/20/2013 |
| United States | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR    | 12426485           | 4/20/2009  | 7902127       | 3/8/2011   |
| Angola        | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR    | 1699               | 10/18/2010 |               |            |
| Argentina     | COMPOSICION Y METODO PARA RECUPERAR FLUIDOS DE HIDROCARBUROS DE UN RESERVORIO SUBTERRANEO | 90101406           | 4/21/2009  | AR073444B1    | 7/30/2015  |
| Australia     | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR    | 2009239566         | 4/20/2009  | 2009239566    | 6/19/2014  |
| Brazil        | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR    | PI09073310         | 10/19/2010 |               |            |
| Canada        | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR    | 2721957            | 4/20/2009  | 2721957       | 4/19/2016  |
| Colombia      | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR    | 10144768           | 11/18/2010 | 62430         | 10/25/2013 |
| Great Britain | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR    | 1019398            | 4/20/2009  | 2471978       | 10/24/2012 |

| Country Name  | TITLE                                                                                      | APPLICATION<br>NUMBER | DATE FILED | PATENT<br>NUMBER | GRANT<br>DATE |
|---------------|--------------------------------------------------------------------------------------------|-----------------------|------------|------------------|---------------|
| India         | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR     | 7714DELNP2010         | 11/1/2010  | 278163           | 12/23/2016    |
| Russia        | COMPOSITION AND METHOD OF HYDROCARBON FLUID EXTRACTION AT UNDERGROUND DEPOSIT              | 2010142189            | 4/20/2009  | 2500712          | 12/10/2013    |
| United States | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR     | 12425900              | 4/17/2009  | 7897546          | 3/1/2011      |
| Angola        | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR     | 1696                  | 10/18/2010 |                  |               |
| Argentina     | COMPOSICION Y METODO PARA RECUPERAR FLUIDOS DE HIDROCARBUROS DE UN RESERVOIRIO SUBTERRANEO | 90101404              | 4/21/2009  | AR073337B1       | 6/22/2015     |
| Australia     | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR     | 2009239543            | 4/21/2009  | 2009239543       | 12/24/2013    |
|               | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR     | PI09073140            | 10/20/2010 | PI09073140       | 4/24/2019     |
| Canada        | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR     | 2721973               | 4/21/2009  | 2721973          | 12/2/2014     |
| Colombia      | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR     | 10144777              | 11/18/2010 | 62428            | 10/25/2013    |

| Country Name  | TITLE                                                                                         | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|---------------|-----------------------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
| Great Britain | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR        | 20100019392        | 4/21/2009  | GB2471977     | 10/24/2012 |
| Indonesia     | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR        | W00201004002       | 11/19/2010 | IDP000043210  | 10/12/2016 |
| India         | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR        | 7702DELNP2010      | 11/1/2010  | 274632        | 7/30/2016  |
| Russia        | COMPOSITION AND METHOD OF HYDROCARBON FLUID EXTRACTION AT UNDERGROUND DEPOSIT                 | 2010142187         | 4/21/2009  | 2500711       | 12/10/2013 |
| United States | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR        | 12427064           | 4/21/2009  | 7928042       | 4/19/2011  |
| Angola        | COMPOSITIONS AND METHODS FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR      | 1698               | 4/17/2009  |               |            |
| Argentina     | COMPOSICIONES Y METODOS PARA RECUPERAR FLUIDOS DE HIDROCARBUROS DE UN RESERVOIRIO SUBTERRANEO | 90101407           | 4/21/2009  | AR073339B1    | 11/30/2016 |
| Australia     | COMPOSITIONS AND METHODS FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR      | 2009239550         | 4/17/2009  | 2009239550    | 1/2/2014   |

| Country Name  | TITLE                                                                                                                                               | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
| Brazil        | COMPOSITIONS AND METHODS FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR                                                            | PI09073159         | 10/20/2010 |               |            |
| Canada        | COMPOSITIONS AND METHODS FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR                                                            | 2721953            | 4/17/2009  | 2721953       | 6/2/2015   |
| Colombia      | COMPOSITIONS AND METHODS FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR                                                            | 10130861           | 10/22/2010 | 48045         | 8/14/2013  |
| Great Britain | COMPOSITIONS AND METHODS FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR                                                            | 20100019400        | 4/17/2009  | 2471979       | 4/25/2012  |
| Indonesia     | COMPOSITIONS AND METHODS FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR                                                            | W00201004001       | 11/19/2010 | IDP000037723  | 1/21/2015  |
| India         | COMPOSITIONS AND METHODS FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR                                                            | 8006DELNP2010      | 11/12/2010 | 278924        | 1/6/2017   |
| Russia        | COMPOSITION AND METHOD FOR EXTRACTION OF HYDROCARBON FLUIDS FROM UNDERGROUND DEPOSIT                                                                | 2010142193         | 4/17/2009  | 2505578       | 1/27/2014  |
| United States | COMPOSITIONS COMPRISING AT LEAST TWO DIFFERENT POLYMERIC MICROPARTICLES AND METHODS FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR | 12425089           | 4/16/2009  | 7947630       | 5/24/2011  |

| Country Name           | TITLE                                                                                                                                                                                                                                                                                               | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
| Australia              | ANHYDRIDE DEMULSIFIER FORMULATIONS FOR RESOLVING EMULSIONS OF WATER AND OIL                                                                                                                                                                                                                         | 2009256412         | 5/30/2009  | 2009256412    | 10/16/2014 |
| Brazil                 | UTILIZATION OF AN ANHYDRIDE AS A DEMULSIFIER AND A SOLVENT FOR DEMULSIFIER FORMULATIONS                                                                                                                                                                                                             | PI09095373         | 5/30/2009  |               |            |
| Brazil                 | ANHYDRIDE DEMULSIFIER FORMULATIONS FOR RESOLVING EMULSIONS OF WATER AND OIL                                                                                                                                                                                                                         | PI09187839         | 9/11/2009  |               |            |
| Canada                 | UTILIZATION OF AN ANHYDRIDE AS A DEMULSIFIER AND A SOLVENT FOR DEMULSIFIER FORMULATIONS                                                                                                                                                                                                             | 2726605            | 5/30/2009  | 2726605       | 4/19/2016  |
| Canada                 | ANHYDRIDE DEMULSIFIER FORMULATIONS FOR RESOLVING EMULSIONS OF WATER AND OIL                                                                                                                                                                                                                         | 2736367            | 9/11/2009  | 2736367       | 10/25/2016 |
| Colombia               | ANHYDRIDE DEMULSIFIER FORMULATIONS FOR RESOLVING EMULSIONS OF WATER AND OIL                                                                                                                                                                                                                         | 11033378           | 9/11/2009  | 4349          | 1/31/2014  |
| European Patent Office | UTILIZATION OF AN ANHYDRIDE AS A DEMULSIFIER AND A SOLVENT FOR DEMULSIFIER FORMULATIONS                                                                                                                                                                                                             | 97591408           | 5/30/2009  | 2303443       | 3/7/2018   |
| European Patent Office | ANHYDRIDE DEMULSIFIER FORMULATIONS FOR RESOLVING EMULSIONS OF WATER AND OIL                                                                                                                                                                                                                         | 97924575           | 9/11/2009  | 2370547       | 10/25/2017 |
| Great Britain          | ANHYDRIDE DEMULSIFIER FORMULATIONS FOR RESOLVING EMULSIONS OF WATER AND OIL AND ITS METHOD FOR DEMULSIFYING                                                                                                                                                                                         | 97591408           | 5/30/2009  | 2303443       | 3/7/2018   |
| Great Britain          | Use of an anhydride demulsifier formulation for resolving a water external emulsion of water and oil or a complex emulsion of water and oil and a method for resolving a water external emulsion of water and oil or a complex emulsion of water and oil using an anhydride demulsifier formulation | 97924575           | 9/11/2009  | 2370547       | 10/25/2017 |

| Country Name             | TITLE                                                                                   | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|--------------------------|-----------------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
| Mexico                   | ANHDRIDE DEMULSIFIER FORMULATIONS FOR RESOLVING EMULSIONS OF WATER AND OIL              | Mxa201100263<br>3  | 3/10/2011  | 334570        | 11/4/2015  |
| United States            | UTILIZATION OF AN ANHYDRIDE AS A DEMULSIFIER AND A SOLVENT FOR DEMULSIFIER FORMULATIONS | 12132842           | 6/4/2008   | 8969262       | 3/3/2015   |
| United States            | ANHDRIDE DEMULSIFIER FORMULATIONS FOR RESOLVING EMULSIONS OF WATER AND OIL              | 12209845           | 9/12/2008  | 9096805       | 8/4/2015   |
| European Patent Office   | FOAMERS FOR DOWNHOLE INJECTION                                                          | 108192907          | 9/20/2010  | 2480624       | 3/4/2015   |
| Great Britain            | FOAMERS FOR DOWNHOLE INJECTION                                                          | 108192907          | 9/20/2010  | 2480624       | 3/4/2015   |
| Australia                | FOAMERS FOR DOWNHOLE INJECTION                                                          | 2010298509         | 9/20/2010  | 2010298509    | 9/25/2014  |
| Brazil                   | espumantes para injeção de downhole                                                     | 112012006683<br>8  | 9/20/2010  |               |            |
| Canada                   | FOAMERS FOR DOWNHOLE INJECTION                                                          | 2771296            | 9/20/2010  | 2771296       | 2/27/2018  |
| GCC (Gulf Co-op Council) | FOAMERS FOR DOWNHOLE INJECTION                                                          | 201016733          | 9/21/2010  | GCC0004120    | 7/31/2017  |
| Israel                   | FOAMERS FOR DOWNHOLE INJECTION                                                          | 218461             | 3/4/2012   | 218461        | 4/1/2015   |
| United States            | FOAMERS FOR DOWNHOLE INJECTION                                                          | 12565425           | 9/23/2009  |               |            |
| Netherlands              | FOAMERS FOR DOWNHOLE INJECTION                                                          | 108192907          | 9/20/2010  | 2480624       | 3/4/2015   |
| Norway                   | FOAMERS FOR DOWNHOLE INJECTION                                                          | 108192907          | 9/20/2010  | 2480624       | 3/4/2015   |
| United States            | FOAMERS FOR DOWNHOLE INJECTION                                                          | 14608845           | 1/29/2015  | 9631133       | 4/25/2017  |
| Australia                | FOAMERS FOR DOWNHOLE INJECTION                                                          | 2010298492         | 9/17/2010  | 2010298492    | 4/28/2016  |
| Canada                   | IMIDAZOLINE-BASED FOAMERS FOR DOWNHOLE INJECTION                                        | 2771294            | 9/17/2010  | 2771294       | 11/22/2016 |
| GCC (Gulf Co-op Council) | FOAMERS FOR DOWNHOLE INJECTION                                                          | P201016736         | 9/21/2010  |               |            |
| Israel                   | FOAMERS FOR DOWNHOLE INJECTION                                                          | 218462             | 3/4/2012   | 218462        | 1/31/2015  |

| Country Name             | TITLE                                               | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|--------------------------|-----------------------------------------------------|--------------------|------------|---------------|------------|
| United States            | FOAMERS FOR DOWNHOLE INJECTION                      | 12565433           | 9/23/2009  | 8399386       | 3/19/2013  |
| Angola                   | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS | 1858               | 4/5/2011   |               |            |
| Argentina                | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS | 20090104001        | 10/16/2009 | AR073897B1    | 3/20/2017  |
| Australia                | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS | 2016202902         | 10/16/2009 | 2016202902    | 3/8/2018   |
| Australia                | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS | 2009305650         | 10/16/2009 | 2009305650    | 8/4/2016   |
| Brazil                   | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS | PI09205810         | 10/16/2009 |               |            |
| Canada                   | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS | 2740371            | 10/16/2009 | 2740371       | 4/24/2018  |
| Egypt                    | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS | 20091001591        | 10/15/2009 | 26127         | 3/11/2013  |
| European Patent Office   | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS | 97649453           | 10/16/2009 | 2352805       | 7/30/2014  |
| Great Britain            | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS | 97649453           | 10/16/2009 | 2352805       | 7/30/2014  |
| GCC (Gulf Co-op Council) | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS | P200914506         | 10/17/2009 |               |            |
| Kazakhstan               | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS | 201115281          | 10/16/2009 | 28089         | 12/27/2013 |
| Nigeria                  | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS | NGC2009578         | 10/14/2009 | RPNGC2009578  | 10/23/2017 |

| Country Name                                        | TITLE                                                                          | APPLICATION<br>NUMBER | DATE FILED | PATENT<br>NUMBER | GRANT<br>DATE |
|-----------------------------------------------------|--------------------------------------------------------------------------------|-----------------------|------------|------------------|---------------|
| Netherlands                                         | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS                            | 97649453              | 10/16/2009 | 2352805          | 7/30/2014     |
| Norway                                              | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS                            | 97649453              | 10/16/2009 | 2352805          | 7/30/2014     |
| New Zealand                                         | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS                            | 592108                | 10/16/2009 | 592108           | 6/5/2012      |
| African<br>Intellectual<br>Property<br>Organization | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS                            | 1200900347            | 10/16/2009 | 14733            | 6/30/2010     |
| Poland                                              | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS                            | 97649453              | 10/16/2009 | 2352805          | 7/30/2014     |
| United States                                       | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS                            | 12253504              | 10/17/2008 | 8921478          | 12/30/2014    |
| United States                                       | METHOD OF CONTROLLING GAS HYDRATES IN FLUID SYSTEMS                            | 14582618              | 12/24/2014 | 9550935          | 1/24/2017     |
| United States                                       | APPARATUS AND METHOD FOR INCREASING WELL PRODUCTION                            | 11983719              | 11/9/2007  | 7909101          | 3/22/2011     |
| United States                                       | APPARATUS AND METHOD FOR INCREASING WELL PRODUCTION USING SURFACTANT INJECTION | 10905993              | 1/28/2005  | 7311144          | 12/25/2007    |
| Angola                                              | METHOD OF REDUCING THE VISCOSITY OF HYDROCARBON FLUIDS                         | 1878                  | 11/4/2009  |                  |               |
| Australia                                           | METHOD OF REDUCING THE VISCOSITY OF HYDROCARBON FLUIDS                         | 2009313598            | 11/4/2009  | 2009313598       | 5/21/2015     |

| Country Name  | TITLE                                                                                                      | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|---------------|------------------------------------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
| Brazil        | METHOD OF REDUCING THE VISCOSITY OF HYDROCARBON FLUIDS                                                     | PI09216057         | 11/4/2009  |               |            |
| China         | METHOD OF REDUCING THE VISCOSITY OF HYDROCARBON FLUIDS                                                     | 2009801446110      | 11/4/2009  | 102203210     | 11/27/2013 |
| Colombia      | METHOD OF REDUCING THE VISCOSITY OF HYDROCARBON FLUIDS                                                     | 11056534           | 11/4/2009  |               | 12/27/2013 |
| Egypt         | METHOD OF REDUCING THE VISCOSITY OF HYDROCARBON FLUIDS                                                     | 6882011            | 11/4/2009  | 27349         | 11/29/2015 |
| India         | METHOD OF REDUCING THE VISCOSITY OF HYDROCARBON FLUIDS                                                     | 3527CHENP2011      | 11/4/2009  | 288095        | 10/13/2017 |
| United States | METHOD OF REDUCING THE VISCOSITY OF HYDROCARBON FLUIDS                                                     | 12265859           | 11/6/2008  | 7923416       | 4/12/2011  |
| United States | CORROSION INHIBITORS FOR A FLUID                                                                           | 12400457           | 3/9/2009   | 8105988       | 1/31/2012  |
| United States | CORROSION INHIBITORS FOR AN AQUEOUS MEDIUM                                                                 | 12245806           | 10/6/2008  | 8105987       | 1/31/2012  |
| United States | COMPOSITIONS FOR INHIBITING THE FORMATION OF HYDRATE AGGLOMERATES                                          | 13651513           | 10/15/2012 | 9212305       | 12/15/2015 |
| Germany       | COMPOSITIONS CONTAINING AMIDE SURFACTANTS AND METHODS FOR INHIBITING THE FORMATION OF HYDRATE AGGLOMERATES | 107077497          | 3/2/2010   | 2403838       | 4/27/2016  |
| France        | COMPOSITIONS CONTAINING AMIDE SURFACTANTS AND METHODS FOR INHIBITING THE FORMATION OF HYDRATE AGGLOMERATES | 107077497          | 3/2/2010   | 2403838       | 4/27/2016  |
| Great Britain | COMPOSITIONS CONTAINING AMIDE SURFACTANTS AND METHODS FOR INHIBITING THE FORMATION OF HYDRATE AGGLOMERATES | 107077497          | 3/2/2010   | 2403838       | 4/27/2016  |

| Country Name | TITLE                                                                                                           | APPLICATION<br>NUMBER | DATE FILED | PATENT<br>NUMBER | GRANT<br>DATE |
|--------------|-----------------------------------------------------------------------------------------------------------------|-----------------------|------------|------------------|---------------|
| Italy        | COMPOSITIONS CONTAINING AMIDE SURFACTANTS AND METHODS FOR INHIBITING THE FORMATION OF HYDRATE AGGLOMERATES      | 20100707749           | 3/2/2010   | 2403838          | 4/27/2016     |
| Angola       | COMPOSITIONS CONTAINING AMIDE SURFACTANTS AND METHODS FOR INHIBITING THE FORMATION OF HYDRATE AGGLOMERATES      | 1951                  | 3/2/2010   |                  |               |
| Argentina    | COMPOSICIONES QUE CONTIENEN SURFACTANTES DE AMIDA Y METODOS PARA INHIBIR LA FORMACION DE AGLOMERADOS DE HIDRATO | P100100570            | 2/26/2010  | AR075622B1       | 8/30/2018     |
| Australia    | COMPOSITIONS CONTAINING AMIDE SURFACTANTS AND METHODS FOR INHIBITING THE FORMATION OF HYDRATE AGGLOMERATES      | 2010221497            | 3/2/2010   | 2010221497       | 7/16/2015     |
| Brazil       | COMPOSITIONS CONTAINING AMIDE SURFACTANTS AND METHODS FOR INHIBITING THE FORMATION OF HYDRATE AGGLOMERATES      | P110095047            | 9/2/2011   |                  |               |
| Canada       | COMPOSITIONS CONTAINING AMIDE SURFACTANTS AND METHODS FOR INHIBITING THE FORMATION OF HYDRATE AGGLOMERATES      | 2754016               | 3/2/2010   | 2754016          | 9/15/2015     |
| China        | COMPOSITIONS CONTAINING AMIDE SURFACTANTS AND METHODS FOR INHIBITING THE FORMATION OF HYDRATE AGGLOMERATES      | 2010800106190         | 3/2/2010   | 102341377        | 7/2/2014      |
| Egypt        | Compositions containing amide surfactants and methods for inhiting the formation of hydrate agglomerates        | 20100200240           | 2/14/2010  | 25743            | 6/21/2012     |

| Country Name                               | TITLE                                                                                                      | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
| European Patent Office                     | COMPOSITIONS CONTAINING AMIDE SURFACTANTS AND METHODS FOR INHIBITING THE FORMATION OF HYDRATE AGGLOMERATES | 107077497          | 3/2/2010   | 2403838       | 4/27/2016  |
| GCC (Gulf Co-op Council)                   | COMPOSITIONS CONTAINING AMIDE SURFACTANTS AND METHODS FOR INHIBITING THE FORMATION OF HYDRATE AGGLOMERATES | 201015348          | 2/28/2010  | GC0006393     | 11/30/2018 |
| Malaysia                                   | COMPOSITION CONTAINING AMIDE SURFACTANTS AND METHODS FOR INHIBITING THE FORMATION OF HYDRATE AGGLOMERATES  | 2011P104106        | 3/2/2010   | MY155659A     | 11/13/2015 |
| Nigeria                                    | COMPOSITIONS CONTAINING AMIDE SURFACTANTS AND METHODS FOR INHIBITING THE FORMATION OF HYDRATE AGGLOMERATES | NGC2010193         | 2/25/2010  | NGC2010193    | 4/29/2010  |
| New Zealand                                | COMPOSITIONS CONTAINING AMIDE SURFACTANTS AND METHODS FOR INHIBITING THE FORMATION OF HYDRATE AGGLOMERATES | 594737             | 3/2/2010   | 594737        | 1/29/2013  |
| African Intellectual Property Organization | COMPOSITIONS CONTAINING AMIDE SURFACTANTS AND METHODS FOR INHIBITING THE FORMATION OF HYDRATE AGGLOMERATES | 1201000071         | 2/26/2010  | 14952         | 12/30/2010 |
| Tunisia                                    | COMPOSITIONS CONTAINING AMIDE SURFACTANTS AND METHODS FOR INHIBITING THE FORMATION OF HYDRATE AGGLOMERATES | TN20110435         | 8/19/2011  |               |            |
| United States                              | COMPOSITIONS CONTAINING AMIDE SURFACTANTS AND METHODS FOR INHIBITING THE FORMATION OF HYDRATE AGGLOMERATES | 12396076           | 3/2/2009   | 8288323       | 10/16/2012 |

| Country Name  | TITLE                                                                                                      | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|---------------|------------------------------------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
| Netherlands   | COMPOSITIONS CONTAINING AMIDE SURFACTANTS AND METHODS FOR INHIBITING THE FORMATION OF HYDRATE AGGLOMERATES | 107077497          | 3/2/2010   | 2403838       | 4/27/2016  |
| Norway        | COMPOSITIONS CONTAINING AMIDE SURFACTANTS AND METHODS FOR INHIBITING THE FORMATION OF HYDRATE AGGLOMERATES | 107077497          | 3/2/2010   | 2403838       | 4/27/2016  |
| Poland        | COMPOSITIONS CONTAINING AMIDE SURFACTANTS AND METHODS FOR INHIBITING THE FORMATION OF HYDRATE AGGLOMERATES | 107077497          | 3/2/2010   | 2403838       | 4/27/2016  |
| United States | CORROSION INHIBITORS CONTAINING AMIDE SURFACTANTS FOR A FLUID                                              | 12396096           | 3/2/2009   | 7989403       | 8/2/2011   |
| Great Britain | METHOD OF REDUCING THE VISCOSITY OF HYDROCARBON FLUIDS                                                     | 107978850          | 7/9/2010   | 2454339       | 9/27/2017  |
| Argentina     | METHOD OF REDUCING THE VISCOSITY OF HYDROCARBON FLUIDS                                                     | P100102443         | 7/7/2010   | AR077397B1    | 6/21/2017  |
| Australia     | METHOD OF REDUCING THE VISCOSITY OF HYDROCARBON FLUIDS                                                     | 2010271311         | 7/9/2010   | 2010271311    | 2/12/2015  |
| Brazil        | METHOD OF REDUCING THE VISCOSITY OF HYDROCARBON FLUIDS                                                     | 112012000598<br>7  | 1/10/2012  |               |            |
| Canada        | METHOD OF REDUCING THE VISCOSITY OF HYDROCARBON FLUIDS                                                     | 2767637            | 7/9/2010   | 2767637       | 8/30/2016  |
| China         | METHOD OF REDUCING THE VISCOSITY OF HYDROCARBON FLUIDS                                                     | 201080038260<br>8  | 7/9/2010   | 102482567     | 3/19/2014  |
| Colombia      | METHOD OF REDUCING THE VISCOSITY OF HYDROCARBON FLUIDS                                                     | 12014884           | 7/9/2010   | 4785          | 1/17/2014  |

| Country Name             | TITLE                                                  | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|--------------------------|--------------------------------------------------------|--------------------|------------|---------------|------------|
| European Patent Office   | METHOD OF REDUCING THE VISCOSITY OF HYDROCARBON FLUIDS | 107978850          | 7/9/2010   | 2454339       | 9/27/2017  |
| Libya                    | METHOD OF REDUCING THE VISCOSITY OF HYDROCARBON FLUIDS | 43312012           | 1/10/2012  |               |            |
| Mexico                   | METHOD OF REDUCING THE VISCOSITY OF HYDROCARBON FLUIDS | MXa20120004 47     | 7/9/2010   | 313349        | 9/17/2013  |
| Russia                   | METHOD FOR REDUCTION OF HYDROCARBON FLUIDS VISCOSITY   | 2012102109         | 7/9/2010   | 2545193       | 3/27/2015  |
|                          | METHOD OF REDUCING THE VISCOSITY OF HYDROCARBON FLUIDS | 1001000906         | 6/18/2010  | 67859         | 2/1/2019   |
| United States            | METHOD OF REDUCING THE VISCOSITY OF HYDROCARBON FLUIDS | 12500644           | 7/10/2009  | 8394872       | 3/12/2013  |
| Algeria                  | METHOD OF REDUCING THE VISCOSITY OF HYDROCARBON FLUIDS | 120030             | 7/9/2010   |               |            |
| Norway                   | METHOD OF REDUCING THE VISCOSITY OF HYDROCARBON FLUIDS | 107978850          | 7/9/2010   | 2454339       | 9/27/2017  |
| Australia                | ACID GAS SCRUBBING COMPOSITION                         | 2010273773         | 6/29/2010  | 2010273773    | 10/1/2015  |
| Brazil                   | ACID GAS SCRUBBING COMPOSITION                         | PI10119337         | 6/29/2010  |               |            |
| Canada                   | ACID GAS SCRUBBING COMPOSITION                         | 2767003            | 6/29/2010  | 2767003       | 9/15/2015  |
| China                    | ACID GAS SCRUBBING COMPOSITION                         | 201080036767 X     | 6/29/2010  | 102481518     | 12/24/2014 |
| Eurasian Regional Patent | ACID GAS SCRUBBING COMPOSITION                         | 201290015          | 6/29/2010  | 22454         | 1/29/2016  |
|                          | ACID GAS SCRUBBING COMPOSITION                         | 108002882          | 6/29/2010  | 2448654       | 5/1/2019   |

| Country Name           | TITLE                                                           | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|------------------------|-----------------------------------------------------------------|--------------------|------------|---------------|------------|
|                        | ACID GAS SCRUBBING COMPOSITION                                  | 108002882          | 6/29/2010  | 2448654       | 5/1/2019   |
|                        | ACID GAS SCRUBBING COMPOSITION                                  | MXa20120001<br>68  | 1/2/2012   | 362738        | 2/6/2019   |
|                        | ACID GAS SCRUBBING COMPOSITION                                  | 108002882          | 6/29/2010  | 2448654       | 5/1/2019   |
|                        | ACID GAS SCRUBBING COMPOSITION                                  | 108002882          | 6/29/2010  | 2448654       | 5/1/2019   |
| United States          | ACID GAS SCRUBBING COMPOSITION                                  | 12494521           | 6/30/2009  | 8461335       | 6/11/2013  |
| United States          | PROCESS FOR REDUCING CONTAMINANTS IN AN INDUSTRIAL FLUID STREAM | 13397131           | 2/15/2012  | 8551435       | 10/8/2013  |
| United States          | ACID GAS SCRUBBING COMPOSITION                                  | 13966404           | 8/14/2013  | 9555364       | 1/31/2017  |
| Canada                 | METHOD OF REDUCING THE VISCOSITY OF HYDROCARBONS                | 2775964            | 10/19/2010 | 2775964       | 4/24/2018  |
| Argentina              | METHOD OF REDUCING THE VISCOSITY OF HYDROCARBONS                | P100103793         | 10/18/2010 |               |            |
| Brazil                 | METHOD OF REDUCING THE VISCOSITY OF HYDROCARBONS                | 112012009507<br>2  | 4/20/2012  |               |            |
| European Patent Office | METHOD OF REDUCING THE VISCOSITY OF HYDROCARBONS                | 108255043          | 10/19/2010 |               |            |
| Mexico                 | METHOD OF REDUCING THE VISCOSITY OF HYDROCARBONS                | MXa20120043<br>05  | 10/19/2010 | 345154        | 1/18/2017  |
| Russia                 | METHOD FOR REDUCTION OF HYDROCARBON VISCOSITY                   | 2012112656         | 10/19/2010 | 2528344       | 9/10/2014  |
| United States          | METHOD OF REDUCING THE VISCOSITY OF HYDROCARBONS                | 12582329           | 10/20/2009 | 9315715       | 4/19/2016  |
| Azerbaijan             | ACID GAS SCRUBBING COMPOSITION                                  |                    | 6/29/2010  | 23759         | 7/29/2016  |
| Belarus                | ACID GAS SCRUBBING COMPOSITION                                  |                    | 6/29/2010  | 23759         | 7/29/2016  |
| Kyrgyzstan             | ACID GAS SCRUBBING COMPOSITION                                  |                    | 6/29/2010  | 23759         | 7/29/2016  |

| Country Name             | TITLE                                                         | APPLICATION NUMBER | DATE FILED | PATENT NUMBER    | GRANT DATE |
|--------------------------|---------------------------------------------------------------|--------------------|------------|------------------|------------|
| Kazakhstan               | ACID GAS SCRUBBING COMPOSITION                                |                    | 6/29/2010  | 23759            | 7/29/2016  |
| Australia                | ACID GAS SCRUBBING COMPOSITION                                | 2010266423         | 6/29/2010  | 2010266423       | 10/1/2015  |
| Brazil                   | ACID GAS SCRUBBING COMPOSITION                                | PI10141480         | 6/29/2010  |                  |            |
| Canada                   | ACID GAS SCRUBBING COMPOSITION                                | 2765825            | 6/29/2010  | 2765825          | 9/27/2016  |
| China                    | ACID GAS SCRUBBING COMPOSITION                                | 2010800302270      | 6/29/2010  | ZI201080030227.0 | 8/3/2016   |
| Eurasian Regional Patent | ACID GAS SCRUBBING COMPOSITION                                | 201290005          | 6/29/2010  | 23759            | 7/29/2016  |
|                          | ACID GAS SCRUBBING COMPOSITION                                | 107946352          | 6/29/2010  | 2448667          | 6/26/2019  |
| Mexico                   | ACID GAS SCRUBBING COMPOSITION                                | MXa2011013617      | 6/29/2010  | 324731           | 10/22/2014 |
| United States            | ACID GAS SCRUBBING COMPOSITION                                | 12494533           | 6/30/2009  | 8541622          | 9/24/2013  |
| Russia                   | ACID GAS SCRUBBING COMPOSITION                                |                    | 6/29/2010  | 23759            | 7/29/2016  |
| Tajikistan               | ACID GAS SCRUBBING COMPOSITION                                |                    | 6/29/2010  | 23759            | 7/29/2016  |
| Turkmenistan             | ACID GAS SCRUBBING COMPOSITION                                |                    | 6/29/2010  | 23759            | 7/29/2016  |
| Australia                | BETA-AMINO ESTER GAS HYDRATE INHIBITORS                       | 2013370592         | 12/20/2013 | 2013370592       | 12/18/2017 |
| Brazil                   | inibidores de hidrato de gás beta-amino éster                 | BR1120150123007    | 12/20/2013 |                  |            |
| European Patent Office   | BETA-AMINO ESTER GAS HYDRATE INHIBITORS                       | 138674296          | 12/20/2013 | 2938604          | 5/30/2018  |
| GCC (Gulf Co-op Council) | BETA-AMINO ESTER GAS HYDRATE INHIBITORS                       | P201326162         | 12/29/2013 | GC000903         | 11/1/2018  |
| United States            | BETA-AMINO ESTER GAS HYDRATE INHIBITORS                       | 15111443           | 12/20/2013 | 10047273         | 8/14/2018  |
| United States            | RECOVERY AND SEPARATION OF CRUDE OIL AND WATER FROM EMULSIONS | 12757008           | 4/8/2010   | 8911615          | 12/16/2014 |

| Country Name                               | TITLE                                                                                               | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
| China                                      | RECOVERY AND SEPARATION OF CRUDE OIL AND WATER FROM EMULSIONS                                       | 201180017686<br>X  | 4/4/2011   | 102869422     | 8/26/2015  |
| Russia                                     | RAW OIL AND WATER EXTRACTION AND SEPARATION FROM EMULSIONS                                          | 2012143362         | 4/4/2011   | 2577267       | 3/10/2016  |
| European Patent Office                     | QUATERNARY FATTY ACID ESTERS AS CORROSION INHIBITORS                                                | 157923400          | 2/17/2015  |               |            |
| United States                              | QUATERNARY FATTY ACID ESTERS AS CORROSION INHIBITORS                                                | 14191983           | 2/27/2014  | 9284650       | 3/15/2016  |
| United States                              | PROCESSING AIDS TO IMPROVE THE BITUMEN RECOVERY AND FROTH QUALITY IN OIL SANDS EXTRACTION PROCESSES | 12762004           | 4/16/2010  | 8764974       | 7/1/2014   |
| United Arab Emirates                       | FOAMERS FOR DOWNHOLE INJECTION                                                                      | P5362013           | 11/17/2011 |               |            |
| Australia                                  | FOAMERS FOR DOWNHOLE INJECTION                                                                      | 2011329885         | 11/17/2011 | 2011329885    | 8/20/2015  |
| Brazil                                     | 'método de formação de espuma em um fluido"                                                         | 112013012170<br>0  | 11/17/2011 |               |            |
| Canada                                     | FOAMERS FOR DOWNHOLE INJECTION                                                                      | 2817627            | 11/17/2011 | 2817627       | 1/17/2017  |
| European Patent Office                     | FOAMERS FOR DOWNHOLE INJECTION                                                                      | 118410208          | 11/17/2011 | 2640803       | 6/29/2016  |
| Great Britain                              | FOAMERS FOR DOWNHOLE INJECTION                                                                      | 118410208          | 11/17/2011 | 2640803       | 6/29/2016  |
| Netherlands                                | FOAMERS FOR DOWNHOLE INJECTION                                                                      | 118410208          | 11/17/2011 | 2640803       | 6/29/2016  |
| New Zealand                                | FOAMERS FOR DOWNHOLE INJECTION                                                                      | 610328             | 11/17/2011 | 610328        | 1/27/2015  |
| African Intellectual Property Organization | FOAMERS FOR DOWNHOLE INJECTION                                                                      | 1201300211         | 11/17/2011 | 16432         | 5/30/2014  |

| Country Name                   | TITLE                                                                                  | APPLICATION<br>NUMBER | DATE FILED | PATENT<br>NUMBER | GRANT<br>DATE |
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| Portugal                       | FOAMERS FOR DOWNHOLE INJECTION                                                         | 118410208             | 11/17/2011 | 2640803          | 6/29/2016     |
| Romania                        | FOAMERS FOR DOWNHOLE INJECTION                                                         | 118410208             | 11/17/2011 | 2640803          | 6/29/2016     |
| United States                  | FOAMERS FOR DOWNHOLE INJECTION                                                         | 12950334              | 11/19/2010 | 8950494          | 2/10/2015     |
| Angola                         | METHOD FOR RESOLVING EMULSIONS IN ENHANCED OIL<br>RECOVERY OPERATIONS                  | 2784                  | 6/21/2011  |                  |               |
| Argentina                      | METODO PARA RESOLVER EMULSIONES EN OPERACIONES<br>DE RECUPERACION MEJORADA DE PETROLEO | P110102186            | 6/23/2011  | AR081985B1       | 9/28/2018     |
| Austria                        | METHOD FOR RESOLVING EMULSIONS IN ENHANCED OIL<br>RECOVERY OPERATIONS                  | 117987222             | 6/21/2011  | 2585559          | 7/18/2018     |
| Australia                      | METHOD FOR RESOLVING EMULSIONS IN ENHANCED OIL<br>RECOVERY OPERATIONS                  | 2011271164            | 6/21/2011  | 2011271164       | 6/30/2016     |
| Brazil                         | METHOD FOR RESOLVING EMULSIONS IN ENHANCED OIL<br>RECOVERY OPERATIONS                  | 112012033025<br>0     | 6/21/2011  |                  |               |
|                                | METHOD FOR RESOLVING EMULSIONS IN ENHANCED OIL<br>RECOVERY OPERATIONS                  | 2803318               | 6/21/2011  | 2803318          | 1/8/2019      |
| China                          | METHOD FOR RESOLVING EMULSIONS IN ENHANCED OIL<br>RECOVERY OPERATIONS                  | 201180031154<br>1     | 6/21/2011  | 102959052        | 12/24/2014    |
| Colombia                       | METHOD FOR RESOLVING EMULSIONS IN ENHANCED OIL<br>RECOVERY OPERATIONS                  | 13012316              | 6/21/2011  | 13-12316         | 5/29/2015     |
| Denmark                        | METHOD FOR RESOLVING EMULSIONS IN ENHANCED OIL<br>RECOVERY OPERATIONS                  | 117987222             | 6/21/2011  | 2585559          | 7/18/2018     |
| Eurasian<br>Regional<br>Patent | METHOD FOR RESOLVING EMULSIONS IN ENHANCED OIL<br>RECOVERY OPERATIONS                  | 201291321             | 6/21/2011  | 23416            | 6/30/2016     |

| Country Name                 | TITLE                                                                 | APPLICATION<br>NUMBER | DATE FILED | PATENT<br>NUMBER     | GRANT<br>DATE |
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| European<br>Patent Office    | METHOD FOR RESOLVING EMULSIONS IN ENHANCED OIL<br>RECOVERY OPERATIONS | 117987222             | 6/21/2011  | 2585559              | 7/18/2018     |
| Great Britain                | METHOD FOR RESOLVING EMULSIONS IN ENHANCED OIL<br>RECOVERY OPERATIONS | 117987222             | 6/21/2011  | 2585559              | 7/18/2018     |
| GCC (Gulf Co-<br>op Council) | METHOD FOR RESOLVING EMULSIONS IN ENHANCED OIL<br>RECOVERY OPERATIONS | GC201118633           | 6/21/2011  | GC0005333            | 4/9/2017      |
| Indonesia                    | METHOD FOR RESOLVING EMULSIONS IN ENHANCED OIL<br>RECOVERY OPERATIONS | W0020120533<br>4      | 6/21/2011  | IDP00004262<br>6     | 8/31/2016     |
| India                        | METHOD FOR RESOLVING EMULSIONS IN ENHANCED OIL<br>RECOVERY OPERATIONS | 4084KOLNP201<br>2     | 6/21/2011  | 299730               | 8/6/2018      |
| Libya                        | METHOD FOR RESOLVING EMULSIONS IN ENHANCED OIL<br>RECOVERY OPERATIONS | 46042012              | 6/21/2011  |                      |               |
| Mexico                       | METHOD FOR RESOLVING EMULSIONS IN ENHANCED OIL<br>RECOVERY OPERATIONS | MXa20120152<br>76     | 6/21/2011  |                      |               |
| Malaysia                     | METHOD FOR RESOLVING EMULSIONS IN ENHANCED OIL<br>RECOVERY OPERATIONS | 2012PI05520           | 6/21/2011  | MY162575A            | 6/30/2017     |
| Nigeria                      | METHOD FOR RESOLVING EMULSIONS IN ENHANCED OIL<br>RECOVERY OPERATIONS | NGC2012745            | 6/21/2011  | RP:NG/C/201<br>2/745 | 3/6/2015      |
| Netherlands                  | METHOD FOR RESOLVING EMULSIONS IN ENHANCED OIL<br>RECOVERY OPERATIONS | 117987222             | 6/21/2011  | 2585559              | 7/18/2018     |
| Norway                       | METHOD FOR RESOLVING EMULSIONS IN ENHANCED OIL<br>RECOVERY OPERATIONS | 117987222             | 6/21/2011  | 2585559              | 7/18/2018     |
| Poland                       | METHOD FOR RESOLVING EMULSIONS IN ENHANCED OIL<br>RECOVERY OPERATIONS | 117987222             | 6/21/2011  | 2585559              | 7/18/2018     |

| Country Name  | TITLE                                                                                      | APPLICATION NUMBER  | DATE FILED | PATENT NUMBER | GRANT DATE |
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| United States | METHOD FOR RESOLVING EMULSIONS IN ENHANCED OIL RECOVERY OPERATIONS                         | 14721805            | 5/26/2015  | 9663705       | 5/30/2017  |
| United States | Quaternary foamers for downhole injection                                                  | 13102251            | 5/6/2011   | 8746341       | 6/10/2014  |
| Argentina     | COMPOSICION Y METODO PARA RECUPERAR FLUIDOS DE HIDROCARBUROS DE UN RESERVOIRIO SUBTERRANEO | 130100239           | 1/25/2013  |               |            |
| Argentina     | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR     | 160101932           | 1/25/2013  |               |            |
| Australia     | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR     | 2016204046          | 1/24/2013  | 2016204046    | 5/3/2018   |
| Australia     | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR     | 2013212130          | 1/24/2013  | 2013212130    | 7/14/2016  |
| Bahrain       | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR     | 20140101            | 1/24/2013  |               |            |
| Brazil        | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR     | BR1120140182<br>450 | 1/24/2013  |               |            |
| Canada        | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR     | 2858435             | 1/24/2013  |               |            |

| Country Name              | TITLE                                                                                        | APPLICATION<br>NUMBER | DATE FILED | PATENT<br>NUMBER     | GRANT<br>DATE |
|---------------------------|----------------------------------------------------------------------------------------------|-----------------------|------------|----------------------|---------------|
|                           | COMPOSITION AND METHOD FOR RECOVERING<br>HYDROCARBON FLUIDS FROM A SUBTERRANEAN<br>RESERVOIR | 201610582802<br>7     | 1/24/2013  | 2.01611E+12          | 3/1/2019      |
| China                     | COMPOSITION AND METHOD FOR RECOVERING<br>HYDROCARBON FLUIDS FROM A SUBTERRANEAN<br>RESERVOIR | 201380005495<br>0     | 1/24/2013  | ZL201380005<br>495.0 | 8/8/2017      |
| European<br>Patent Office | COMPOSITION AND METHOD FOR RECOVERING<br>HYDROCARBON FLUIDS FROM A SUBTERRANEAN<br>RESERVOIR | 181992975             | 1/24/2013  |                      |               |
|                           | COMPOSITION AND METHOD FOR RECOVERING<br>HYDROCARBON FLUIDS FROM A SUBTERRANEAN<br>RESERVOIR | 137406211             | 1/24/2013  | 2807228              | 3/27/2019     |
|                           | COMPOSITION AND METHOD FOR RECOVERING<br>HYDROCARBON FLUIDS FROM A SUBTERRANEAN<br>RESERVOIR | 137406211             | 1/24/2013  | 2807228              | 3/27/2019     |
|                           | COMPOSITION AND METHOD FOR RECOVERING<br>HYDROCARBON FLUIDS FROM A SUBTERRANEAN<br>RESERVOIR | P00201900561          | 1/24/2013  |                      |               |
| Indonesia                 | COMPOSITION AND METHOD FOR RECOVERING<br>HYDROCARBON FLUIDS FROM A SUBTERRANEAN<br>RESERVOIR | P00201403571          | 1/24/2013  |                      |               |
| United States             | COMPOSITION AND METHOD FOR RECOVERING<br>HYDROCARBON FLUIDS FROM A SUBTERRANEAN<br>RESERVOIR | 13359596              | 1/27/2012  | 9120965              | 9/1/2015      |

| Country Name  | TITLE                                                                                  | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
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|               | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR | 137406211          | 1/24/2013  | 2807228       | 3/27/2019  |
| New Zealand   | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR | 722950             | 1/24/2013  |               |            |
| New Zealand   | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR | 625655             | 1/24/2013  | 625655        | 8/2/2016   |
| Russia        | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR | 2017113352         | 1/24/2013  | 2670295       | 10/22/2018 |
| Russia        | COMPOSITION AND METHOD FOR SELECTION OF HYDROCARBON FLUIDS FROM UNDERGROUND RESERVOIR  | 2014134878         | 1/24/2013  | 2618239       | 5/3/2017   |
|               | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR | 14804973           | 7/21/2015  | 10214679      | 2/26/2019  |
| United States | COMPOSITION AND METHOD FOR RECOVERING HYDROCARBON FLUIDS FROM A SUBTERRANEAN RESERVOIR | 16208775           | 12/4/2018  |               |            |
| United States | METHOD FOR RESOLVING EMULSIONS IN ENHANCED OIL RECOVERY OPERATIONS.                    | 12756647           | 4/8/2010   | 8741130       | 6/3/2014   |
| United States | COMPOSITION FOR TREATING ACID GAS                                                      | 13680544           | 11/19/2012 | 9233338       | 1/12/2016  |
| United States | COMPOSITION FOR TREATING ACID GAS                                                      | 12761939           | 4/16/2010  | 8318114       | 11/27/2012 |

| Country Name             | TITLE                                                                | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
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| United States            | METHOD AND COMPOSITION FOR OIL ENHANCED RECOVERY                     | 13048131           | 3/15/2011  | 8662171       | 3/4/2014   |
| United States            | CORROSION INHIBITORS FOR OIL AND GAS APPLICATIONS                    | 12963036           | 12/8/2010  | 8618027       | 12/31/2013 |
| United States            | CORROSION INHIBITORS FOR OIL AND GAS APPLICATIONS                    | 14086668           | 11/21/2013 | 9382467       | 7/5/2016   |
| Australia                | TEMPERATURE SENSITIVE VISCOELASTIC WELL-TREATMENT FLUIDS             | 2014249683         | 3/4/2014   | 2014249683    | 2/15/2018  |
| Brazil                   | fluidos viscoelásticos de tratamento de poço sensíveis a temperatura | BR1120150222501    | 3/4/2014   |               |            |
| Canada                   | TEMPERATURE SENSITIVE VISCOELASTIC WELL-TREATMENT FLUIDS             | 2904637            | 3/4/2014   |               |            |
| China                    | TEMPERATURE SENSITIVE VISCOELASTIC WELL-TREATMENT FLUIDS             | 2014800136156      | 3/4/2014   |               |            |
| European Patent Office   | TEMPERATURE SENSITIVE VISCOELASTIC WELL-TREATMENT FLUIDS             | 147798961          | 3/4/2014   |               |            |
| United States            | TEMPERATURE SENSITIVE VISCOELASTIC WELL-TREATMENT FLUIDS             | 13797295           | 3/12/2013  | 9228123       | 1/5/2016   |
| United States            | TEMPERATURE SENSITIVE VISCOELASTIC WELL-TREATMENT FLUIDS             | 14985750           | 12/31/2015 |               |            |
| Canada                   | FOULING MITIGATION IN EQUIPMENT USED DURING HYDROCARBON PRODUCTION   | 2904560            | 2/12/2014  |               |            |
| GCC (Gulf Co-op Council) | FOULING MITIGATION IN EQUIPMENT USED DURING HYDROCARBON PRODUCTION   | P201426680         | 3/12/2014  |               |            |

| Country Name                   | TITLE                                                                                                | APPLICATION<br>NUMBER | DATE FILED | PATENT<br>NUMBER | GRANT<br>DATE |
|--------------------------------|------------------------------------------------------------------------------------------------------|-----------------------|------------|------------------|---------------|
|                                | FOULING MITIGATION IN EQUIPMENT USED DURING<br>HYDROCARBON PRODUCTION                                | 13798572              | 3/13/2013  | 10196287         | 2/5/2019      |
| Armenia                        | COMPOSITION AND METHOD FOR REDUCING HYDRATE<br>AGGLOMERATION                                         |                       | 12/14/2011 | 24680            | 10/31/2016    |
| Azerbaijan                     | COMPOSITION AND METHOD FOR REDUCING HYDRATE<br>AGGLOMERATION                                         |                       | 12/14/2011 | 24680            | 10/31/2016    |
| Belarus                        | COMPOSITION AND METHOD FOR REDUCING HYDRATE<br>AGGLOMERATION                                         |                       | 12/14/2011 | 24680            | 10/31/2016    |
| Germany                        | COMPOSITION AND METHOD FOR REDUCING HYDRATE<br>AGGLOMERATION                                         | 118494202             | 12/14/2011 | 2651877          | 3/9/2016      |
| Angola                         | COMPOSITION AND METHOD FOR REDUCING HYDRATE<br>AGGLOMERATION                                         | 2499                  | 12/14/2011 |                  |               |
| Brazil                         | composição para reduzir a aglomeração de hidratos e<br>método para reduzir a aglomeração de hidratos | 112013015062<br>9     | 12/14/2011 |                  |               |
| Canada                         | COMPOSITION AND METHOD FOR REDUCING HYDRATE<br>AGGLOMERATION                                         | 2821730               | 12/14/2011 |                  |               |
| China                          | COMPOSITION AND METHOD FOR REDUCING HYDRATE<br>AGGLOMERATION                                         | 201180060178<br>X     | 12/14/2011 | 103261149        | 7/15/2015     |
| Eurasian<br>Regional<br>Patent | COMPOSITION AND METHOD FOR REDUCING HYDRATE<br>AGGLOMERATION                                         | 201390709             | 12/14/2011 | 24680            | 10/31/2016    |
| European<br>Patent Office      | COMPOSITION AND METHOD FOR REDUCING HYDRATE<br>AGGLOMERATION                                         | 118494202             | 12/14/2011 | 2651877          | 3/9/2016      |
| India                          | COMPOSITION AND METHOD FOR REDUCING HYDRATE<br>AGGLOMERATION                                         | 1903KOLNP201<br>3     | 12/14/2011 | 301959           | 10/8/2018     |

| Country Name  | TITLE                                                        | APPLICATION<br>NUMBER | DATE FILED | PATENT<br>NUMBER  | GRANT<br>DATE |
|---------------|--------------------------------------------------------------|-----------------------|------------|-------------------|---------------|
| Kazakhstan    | COMPOSITION AND METHOD FOR REDUCING HYDRATE<br>AGGLOMERATION | 201315841             | 12/14/2011 | 2013/1584.1       | 11/20/2014    |
| Mexico        | COMPOSITION AND METHOD FOR REDUCING HYDRATE<br>AGGLOMERATION | MXa20130069<br>47     | 12/14/2011 | 340173            | 6/29/2016     |
| Nigeria       | COMPOSITION AND METHOD FOR REDUCING HYDRATE<br>AGGLOMERATION | NGC2013409            | 12/14/2011 | NG/C/2013/4<br>09 | 8/27/2013     |
| Tunisia       | COMPOSITION AND METHOD FOR REDUCING HYDRATE<br>AGGLOMERATION | TN20130260            | 12/14/2011 |                   |               |
| France        | COMPOSITION AND METHOD FOR REDUCING HYDRATE<br>AGGLOMERATION | 118494202             | 12/14/2011 | 2651877           | 3/9/2016      |
| Great Britain | COMPOSITION AND METHOD FOR REDUCING HYDRATE<br>AGGLOMERATION | 118494202             | 12/14/2011 | 2651877           | 3/9/2016      |
| Italy         | COMPOSITION AND METHOD FOR REDUCING HYDRATE<br>AGGLOMERATION | 20110849420           | 12/14/2011 | 2651877           | 3/9/2016      |
| Kyrgyzstan    | COMPOSITION AND METHOD FOR REDUCING HYDRATE<br>AGGLOMERATION |                       | 12/14/2011 | 24680             | 10/31/2016    |
| Kazakhstan    | COMPOSITION AND METHOD FOR REDUCING HYDRATE<br>AGGLOMERATION |                       | 12/14/2011 | 24680             | 10/31/2016    |
| Moldova       | COMPOSITION AND METHOD FOR REDUCING HYDRATE<br>AGGLOMERATION |                       | 12/14/2011 | 24680             | 10/31/2016    |
| United States | COMPOSITION AND METHOD FOR REDUCING HYDRATE<br>AGGLOMERATION | 12970280              | 12/16/2010 | 8618025           | 12/31/2013    |
| Netherlands   | COMPOSITION AND METHOD FOR REDUCING HYDRATE<br>AGGLOMERATION | 118494202             | 12/14/2011 | 2651877           | 3/9/2016      |

| Country Name                               | TITLE                                                                                                                                  | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
| Norway                                     | COMPOSITION AND METHOD FOR REDUCING HYDRATE AGGLOMERATION                                                                              | 118494202          | 12/14/2011 | 2651877       | 3/9/2016   |
| African Intellectual Property Organization | COMPOSITION AND METHOD FOR REDUCING HYDRATE AGGLOMERATION                                                                              | 1201300242         | 12/14/2011 |               |            |
| Poland                                     | COMPOSITION AND METHOD FOR REDUCING HYDRATE AGGLOMERATION                                                                              | 118494202          | 12/14/2011 | 2651877       | 3/9/2016   |
| Russia                                     | COMPOSITION AND METHOD FOR REDUCING HYDRATE AGGLOMERATION                                                                              |                    | 12/14/2011 | 24680         | 10/31/2016 |
| Tajikistan                                 | COMPOSITION AND METHOD FOR REDUCING HYDRATE AGGLOMERATION                                                                              |                    | 12/14/2011 | 24680         | 10/31/2016 |
| Turkmenistan                               | COMPOSITION AND METHOD FOR REDUCING HYDRATE AGGLOMERATION                                                                              |                    | 12/14/2011 | 24680         | 10/31/2016 |
| United States                              | COMPOSITION AND METHOD FOR REDUCING HYDRATE AGGLOMERATION                                                                              | 14098139           | 12/5/2013  | 9458373       | 10/4/2016  |
|                                            | UN METODO PARA INHIBIR LA CORROSION DE UNA SUPERFICIE EN CONTACTO CON UN ENTORNO CORROSIVO ENCONTRADO EN OPERACIONES DE PETROLEO Y GAS | 120104206          | 11/8/2012  | AR089176B1    | 1/31/2019  |
| Australia                                  | Environmentally friendly corrosion inhibitors                                                                                          | 2012336054         | 11/5/2012  | 2012336054    | 3/16/2017  |
| Brazil                                     | inibidores de corrosão ambientalmente amigáveis                                                                                        | 112014007604<br>9  | 11/5/2012  |               |            |
| Canada                                     | ENVIRONMENTALLY FRIENDLY CORROSION INHIBITORS                                                                                          | 2846979            | 11/5/2012  |               |            |
| Denmark                                    | ENVIRONMENTALLY FRIENDLY CORROSION INHIBITORS                                                                                          | 128471216          | 11/5/2012  | 2776605       | 2/1/2017   |

| Country Name             | TITLE                                                                                                                                                                                         | APPLICATION NUMBER | DATE FILED | PATENT NUMBER        | GRANT DATE |
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| European Patent Office   | ENVIRONMENTALLY FRIENDLY CORROSION INHIBITOR                                                                                                                                                  | 171525595          | 11/5/2012  |                      |            |
| European Patent Office   | ENVIRONMENTALLY FRIENDLY CORROSION INHIBITORS                                                                                                                                                 | 128471216          | 11/5/2012  | 2776605              | 2/1/2017   |
| Great Britain            | ENVIRONMENTALLY FRIENDLY CORROSION INHIBITORS                                                                                                                                                 | 128471216          | 11/5/2012  | 2776605              | 2/1/2017   |
| United States            | ENVIRONMENTALLY FRIENDLY CORROSION INHIBITOR                                                                                                                                                  | 13291665           | 11/8/2011  | 9074289              | 7/7/2015   |
| Netherlands              | ENVIRONMENTALLY FRIENDLY CORROSION INHIBITORS                                                                                                                                                 | 128471216          | 11/5/2012  | 2776605              | 2/1/2017   |
| Norway                   | ENVIRONMENTALLY FRIENDLY CORROSION INHIBITORS                                                                                                                                                 | 128471216          | 11/5/2012  | 2776605              | 2/1/2017   |
| Australia                | ACID GAS ABSORBENT COMPOSITION                                                                                                                                                                | 2011329882         | 11/17/2011 | 2011329882           | 10/6/2016  |
| Azerbaijan               | ACID GAS ABSORBENT COMPOSITION                                                                                                                                                                |                    | 11/17/2011 | 24196                | 8/31/2016  |
|                          | 'composição de líquido de lavagem para absorção de contaminantes ácidos de fluidos em um processo industrial e processo de redução de contaminantes ácidos em um fluxo de fluidos industrial" | 112013012169<br>6  | 11/17/2011 |                      |            |
| Brazil                   |                                                                                                                                                                                               |                    |            |                      |            |
| Belarus                  | ACID GAS ABSORBENT COMPOSITION                                                                                                                                                                |                    | 11/17/2011 | 24196                | 8/31/2016  |
| Canada                   | ACID GAS ABSORBENT COMPOSITION                                                                                                                                                                | 2817549            | 11/17/2011 | 2817549              | 10/2/2018  |
| China                    | ACID GAS ABSORBENT COMPOSITION                                                                                                                                                                | 201180055449<br>2  | 11/17/2011 | ZL201180055<br>449.2 | 8/24/2016  |
| Eurasian Regional Patent | ACID GAS ABSORBENT COMPOSITION                                                                                                                                                                | 201390548          | 11/17/2011 | 24196                | 8/31/2016  |
|                          | ACID GAS ABSORBENT COMPOSITION                                                                                                                                                                | 118421858          | 11/17/2011 | 2640507              | 5/8/2019   |
|                          | ACID GAS ABSORBENT COMPOSITION                                                                                                                                                                | 118421858          | 11/17/2011 | 2640507              | 5/8/2019   |
| Kyrgyzstan               | ACID GAS ABSORBENT COMPOSITION                                                                                                                                                                |                    | 11/17/2011 | 24196                | 8/31/2016  |
| Kazakhstan               | ACID GAS ABSORBENT COMPOSITION                                                                                                                                                                |                    | 11/17/2011 | 24196                | 8/31/2016  |

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| Mexico                    | ACID GAS ABSORBENT COMPOSITION                                                                                                                    | MXa20180100<br>46     | 11/17/2011 |                  |               |
| Mexico                    | ACID GAS ABSORBENT COMPOSITION                                                                                                                    | MXa20130054<br>40     | 11/17/2011 |                  |               |
|                           | ACID GAS ABSORBENT COMPOSITION                                                                                                                    | 118421858             | 11/17/2011 | 2640507          | 5/8/2019      |
|                           | ACID GAS ABSORBENT COMPOSITION                                                                                                                    | 118421858             | 11/17/2011 | 2640507          | 5/8/2019      |
| Russia                    | ACID GAS ABSORBENT COMPOSITION                                                                                                                    |                       | 11/17/2011 | 24196            | 8/31/2016     |
| Tajikistan                | ACID GAS ABSORBENT COMPOSITION                                                                                                                    |                       | 11/17/2011 | 24196            | 8/31/2016     |
| Turkmenistan              | ACID GAS ABSORBENT COMPOSITION                                                                                                                    |                       | 11/17/2011 | 24196            | 8/31/2016     |
| United States             | ACID GAS ABSORBENT COMPOSITION                                                                                                                    | 12950518              | 11/19/2010 | 8765083          | 7/1/2014      |
| United States             | ACID GAS ABSORBENT COMPOSITION                                                                                                                    | 13874591              | 5/1/2013   | 8765951          | 7/1/2014      |
| European<br>Patent Office | COMPOSITION AND METHOD FOR REDUCING HYDRATE<br>AGGLOMERATION                                                                                      | 118774967             | 12/22/2011 | 2718259          | 1/23/2019     |
| Angola                    | COMPOSITION AND METHOD FOR REDUCING HYDRATE<br>AGGLOMERATION                                                                                      | 2504                  | 12/22/2011 |                  |               |
| Australia                 | COMPOSITION AND METHOD FOR REDUCING HYDRATE<br>AGGLOMERATION                                                                                      | 2011383248            | 12/22/2011 | 2011383248       | 8/6/2015      |
| Brazil                    | composição para inibir a formação de aglomerados de hidratos em um fluido e método para inibir a formação de aglomerados de hidratos em um fluido | 112013016103<br>5     | 12/22/2011 |                  |               |
| India                     | COMPOSITION AND METHOD FOR REDUCING HYDRATE<br>AGGLOMERATION                                                                                      | 5622DELNP201<br>3     | 12/22/2011 | 289646           | 11/16/2017    |
| Kazakhstan                | COMPOSITION AND METHOD FOR REDUCING HYDRATE<br>AGGLOMERATION                                                                                      | 201315761             | 12/22/2011 | 29669            | 2/24/2015     |

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| Mexico                                              | COMPOSITION AND METHOD FOR REDUCING HYDRATE AGGLOMERATION                                             | MXa20130074<br>20  | 12/22/2011 |                   |            |
| Malaysia                                            | COMPOSITION AND METHOD FOR REDUCING HYDRATE AGGLOMERATION                                             | 2013PI02365        | 12/22/2011 | MY162724A         | 7/14/2017  |
| Nigeria                                             | COMPOSITION AND METHOD FOR REDUCING HYDRATE AGGLOMERATION                                             | NGC2013406         | 12/22/2011 | NG/C/2013/4<br>06 | 8/27/2013  |
| New Zealand                                         | COMPOSITION AND METHOD FOR REDUCING HYDRATE AGGLOMERATION                                             | 612342             | 12/22/2011 | 612342            | 9/29/2015  |
| African<br>Intellectual<br>Property<br>Organization | COMPOSITION AND METHOD FOR REDUCING HYDRATE AGGLOMERATION                                             | 1201300266         | 12/22/2011 | 16465             | 5/30/2014  |
| Russia                                              | COMPOSITION AND METHOD OF REDUCING AGGLOMERATION OF HYDRATES                                          | 2013128427         | 12/22/2011 | 2562974           | 9/10/2015  |
| Tunisia                                             | COMPOSITION AND METHOD FOR REDUCING HYDRATE AGGLOMERATION                                             | TN20130272         | 12/22/2011 |                   |            |
| GCC (Gulf Co-<br>op Council)                        | COMPOSITION AND METHOD FOR REDUCING HYDRATE AGGLOMERATION                                             | P201120121         | 12/24/2011 |                   |            |
| United States                                       | COMPOSITION AND METHOD FOR REDUCING HYDRATE AGGLOMERATION                                             | 13326910           | 12/15/2011 | 9505707           | 11/29/2016 |
|                                                     | AN ENVIRONMENTALLY FRIENDLY DISPERSION SYSTEM USEFUL FOR THE PREPARATION OF INVERSE EMULSION POLYMERS | 1220102000         | 6/6/2012   | AR086690B1        | 3/29/2019  |

| Country Name                   | TITLE                                                                                               | APPLICATION<br>NUMBER | DATE FILED | PATENT<br>NUMBER     | GRANT<br>DATE |
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| Australia                      | AN ENVIRONMENTALLY FRIENDLY DISPERSION SYSTEM USED IN THE PREPARATION OF INVERSE EMULSION POLYMERS  | 2012268422            | 6/5/2012   | 2012268422           | 4/21/2016     |
| Brazil                         | sistema de dispersão ecologicamente correto utilizado na preparação de polímeros de emulsão inversa | BR1120130302<br>968   | 6/5/2012   |                      |               |
|                                | AN ENVIRONMENTALLY FRIENDLY DISPERSION SYSTEM USED IN THE PREPARATION OF INVERSE EMULSION POLYMERS  | 2835867               | 6/5/2012   | 2835867              | 4/2/2019      |
| European<br>Patent Office      | AN ENVIRONMENTALLY FRIENDLY DISPERSION SYSTEM USED IN THE PREPARATION OF INVERSE EMULSION POLYMERS  | 127963999             | 6/5/2012   |                      |               |
| United States                  | Environmentally friendly dispersion system used in the preparation of inverse emulsion polymers     | 13155848              | 6/8/2011   | 9193898              | 11/24/2015    |
| Argentina                      | UN METODO PARA INHIBIR LA CORROSION EN UNA SUPERFICIE                                               | 130103537             | 9/30/2013  |                      |               |
| United States                  | QUATERNARY AND CATIONIC AMMONIUM SURFACTANTS AS CORROSION INHIBITORS                                | 13630926              | 9/28/2012  | 10006128             | 6/26/2018     |
|                                | ADITIVOS PARA MEJORAR LA RECUPERACION DE HIDROCARBUROS                                              | 20120102071           | 6/11/2012  | AR086902B1           | 2/8/2019      |
| Canada                         | ADDITIVES FOR IMPROVING HYDROCARBON RECOVERY                                                        | 2835872               | 6/12/2012  | 2835872              | 7/4/2017      |
| China                          | ADDITIVES FOR IMPROVING HYDROCARBON RECOVERY                                                        | 201280021226<br>9     | 6/12/2012  | ZL201280021<br>226.9 | 1/18/2017     |
| Eurasian<br>Regional<br>Patent | ADDITIVES FOR IMPROVING HYDROCARBON RECOVERY                                                        | 201391593             | 6/12/2012  | 29233                | 2/28/2018     |

| Country Name             | TITLE                                                                                              | APPLICATION NUMBER | DATE FILED | PATENT NUMBER    | GRANT DATE |
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| European Patent Office   | ADDITIVES FOR IMPROVING HYDROCARBON RECOVERY                                                       | 12/7997625         | 6/12/2012  | 2718541          | 9/12/2018  |
| GCC (Gulf Co-op Council) | METHOD TO ENHANCE BITUMEN RECOVERY IN STEAM ASSISTED GRAVITY DRAINAGE PROCESSES                    | P201221429         | 6/5/2012   | GC0006565        | 11/26/2017 |
| India                    | ADDITIVES FOR IMPROVING HYDROCARBON RECOVERY                                                       | 2747KOLNP2013      | 6/12/2012  | 300671           | 9/4/2018   |
| Thailand                 | ADDITIVES FOR IMPROVING HYDROCARBON RECOVERY                                                       | 1301007039         | 6/12/2012  |                  |            |
| United States            | METHOD TO ENHANCE BITUMEN RECOVERY IN STEAM ASSISTED GRAVITY DRAINAGE PROCESSES                    | 13158919           | 6/13/2011  | 9150776          | 10/6/2015  |
|                          | ADDITIVES FOR IMPROVING HYDROCARBON RECOVERY                                                       | 1201303890         | 6/12/2012  | 20714            | 3/5/2019   |
| Argentina                | ADITIVOS PARA MEJORARA LA RECUPERACION DE HIDROCARBUROS                                            | 20120102072        | 6/11/2012  |                  |            |
| GCC (Gulf Co-op Council) | FLUORINATED ADDITIVES TO IMPROVE THE BITUMEN RECOVERY IN STEAM ASSISTED GRAVITY DRAINAGE PROCESSES | P201221430         | 6/5/2012   | GC0007150        | 2/25/2018  |
| Canada                   | ADDITIVES FOR IMPROVING HYDROCARBON RECOVERY                                                       | 2821184            | 7/16/2013  |                  |            |
| Canada                   | ADDITIVES FOR IMPROVING HYDROCARBON RECOVERY                                                       | 2835884            | 6/12/2012  | 2835884          | 3/13/2018  |
|                          | ADDITIVES FOR IMPROVING HYDROCARBON RECOVERY                                                       | 2017100450219      | 6/12/2012  | ZL2017100450219  | 4/23/2019  |
| China                    | ADDITIVES FOR IMPROVING HYDROCARBON RECOVERY                                                       | 2012800212235      | 6/12/2012  | ZL201280021223.5 | 3/29/2017  |
| Russia                   | ADDITIVES FOR IMPROVING HYDROCARBON RECOVERY                                                       | 2013152338         | 6/12/2012  | 2599999          | 10/20/2016 |
| United States            | FLUORINATED ADDITIVES TO IMPROVE THE BITUMEN RECOVERY IN STEAM ASSISTED GRAVITY DRAINAGE PROCESSES | 13158905           | 6/13/2011  | 8939208          | 1/27/2015  |
| United States            | ADDITIVES FOR IMPROVING HYDROCARBON RECOVERY                                                       | 13554515           | 7/20/2012  | 9879512          | 1/30/2018  |

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| United States          | ADDITIVES FOR IMPROVING HYDROCARBON RECOVERY                    | 15839572           | 12/12/2017 |               |            |
| United States          | Composite materials for reversible CO2 capture                  | 13881428           | 10/25/2011 | 9283511       | 3/15/2016  |
| Australia              | COMPOSITION AN DMETHOD FOR WELL STIMULATION AND REMEDIATION     | 2016225821         | 4/19/2013  | 2016225821    | 10/25/2018 |
| Australia              | Demulsifier composition and method of using same                | 2013249130         | 4/19/2013  | 2013249130    | 10/13/2016 |
| Australia              | MICROEMULSION FLOWBACK AID COMPOSITION AND METHOD OF USING SAME | 2013239828         | 3/27/2013  | 2013239828    | 4/21/2016  |
| Brazil                 | COMPOSITION AN DMETHOD FOR WELL STIMULATION AND REMEDIATION     | 1120140225150      | 4/19/2013  |               |            |
| Brazil                 | MICROEMULSION FLOWBACK AID COMPOSITION AND METHOD OF USING SAME | BR1120140202648    | 3/27/2013  |               |            |
| Canada                 | DEMULSIFIER COMPOSITION AND METHOD OF USING SAME                | 2867595            | 4/19/2013  | 2867595       | 1/10/2017  |
| Canada                 | MICROEMULSION FLOWBACK AID COMPOSITION AND METHOD OF USING SAME | 2864308            | 3/27/2013  |               |            |
| European Patent Office | DEMULSIFIER COMPOSITION AND METHOD OF USING SAME                | 137786406          | 4/19/2013  |               |            |
|                        | MICROEMULSION FLOWBACK AID COMPOSITION AND METHOD OF USING SAME | 137675013          | 3/27/2013  | 2831195       | 3/6/2019   |
| United States          | COMPOSITION AN DMETHOD FOR WELL STIMULATION AND REMEDIATION     | 13431003           | 3/27/2012  | 9701888       | 7/11/2017  |
| United States          | DEMULSIFIER COMPOSITION AND METHOD OF USING SAME                | 15137610           | 4/25/2016  | 10041007      | 8/7/2018   |
| United States          | COMPOSITION AN DMETHOD FOR WELL STIMULATION AND REMEDIATION     | 13452222           | 4/20/2012  | 9353261       | 5/31/2016  |

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| Australia     | CHEMICAL TREATMENT METHOD AND ADDITIVE USED TO TREAT FINES MIGRATION AND FLOW THROUGH POROUS MEDIA                             | 20133338370        | 10/18/2013 | 20133338370   | 9/22/2016  |
| Brazil        | método de tratamento químico e aditivo usado para tratar migração e fluxo de finos através de meios porosos                    | BR1120150095488    | 10/18/2013 |               |            |
| Canada        | CHEMICAL TREATMENT METHOD AND ADDITIVE USED TO TREAT FINES MIGRATION AND FLOW THROUGH POROUS MEDIA                             | 2885191            | 10/18/2013 |               |            |
|               | CHEMICAL TREATMENT METHOD AND ADDITIVE USED TO TREAT FINES MIGRATION AND FLOW THROUGH POROUS MEDIA                             | 138510367          | 10/18/2013 | 2914685       | 5/9/2019   |
| United States | CHEMICAL TREATMENT METHOD AND ADDITIVE USED TO TREAT FINES MIGRATION AND FLOW THROUGH POROUS MEDIA                             | 13663604           | 10/30/2012 | 9169430       | 10/27/2015 |
| Canada        | PROCESS AND SYSTEM FOR DEWATERING OIL SANDS FINE TAILINGS                                                                      | 2878260            | 8/21/2013  |               |            |
| United States | PROCESS AND SYSTEM FOR DEWATERING OIL SANDS FINE TAILINGS                                                                      | 13800808           | 3/13/2013  | 9963365       | 5/8/2018   |
| Canada        | MONITORING PRODUCED WATER                                                                                                      | 2904577            | 3/9/2014   |               |            |
| United States | MONITORING PRODUCED WATER                                                                                                      | 13804950           | 3/14/2013  | 9341058       | 5/17/2016  |
| United States | MONITORING HYDRAULIC FRACTURING                                                                                                | 13833115           | 3/15/2013  | 9477238       | 10/25/2016 |
| India         | DEVELOPMENT OF NOVEL TEST PROTOCOL AND ANALYSIS TECHNIQUE TO EVALUATE ASPHALTENE INHIBITOR PERFORMANCE IN EMULSIFIED CRUDE OIL | 629MUM2013         | 12/21/2012 |               |            |

| Country Name              | TITLE                                                                  | APPLICATION<br>NUMBER | DATE FILED | PATENT<br>NUMBER    | GRANT<br>DATE |
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| Australia                 | PREVENTION OF SLUDGE FORMATION DURING ACIDIZING PROCEDURES             | 2014238310            | 2/18/2014  | 2014238310          | 4/20/2017     |
| Brazil                    | prevenção de formação de lama durante procedimentos de acidificação    | BR1120150222<br>455   | 2/18/2014  |                     |               |
| Canada                    | PREVENTION OF SLUDGE FORMATION DURING ACIDIZING PROCEDURES             | 2904570               | 2/18/2014  |                     |               |
| China                     | PREVENTION OF SLUDGE FORMATION DURING ACIDIZING PROCEDURES             | 201480014371<br>3     | 2/18/2014  | ZL201480014<br>3713 | 6/22/2018     |
| European<br>Patent Office | PREVENTION OF SLUDGE FORMATION DURING ACIDIZING PROCEDURES             | 147700934             | 2/18/2014  | 297055              | 11/14/2018    |
| United States             | CORROSION CONTROL                                                      | 13662660              | 10/29/2012 | 8557338             | 10/15/2013    |
| Brazil                    | CORROSION CONTROL                                                      | 102013033609<br>2     | 10/14/2013 |                     |               |
| Brazil                    | polímeros de controle da mobilidade para recuperação melhorada de óleo | BR1120150165<br>338   | 1/14/2014  |                     |               |
| China                     | MOBILITY CONTROL POLYMERS FOR ENHANCED OIL RECOVERY                    | 201810928322<br>0     | 1/14/2014  |                     |               |
| China                     | MOBILITY CONTROL POLYMERS FOR ENHANCED OIL RECOVERY                    | 201480006136<br>1     | 1/14/2014  | 105121591           | 9/18/2018     |
| European<br>Patent Office | MOBILITY CONTROL POLYMERS FOR ENHANCED OIL RECOVERY                    | 147466700             | 1/14/2014  |                     |               |
|                           | MOBILITY CONTROL POLYMERS FOR ENHANCED OIL RECOVERY                    | 14744757              | 6/19/2015  | 10323114            | 6/18/2019     |
| United States             | MOBILITY CONTROL POLYMERS FOR ENHANCED OIL RECOVERY                    | 14154701              | 1/14/2014  |                     |               |

| Country Name              | TITLE                                                           | APPLICATION<br>NUMBER | DATE FILED | PATENT<br>NUMBER | GRANT<br>DATE |
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| Brazil                    | espumadores para remoção líquida                                | BR1120150222<br>552   | 3/5/2014   |                  |               |
| Canada                    | FOAMERS FOR LIQUID REMOVAL                                      | 2904599               | 3/5/2014   |                  |               |
| Denmark                   | FOAMERS FOR LIQUID REMOVAL                                      | 147796668             | 3/5/2014   | 2970748          | 12/20/2017    |
| European<br>Patent Office | FOAMERS FOR LIQUID REMOVAL                                      | 147796668             | 3/5/2014   | 2970748          | 12/20/2017    |
| Great Britain             | FOAMERS FOR LIQUID REMOVAL                                      | 147796668             | 3/5/2014   | 2970748          | 12/20/2017    |
| Netherlands               | FOAMERS FOR LIQUID REMOVAL                                      | 147796668             | 3/5/2014   | 2970748          | 12/20/2017    |
| Norway                    | FOAMERS FOR LIQUID REMOVAL                                      | 147796668             | 3/5/2014   | 2970748          | 12/20/2017    |
| United States             | FOAMERS FOR LIQUID REMOVAL                                      | 14197870              | 3/5/2014   | 9702234          | 7/11/2017     |
| Angola                    | METHOD OF ASSESSING ASPHALTENE INHIBITOR<br>EFFICIENCY          | 3081                  | 3/5/2014   |                  |               |
| Brazil                    | método de avaliar a eficiência do inibidor de asfalto           | BR1120150166<br>296   | 3/5/2014   |                  |               |
| Canada                    | METHOD OF ASSESSING ASPHALTENE INHIBITOR<br>EFFICIENCY          | 2896724               | 3/5/2014   |                  |               |
|                           | METHOD OF ASSESSING ASPHALTENE INHIBITOR<br>EFFICIENCY          | 147698732             | 3/5/2014   | 2970798          | 1/2/2019      |
| Russia                    | ASSESSMENT METHOD effective inhibitors of asphalt               | 2015144275            | 3/5/2014   |                  |               |
| United States             | METHOD OF ASSESSING ASPHALTENE INHIBITOR<br>EFFICIENCY          | 15400489              | 1/6/2017   |                  |               |
| United States             | METHOD OF ASSESSING ASPHALTENE INHIBITOR<br>EFFICIENCY          | 14197853              | 3/5/2014   | 9574981          | 2/21/2017     |
| Australia                 | CHOLINE-BASED CROSSLINKER COMPOSITIONS FOR<br>FRACTURING FLUIDS | 2014251001            | 4/9/2014   | 2014251001       | 5/31/2018     |

| Country Name           | TITLE                                                                                                                                                         | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
| Brazil                 | composição para reticular polímeros em solução aquosa, fluido de fratura ou composição de fluido de serviço de poço, e, método para recuperar hidrocarbonetos | BR1120150255787    | 4/9/2014   |               |            |
| Canada                 | CHOLINE-BASED CROSSLINKER COMPOSITIONS FOR FRACTURING FLUIDS                                                                                                  | 2908866            | 4/9/2014   |               |            |
| European Patent Office | CHOLINE-BASED CROSSLINKER COMPOSITIONS FOR FRACTURING FLUIDS                                                                                                  | 147829923          | 4/9/2014   |               |            |
| United States          | CHOLINE-BASED CROSSLINKER COMPOSITIONS FOR FRACTURING FLUIDS                                                                                                  | 14248906           | 4/9/2014   | 9790421       | 10/17/2017 |
| Canada                 | RHEOLOGY MODIFYING AGENTS FOR SLURRIES                                                                                                                        | 2909528            | 4/23/2014  |               |            |
| European Patent Office | RHEOLOGY MODIFYING AGENTS FOR SLURRIES                                                                                                                        | 147921035          | 4/23/2014  |               |            |
| Japan                  | RHEOLOGY MODIFYING AGENTS FOR SLURRIES                                                                                                                        | 2016511765         | 4/23/2014  | 6362676       | 7/6/2018   |
| South Korea            | RHEOLOGY MODIFYING AGENTS FOR SLURRIES                                                                                                                        | 1020157033962      | 4/23/2014  |               |            |
| Singapore              | RHEOLOGY MODIFYING AGENTS FOR SLURRIES                                                                                                                        | 11201508557P       | 4/23/2014  | 11201508557P  | 6/30/2017  |
| United States          | RHEOLOGY MODIFYING AGENTS FOR SLURRIES                                                                                                                        | 13875061           | 5/1/2013   | 9656914       | 5/23/2017  |
| United States          | RHEOLOGY MODIFYING AGENTS FOR SLURRIES                                                                                                                        | 15490120           | 4/18/2017  | 10017624      | 7/10/2018  |
| Canada                 | OILFIELD CLEANER AND CORROSION INHIBITOR                                                                                                                      | 2917104            | 7/1/2014   |               |            |
| United States          | Oilfield cleaner and corrosion inhibitor comprising a polyamine sulfonic acid salt                                                                            | 15056355           | 2/29/2016  | 9434911       | 9/6/2016   |
| United States          | Oilfield cleaner and corrosion inhibitor comprising a polyamine sulfonic acid salt                                                                            | 14321461           | 7/1/2014   | 9303236       | 4/5/2016   |

| Country Name             | TITLE                                                                                                                           | APPLICATION NUMBER | DATE FILED | PATENT NUMBER       | GRANT DATE |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------|--------------------|------------|---------------------|------------|
| Angola                   | ORGANIC DISULFIDE BASED CORROSION INHIBITORS                                                                                    | 3189               | 7/29/2014  |                     |            |
|                          | ORGANIC DISULFIDE BASED CORROSION INHIBITORS                                                                                    | 2014296417         | 7/29/2014  | 2014296417          | 5/9/2019   |
|                          |                                                                                                                                 | BR1120160021       |            |                     |            |
| Brazil                   | método para inibir a corrosão em uma superfície                                                                                 | 606                | 7/29/2014  |                     |            |
| Canada                   | ORGANIC DISULFIDE BASED CORROSION INHIBITORS                                                                                    | 2917168            | 7/29/2014  |                     |            |
|                          |                                                                                                                                 | 201480043528       |            |                     |            |
| China                    | ORGANIC DISULFIDE BASED CORROSION INHIBITORS                                                                                    | 5                  | 7/29/2014  |                     |            |
| Colombia                 | ORGANIC DISULFIDE BASED CORROSION INHIBITORS                                                                                    | 16006509           | 7/29/2014  |                     |            |
| Eurasian Regional Patent | ИНГИБИТОРЫ КОРРОЗИИ НА ОСНОВЕ ОПТАНИЧЕСКИХ ДИСУЛФИДОВ                                                                           | 201690022          | 7/29/2014  |                     |            |
| European Patent Office   | ORGANIC DISULFIDE BASED CORROSION INHIBITORS                                                                                    | 148328834          | 7/29/2014  |                     |            |
| Nigeria                  | ORGANIC DISULFIDE BASED CORROSION INHIBITORS                                                                                    | NGPTC2016169<br>4  | 7/29/2014  | NG/PT/C/16/<br>1694 | 6/5/2018   |
| Qatar                    | ORGANIC DISULFIDE BASED CORROSION INHIBITORS                                                                                    | QA2016010004<br>5  | 7/29/2014  |                     |            |
| Saudi Arabia             | ORGANIC DISULFIDE BASED CORROSION INHIBITORS                                                                                    | 516370473          | 7/29/2014  | 5318                | 4/18/2017  |
| Thailand                 | ORGANIC DISULFIDE BASED CORROSION INHIBITORS                                                                                    | 1601000583         | 7/29/2014  |                     |            |
| United States            | ORGANIC DISULFIDE BASED CORROSION INHIBITORS                                                                                    | 13958365           | 8/2/2013   | 9238588             | 1/19/2016  |
|                          | REDUCTION OF HYDROGEN SULFIDE AND/OR MALODOR GASSING FROM WATER VIA THE ADDITION OF PEROXYACETIC ACID/HYDROGEN PEROXIDE PRODUCT |                    |            |                     |            |
| United States            | REDUCTION OF HYDROGEN SULFIDE AND/OR MALODOR GASSING FROM WATER VIA THE ADDITION OF PEROXYACETIC ACID/HYDROGEN PEROXIDE PRODUCT | 13891908           | 5/10/2013  | 8992780             | 3/31/2015  |
| United States            | REDUCTION OF HYDROGEN SULFIDE AND/OR MALODOR GASSING FROM WATER VIA THE ADDITION OF PEROXYACETIC ACID/HYDROGEN PEROXIDE PRODUCT | 14665839           | 3/23/2015  | 9663390             | 5/30/2017  |

| Country Name           | TITLE                                                                                                                           | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
| United States          | REDUCTION OF HYDROGEN SULFIDE AND/OR MALODOR GASSING FROM WATER VIA THE ADDITION OF PEROXYACETIC ACID/HYDROGEN PEROXIDE PRODUCT | 15494645           | 4/24/2017  | 10081561      | 9/25/2018  |
| Canada                 | USE OF EMULSION POLYMERS TO FLOCCULATE SOLIDS IN ORGANIC LIQUIDS                                                                | 2936656            | 1/15/2015  |               |            |
| United States          | USE OF EMULSION POLYMERS TO FLOCCULATE SOLIDS IN ORGANIC LIQUIDS                                                                | 144162171          | 1/23/2014  | 9834730       | 12/5/2017  |
| India                  | PROCESS FOR SCAVENGING HYDROGEN SULFIDE PRESENT IN A FLUID STREAM                                                               | 668CHE2014         | 2/13/2014  |               |            |
|                        | PROCESS FOR SCAVENGING HYDROGEN SULFIDE PRESENT IN A FLUID STREAM                                                               | 15118588           | 2/11/2015  |               |            |
| United States          | PROCESS FOR SCAVENGING HYDROGEN SULFIDE PRESENT IN A FLUID STREAM                                                               | 15118588           | 2/11/2015  |               |            |
| Brazil                 | METHODS OF DETERMINING BIOCID Efficacy OR MECHANISM OF ACTION USING FLOW CYTOMETRY                                              | BR1120160037162    | 8/22/2014  |               |            |
| Canada                 | METHODS OF DETERMINING BIOCID Efficacy OR MECHANISM OF ACTION USING FLOW CYTOMETRY                                              | 2921812            | 8/22/2014  |               |            |
| European Patent Office | METHODS OF DETERMINING BIOCID Efficacy OR MECHANISM OF ACTION USING FLOW CYTOMETRY                                              | 148383193          | 8/22/2014  | 3036337       | 9/19/2018  |
| Great Britain          | METHODS OF DETERMINING BIOCID Efficacy OR MECHANISM OF ACTION USING FLOW CYTOMETRY                                              | 148383193          | 8/22/2014  | 3036337       | 9/19/2018  |
| Netherlands            | METHODS OF DETERMINING BIOCID Efficacy OR MECHANISM OF ACTION USING FLOW CYTOMETRY                                              | 148383193          | 8/22/2014  | 3036337       | 9/19/2018  |
| United States          | METHODS OF DETERMINING BIOCID Efficacy OR MECHANISM OF ACTION USING FLOW CYTOMETRY                                              | 14466232           | 8/22/2014  | 9382572       | 7/5/2016   |

| Country Name  | TITLE                                                                                                                                         | APPLICATION<br>NUMBER | DATE FILED | PATENT<br>NUMBER | GRANT<br>DATE |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------|------------------|---------------|
| Argentina     | METODOS PARA LA INHIBICION DE LA FORMACION DE OBSTRUCCIONES DE GAS HIDRATO EN CONDUCTOS QUE CONTIENEN UNA MEZCLA DE HIDROCARBURO Y AGUA       | 2004P103800           | 10/20/2004 | AR046549B1       | 7/13/2012     |
| Argentina     | UN METODO PARA LA INHIBICION DE LA FORMACION DE OBSTRUCCIONES DE HIDRATO DE GAS EN CONDUCTOS QUE CONTIENEN UNA MEZCLA DE HIDROCARBUROS Y AGUA | P120100757            | 3/8/2012   | AR085630B2       | 3/28/2014     |
| Australia     | METHODS FOR INHIBITTING HYDRATE BLOCKAGE IN OIL AND GAS PIPELINES USING SIMPLE QUATERNARY AMMONIUM AND PHOSPHONIUM COMPOUNDS                  | 2004285117            | 10/14/2004 | 2004285117       | 3/11/2010     |
| Canada        | METHODS FOR INHIBITTING HYDRATE BLOCKAGE IN OIL AND GAS PIPELINES USING SIMPLE QUATERNARY AMMONIUM AND PHOSPHONIUM COMPOUNDS                  | 2543426               | 10/14/2004 | 2543426          | 12/7/2010     |
| Great Britain | METHODS FOR INHIBITTING HYDRATE BLOCKAGE IN OIL AND GAS PIPELINES USING SIMPLE QUATERNARY AMMONIUM AND PHOSPHONIUM COMPOUNDS                  | 20060009874           | 10/14/2004 | 2422840          | 8/27/2008     |
| Norway        | METHODS FOR INHIBITTING HYDRATE BLOCKAGE IN OIL AND GAS PIPELINES USING SIMPLE QUATERNARY AMMONIUM AND PHOSPHONIUM COMPOUNDS                  | 20062235              | 10/14/2004 |                  |               |
| United States | METHODS FOR INHIBITTING HYDRATE BLOCKAGE IN OIL AND GAS PIPELINES USING SIMPLE QUATERNARY AMMONIUM AND PHOSPHONIUM COMPOUNDS                  | 10918191              | 8/13/2004  | 7264653          | 9/4/2007      |
| Venezuela     | METHODS FOR INHIBITTING HYDRATE BLOCKAGE IN OIL AND GAS PIPELINES USING SIMPLE QUATERNARY AMMONIUM AND PHOSPHONIUM COMPOUNDS                  | 2004001741            | 10/20/2004 |                  |               |

| Country Name           | TITLE                                                                                                    | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|------------------------|----------------------------------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
| Venezuela              | Processing aids for enhanced hydrocarbon recovery from oil sands, oil shale and other petroleum residues | 2004001576         | 9/22/2004  |               |            |
| United States          | CHEMICAL TREATMENT FOR HYDROSTATIC TEST                                                                  | 10293764           | 11/13/2002 | 6815208       | 11/9/2004  |
| Brunei Darussalam      | LOW DOSAGE NAPHTHENATE INHIBITORS                                                                        | RP202009           | 6/16/2005  | RP/20/2009    | 10/14/2008 |
| Brazil                 | METHOD OF INHIBITING THE ORGANIC SOAPS TRAINING.                                                         | 2005PI12114        | 6/16/2005  | PI0512114-0   | 12/11/2012 |
| Canada                 | LOW DOSAGE NAPHTHENATE INHIBITORS                                                                        | 2566563            | 6/16/2005  | 2566563       | 5/17/2011  |
| Switzerland            | LOW DOSAGE NAPHTHENATE INHIBITORS                                                                        | 58148420           | 6/16/2005  | 1751395       | 2/11/2009  |
|                        | METHODS FOR INHIBITING NAPHTHENATE SALT PRECIPITATES AND NAPHTHENATE-STABILIZED EMULSIONS                | 200580020030       | 6/16/2005  | 1977089       | 5/30/2012  |
| China                  |                                                                                                          |                    |            |               |            |
| Germany                | LOW DOSAGE NAPHTHENATE INHIBITORS                                                                        | 58148420           | 6/16/2005  | 1751395       | 2/11/2009  |
| Denmark                | LOW DOSAGE NAPHTHENATE INHIBITORS                                                                        | 58148420           | 6/16/2005  | 1751395       | 2/11/2009  |
| European Patent Office | LOW DOSAGE NAPHTHENATE INHIBITORS                                                                        | 58148420           | 6/16/2005  | 1751395       | 2/11/2009  |
|                        | METHODS FOR INHIBITING NAPHTHENATE SALT PRECIPITATES AND NAPHTHENATE-STABILIZED EMULSIONS                | 6005581            | 1/12/2006  | 2421245       | 11/12/2008 |
| Great Britain          |                                                                                                          |                    |            |               |            |
|                        | METHODS FOR INHIBITING NAPHTHENATE SALT PRECIPITATES AND NAPHTHENATE-STABILIZED EMULSIONS                | 6005581            | 1/12/2006  | 2421245       | 11/12/2008 |
| Great Britain          |                                                                                                          |                    |            |               |            |
|                        | METHODS FOR INHIBITING NAPHTHENATE SALT PRECIPITATES AND NAPHTHENATE-STABILIZED EMULSIONS                | PAa2006014087      | 6/16/2005  | 262328        | 11/20/2008 |
| Mexico                 |                                                                                                          |                    |            |               |            |

| Country Name           | TITLE                                                                                                                   | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|------------------------|-------------------------------------------------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
| Netherlands            | LOW DOSAGE NAPHTHENATE INHIBITORS                                                                                       | 58148420           | 6/16/2005  | 1751395       | 2/11/2009  |
| Norway                 | Fremgangsmåte for å inhibere dannelsen av naftenatutfellinger eller naftenatstabiliserte emulsjoner                     | 20070177           | 1/10/2007  | 341486        | 11/27/2017 |
| United States          | METHODS FOR INHIBITING NAPHTHENATE SALT PRECIPITATES AND NAPHTHENATE-STABILIZED EMULSIONS                               | 10869826           | 6/16/2004  | 7776930       | 8/17/2010  |
| United States          | LOW DOSAGE NAPHTHENATE INHIBITORS                                                                                       | 10944288           | 9/17/2004  | 7776931       | 8/17/2010  |
| Venezuela              | METHODS FOR INHIBITING NAPHTHENATE SALT PRECIPITATES AND NAPHTHENATE-STABILIZED EMULSIONS                               | 2005001188         | 6/16/2005  |               |            |
| United States          | QUANTITATIVE EVALUATION OF EMULSION STABILITY BASED ON CRITICAL ELECTRIC FIELD MEASUREMENTS                             | 11302800           | 12/13/2005 | 7373276       | 5/13/2008  |
| Brazil                 | PARTIAL PHOSPHONOALKYLATION OF AMINES TO ENHANCE ENVIRONMENTAL PROPERTIES WHILE MAINTAINING SCALE INHIBITOR PERFORMANCE | PI09149414         | 6/26/2009  |               |            |
| European Patent Office | PREPARATION OF ENVIRONMENTALLY ACCEPTABLE SCALE INHIBITORS                                                              | 97741896           | 6/26/2009  | 2318321       | 7/18/2018  |
| Great Britain          | PREPARATION OF ENVIRONMENTALLY ACCEPTABLE SCALE INHIBITORS                                                              | 97741896           | 6/26/2009  | 2318321       | 7/18/2018  |
| Norway                 | PREPARATION OF ENVIRONMENTALLY ACCEPTABLE SCALE INHIBITORS                                                              | 97741896           | 6/26/2009  | 2318321       | 7/18/2018  |
| Philippines            | PARTIAL PHOSPHONOALKYLATION OF AMINES TO ENHANCE ENVIRONMENTAL PROPERTIES WHILE MAINTAINING SCALE INHIBITOR PERFORMANCE | 12011500004        | 6/26/2009  |               |            |

| Country Name           | TITLE                                                                                                                                              | APPLICATION NUMBER | DATE FILED | PATENT NUMBER    | GRANT DATE |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------|------------------|------------|
| Singapore              | PARTIAL PHOSPHONOALKYLATION OF AMINES TO ENHANCE ENVIRONMENTAL PROPERTIES WHILE MAINTAINING SCALE INHIBITOR PERFORMANCE                            | 2010097202         | 6/26/2009  |                  |            |
| United States          | Preparation of environmentally acceptable scale inhibitors                                                                                         | 12492825           | 6/26/2009  | 9296631          | 3/29/2016  |
| Canada                 | INHIBITORS FOR ORGANICS SOLUBILIZED IN PRODUCED WATER                                                                                              | 2879167            | 8/28/2013  |                  |            |
| United States          | INHIBITORS FOR ORGANICS SOLUBILIZED IN PRODUCED WATER                                                                                              | 14012260           | 8/28/2013  | 9656889          | 5/23/2017  |
| Canada                 | EMULSION BREAKERS INCLUDING POLYESTER FUNCTIONALITIES                                                                                              | 2869951            | 5/15/2013  |                  |            |
| European Patent Office | EMULSION BREAKERS INCLUDING POLYESTER FUNCTIONALITIES, ITS METHOD FOR PREPARATION AND A METHOD FOR BREAKING AN EMULSION USING THE EMULSION BREAKER | 137291274          | 5/15/2013  | 2850158          | 9/26/2018  |
| United States          | EMULSION BREAKERS INCLUDING POLYESTER FUNCTIONALITIES                                                                                              | 15450953           | 3/6/2017   |                  |            |
| United States          | EMULSION BREAKERS INCLUDING POLYESTER FUNCTIONALITIES                                                                                              | 13894563           | 5/15/2013  | 9587155          | 3/7/2017   |
| Australia              | LOW DOSAGE POLYMERIC NAPHTHENATE INHIBITORS                                                                                                        | 2012254007         | 4/19/2012  | 2012254007       | 10/29/2015 |
| Brazil                 | inibidores de nafenato poliméricos de baixa dosagem                                                                                                | 1120130286628      | 4/19/2012  |                  |            |
| China                  | LOW DOSAGE POLYMERIC NAPHTHENATE INHIBITORS                                                                                                        | 2012800290484      | 4/19/2012  | ZL201280029048.4 | 10/19/2016 |
| Denmark                | LOW DOSAGE POLYMERIC NAPHTHENATE INHIBITORS                                                                                                        | 127259018          | 4/19/2012  | 2705113          | 7/8/2015   |

| Country Name           | TITLE                                                                                                    | APPLICATION NUMBER | DATE FILED | PATENT NUMBER    | GRANT DATE |
|------------------------|----------------------------------------------------------------------------------------------------------|--------------------|------------|------------------|------------|
| European Patent Office | LOW DOSAGE POLYMERIC NAPHTHENATE INHIBITORS                                                              | 127259018          | 4/19/2012  | 2705113          | 7/8/2015   |
| Great Britain          | LOW DOSAGE POLYMERIC NAPHTHENATE INHIBITORS                                                              | 127259018          | 4/19/2012  | 2705113          | 7/8/2015   |
| Indonesia              | LOW DOSAGE POLYMERIC NAPHTHENATE INHIBITORS                                                              | W0020130518<br>3   | 4/19/2012  | IDP00004202<br>3 | 6/30/2016  |
| Netherlands            | LOW DOSAGE POLYMERIC NAPHTHENATE INHIBITORS                                                              | 127259018          | 4/19/2012  | 2705113          | 7/8/2015   |
| Norway                 | LOW DOSAGE POLYMERIC NAPHTHENATE INHIBITORS                                                              | 127259018          | 4/19/2012  | 2705113          | 7/8/2015   |
| United States          | LOW DOSAGE POLYMERIC NAPHTHENATE INHIBITORS                                                              | 13450892           | 4/19/2012  | 9567509          | 2/14/2017  |
| Azerbaijan             | THERMAL PHASE SEPARATION SIMULATOR                                                                       | A20130099          | 2/17/2012  |                  |            |
| Brazil                 | simulador de separação de fase térmico, e, método para utilizar o simulador de separação de fase térmico | 112013020883<br>0  | 2/17/2012  |                  |            |
| Canada                 | THERMAL PHASE SEPARATION SIMULATOR                                                                       | 2827517            | 2/17/2012  | 2827517          | 7/21/2015  |
| China                  | THERMAL PHASE SEPARATION SIMULATOR                                                                       | 201280015323<br>7  | 2/17/2012  | 103442778        | 4/8/2015   |
| Colombia               | Simulador térmico de separación de fases                                                                 | 13214732           | 9/10/2013  | 13-214732        | 12/16/2014 |
| European Patent Office | THERMAL PHASE SEPARATION SIMULATOR                                                                       | 127167294          | 2/17/2012  | 2675542          | 11/19/2014 |
| Great Britain          | THERMAL PHASE SEPARATION SIMULATOR                                                                       | 127167294          | 2/17/2012  | 2675542          | 11/19/2014 |
| Indonesia              | THERMAL PHASE SEPARATION SIMULATOR                                                                       | W0020130372<br>2   | 2/17/2012  | IDP00004418<br>9 | 1/23/2017  |
| Kazakhstan             | THERMAL PHASE SEPARATION SIMULATOR                                                                       | 201316181          | 2/17/2012  | 29542            | 1/23/2015  |
| Mexico                 | THERMAL PHASE SEPARATION SIMULATOR                                                                       | 20130009410        | 2/17/2012  | 337386           | 3/1/2016   |
| Norway                 | THERMAL PHASE SEPARATION SIMULATOR                                                                       | 127167294          | 2/17/2012  | 2675542          | 11/19/2014 |
| Oman                   | THERMAL PHASE SEPARATION SIMULATOR                                                                       | P2013000196        | 2/17/2012  |                  |            |
| Russia                 | THERMAL PHASE SEPARATION SIMULATOR                                                                       | 2013138018         | 2/17/2012  | 2586094          | 6/10/2016  |
| United States          | THERMAL PHASE SEPARATION SIMULATOR                                                                       | 13399663           | 2/17/2012  | 8888362          | 11/18/2014 |

| Country Name              | TITLE                           | APPLICATION<br>NUMBER | DATE FILED | PATENT<br>NUMBER | GRANT<br>DATE |
|---------------------------|---------------------------------|-----------------------|------------|------------------|---------------|
| Australia                 | WELL TREATMENT                  | 2008263581            | 6/11/2008  | 2008263581       | 5/16/2013     |
| Germany                   | WELL TREATMENT                  | 87625422              | 6/11/2008  | 2173831          | 6/6/2012      |
| Denmark                   | WELL TREATMENT                  | 87625422              | 6/11/2008  | 2173831          | 6/6/2012      |
| European<br>Patent Office | WELL TREATMENT                  | 87625422              | 6/11/2008  | 2173831          | 6/6/2012      |
| France                    | WELL TREATMENT                  | 87625422              | 6/11/2008  | 2173831          | 6/6/2012      |
| Great Britain             | WELL TREATMENT                  | 7113426               | 6/12/2007  |                  |               |
| Great Britain             | WELL TREATMENT                  | 87625422              | 6/11/2008  | 2173831          | 6/6/2012      |
| Italy                     | WELL TREATMENT                  | 87625422              | 6/11/2008  | 2173831          | 6/6/2012      |
| Netherlands               | WELL TREATMENT                  | 87625422              | 6/11/2008  | 2173831          | 6/6/2012      |
| Turkey                    | WELL TREATMENT                  | 87625422              | 6/11/2008  | 2173831          | 6/6/2012      |
| United States             | WELL TREATMENT                  | 12664023              | 6/11/2008  | 8653008          | 2/18/2014     |
| Austria                   | SCALE INHIBITING WELL TREATMENT | 67651885              | 8/2/2006   | 1910495          | 11/19/2014    |
| Australia                 | Scale inhibiting well treatment | 2006274668            | 8/2/2006   | 2006274668       | 10/6/2011     |
| Canada                    | SCALE INHIBITING WELL TREATMENT | 2614868               | 8/2/2006   | 2614868          | 2/17/2015     |
| Germany                   | SCALE INHIBITING WELL TREATMENT | 67651885              | 8/2/2006   | 1910495          | 11/19/2014    |
| Denmark                   | SCALE INHIBITING WELL TREATMENT | 67651885              | 8/2/2006   | 1910495          | 11/19/2014    |
| European<br>Patent Office | SCALE INHIBITING WELL TREATMENT | 67651885              | 8/2/2006   | 1910495          | 11/19/2014    |
| Spain                     | SCALE INHIBITING WELL TREATMENT | 67651885              | 8/2/2006   | 1910495          | 11/19/2014    |
| France                    | SCALE INHIBITING WELL TREATMENT | 67651885              | 8/2/2006   | 1910495          | 11/19/2014    |
| Great Britain             | SCALE INHIBITING WELL TREATMENT | 67651885              | 8/2/2006   | 1910495          | 11/19/2014    |
| Ireland                   | SCALE INHIBITING WELL TREATMENT | 67651885              | 8/2/2006   | 1910495          | 11/19/2014    |
| Netherlands               | SCALE INHIBITING WELL TREATMENT | 67651885              | 8/2/2006   | 1910495          | 11/19/2014    |
| Norway                    | Skjellhindrende brønnbehandling | 20081023              | 2/26/2008  | 340799           | 6/19/2017     |

| Country Name           | TITLE                                                                                     | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|------------------------|-------------------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
| United States          | Scale inhibiting well treatment                                                           | 11997879           | 8/2/2006   | 8586511       | 11/19/2013 |
| Angola                 | METHOD AND COMPOSITION FOR PREVENTING CORROSION OF METAL SURFACES (AMPHOACETATES )        | 2448               | 11/8/2011  |               |            |
| Australia              | Method and composition for preventing corrosion of metal surfaces                         | 2011327873         | 11/8/2011  | 2011327873    | 5/4/2017   |
| Brazil                 | método e composição para prevenir a corrosão de superfícies de metal                      | 1120130113570      | 11/8/2011  |               |            |
| Canada                 | METHOD AND COMPOSITION FOR PREVENTING CORROSION OF METAL SURFACES                         | 2817456            | 11/8/2011  |               |            |
| European Patent Office | METHOD AND COMPOSITION FOR PREVENTING CORROSION OF METAL SURFACES                         | 117826644          | 11/8/2011  |               |            |
| United States          | METHOD AND COMPOSITION FOR PREVENTING CORROSION OF METAL SURFACES                         | 13884380           | 5/9/2013   | 10000641      | 6/19/2018  |
| Canada                 | HYDROCARBON MOBILITY AND RECOVERY THROUGH IN-SITU COMBUSTION WITH THE ADDITION OF AMMONIA | 2846953            | 9/21/2012  |               |            |
| Indonesia              | HYDROCARBON MOBILITY AND RECOVERY THROUGH IN-SITU COMBUSTION WITH THE ADDITION OF AMMONIA | P00201402195       | 9/21/2012  |               |            |
| Oman                   | HYDROCARBON MOBILITY AND RECOVERY THROUGH IN-SITU COMBUSTION WITH THE ADDITION OF AMMONIA | P201400053         | 9/21/2012  |               |            |
| United States          | HYDROCARBON MOBILITY AND RECOVERY THROUGH IN-SITU COMBUSTION WITH THE ADDITION OF AMMONIA | 14241390           | 9/21/2012  | 9574429       | 2/21/2017  |
| Russia                 | IN SITU EXTRACTION FROM OIL-BEARING SAND BY AMMONIA                                       | 2014153492         | 5/31/2013  | 2618798       | 5/11/2017  |
| Venezuela              | IN SITU EXTRACTION OF OILSAND WITH AMMONIA                                                | 2013000669         | 6/4/2013   |               |            |

| Country Name           | TITLE                                                         | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|------------------------|---------------------------------------------------------------|--------------------|------------|---------------|------------|
| Brazil                 | tratamento por compressão para purga de sulfeto de hidrogênio | BR1120150112323    | 12/17/2013 |               |            |
| European Patent Office | SQUEEZE TREATMENT FOR IN SITU SCAVENGING OF HYDROGEN SULFIDE  | 138647573          | 12/17/2013 |               |            |
| United States          | SQUEEZE TREATMENT FOR IN SITU SCAVENGING OF HYDROGEN SULFIDE  | 15494728           | 4/24/2017  | 9896924       | 2/20/2018  |
|                        | SQUEEZE TREATMENT FOR IN SITU SCAVENGING OF HYDROGEN SULFIDE  | 15899017           | 2/19/2018  | 10370951      | 8/6/2019   |
| United States          | SQUEEZE TREATMENT FOR IN SITU SCAVENGING OF HYDROGEN SULFIDE  | 14108587           | 12/17/2013 | 9631467       | 4/25/2017  |
| Australia              | SCAVENGING HYDROGEN SULFIDE                                   | 2013361681         | 12/17/2013 | 2013361681    | 7/12/2018  |
| Canada                 | SCAVENGING HYDROGEN SULFIDE                                   | 2889615            | 12/17/2013 |               |            |
| European Patent Office | SCAVENGING HYDROGEN SULFIDE                                   | 138663836          | 12/17/2013 | 2935193       | 10/10/2018 |
| Great Britain          | SCAVENGING HYDROGEN SULFIDE                                   | 138663836          | 12/17/2013 | 2935193       | 10/10/2018 |
| Netherlands            | SCAVENGING HYDROGEN SULFIDE                                   | 138663836          | 12/17/2013 | 2935193       | 10/10/2018 |
| Norway                 | SCAVENGING HYDROGEN SULFIDE                                   | 138663836          | 12/17/2013 | 2935193       | 10/10/2018 |
| United States          | SCAVENGING HYDROGEN SULFIDE                                   | 14108617           | 12/17/2013 | 9638018       | 5/2/2017   |
| Australia              | METHOD                                                        | 2012314144         | 9/25/2012  | 2012314144    | 2/18/2016  |
| Canada                 | METHOD                                                        | 2844416            | 9/25/2012  |               |            |
| European Patent Office | METHOD                                                        | 127701936          | 9/25/2012  |               |            |
| United States          | METHOD OF INCREASING SCALE INHIBITOR RETENTION                | 15191201           | 6/23/2016  | 10072203      | 9/11/2018  |
| United States          | METHOD OF INCREASING SCALE INHIBITOR RETENTION                | 16124359           | 9/7/2018   |               |            |
| United States          | METHOD OF INCREASING SCALE INHIBITOR RETENTION                | 16124359           | 9/7/2018   |               |            |

| Country Name           | TITLE                                                                             | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|------------------------|-----------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
|                        | METHOD                                                                            | 14239034           | 2/14/2014  |               |            |
| United States          | CORROSION INHIBITORS WITH LOW ENVIRONMENTAL TOXICITY                              | 9288893            | 4/9/1999   | 6475431       | 11/5/2002  |
| United States          | SCALE INHIBITORS                                                                  | 9361468            | 7/27/1999  | 6379612       | 4/30/2002  |
| Australia              | SCALE INHIBITING WELL TREATMENT                                                   | 2007204243         | 1/15/2007  | 2007204243    | 1/3/2013   |
| Canada                 | SCALE INHIBITING WELL TREATMENT                                                   | 2635032            | 1/15/2007  | 2635032       | 12/10/2013 |
| China                  | Inhibiting scale of well treatment                                                | 200780003107<br>X  | 1/15/2007  | 101374923     | 1/20/2016  |
| Denmark                | SCALE INHIBITING WELL TREATMENT                                                   | 77049054           | 1/15/2007  | 1981947       | 11/27/2013 |
| European Patent Office | SCALE INHIBITING WELL TREATMENT                                                   | 77049054           | 1/15/2007  | 1981947       | 11/27/2013 |
| France                 | SCALE INHIBITING WELL TREATMENT                                                   | 77049054           | 1/15/2007  | 1981947       | 11/27/2013 |
| Great Britain          | SCALE INHIBITING WELL TREATMENT                                                   | 77049054           | 1/15/2007  | 1981947       | 11/27/2013 |
| Ireland                | SCALE INHIBITING WELL TREATMENT                                                   | 77049054           | 1/15/2007  | 1981947       | 11/27/2013 |
| Netherlands            | SCALE INHIBITING WELL TREATMENT                                                   | 77049054           | 1/15/2007  | 1981947       | 11/27/2013 |
| Norway                 | SCALE INHIBITING WELL TREATMENT                                                   | 20083433           | 1/15/2007  |               |            |
| United States          | SCALE INHIBITING WELL TREATMENT                                                   | 12160104           | 1/15/2007  | 8343897       | 1/1/2013   |
| Australia              | WELL TREATMENT                                                                    | 2007285556         | 8/16/2007  | 2007285556    | 1/24/2013  |
| Canada                 | WELL TREATMENT COMPOSITION FOR INCREASING LIFETIME OF SCALE INHIBITING TREATMENTS | 2660097            | 8/16/2007  | 2660097       | 7/10/2012  |
| Germany                | WELL TREATMENT                                                                    | 77892453           | 8/16/2007  | 2052050       | 12/15/2010 |
| Denmark                | WELL TREATMENT                                                                    | 77892453           | 8/16/2007  | 2052050       | 12/15/2010 |
| European Patent Office | WELL TREATMENT                                                                    | 77892453           | 8/16/2007  | 2052050       | 12/15/2010 |
| France                 | WELL TREATMENT                                                                    | 77892453           | 8/16/2007  | 2052050       | 12/15/2010 |

| Country Name  | TITLE                                                                                                                    | APPLICATION<br>NUMBER | DATE FILED | PATENT<br>NUMBER | GRANT<br>DATE |
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| Great Britain | WELL TREATMENT                                                                                                           | 77892453              | 8/16/2007  | 2052050          | 12/15/2010    |
| Italy         | WELL TREATMENT                                                                                                           | 77892453              | 8/16/2007  | 2052050          | 12/15/2010    |
| Netherlands   | WELL TREATMENT                                                                                                           | 77892453              | 8/16/2007  | 2052050          | 12/15/2010    |
| Norway        | Brønnbehandling                                                                                                          | 20091114              | 3/13/2009  | 341276           | 10/2/2017     |
| Turkey        | WELL TREATMENT                                                                                                           | 77892453              | 8/16/2007  | 2052050          | 12/15/2010    |
| United States | WELL TREATMENT COMPRISING A POLYMER FORMED FROM A DIALLYL AMMONIUM SALT AND A SCALE INHIBITOR                            | 12377331              | 8/16/2007  | 8101554          | 1/24/2012     |
| Great Britain | METHOD OF MOUNTING AN ARTICLE TO AN OBJECT                                                                               | 20070000225           | 1/8/2007   | 2434022          | 9/29/2010     |
| Great Britain | APPARATUS AND METHOD FOR MOUNTING ANTIFOULING MARKERS                                                                    | 20100012254           | 7/21/2010  | 2473526          | 8/8/2012      |
| Great Britain | Retaining a proppant by use of an organosilane                                                                           | 20070016784           | 8/29/2007  | 2453317          | 12/19/2012    |
| Australia     | FRACTURING FLUIDS INCLUDING AMINE OXIDES AS FLOWBACK AIDS                                                                | 2016203167            | 1/12/2013  | 2016203167       | 2/8/2018      |
| Canada        | FRACTURING FLUIDS INCLUDING AMINE OXIDES AS FLOWBACK AIDS                                                                | 2892816               | 1/7/2014   |                  |               |
| United States | FRACTURING FLUIDS INCLUDING AMINE OXIDES AS FLOWBACK AIDS                                                                | 13739172              | 1/11/2013  |                  |               |
| Australia     | THE USE OF OLIGO-QUATERNARY COMPOSITIONS TO INCREASE SCALE INHIBITOR LIFETIME IN A SUBTERRANEAN FORMATION                | 2013266411            | 5/22/2013  | 2013266411       | 10/6/2016     |
| Brazil        | uso de composições oligo-quaternárias para aumentar tempo de vida do inibidor de incrustação em uma formação subterrânea | 112014029138<br>1     | 5/22/2013  |                  |               |

| Country Name           | TITLE                                                                                                            | APPLICATION NUMBER | DATE FILED | PATENT NUMBER    | GRANT DATE |
|------------------------|------------------------------------------------------------------------------------------------------------------|--------------------|------------|------------------|------------|
| European Patent Office | THE USE OF OLIGO-QUATERNARY COMPOSITIONS TO INCREASE SCALE INHIBITOR LIFETIME IN A SUBTERRANEAN FORMATION        | 137263869          | 5/22/2013  |                  |            |
| Mexico                 | THE USE OF OLIGO-QUATERNARY COMPOSITIONS TO INCREASE SCALE INHIBITOR LIFETIME IN A SUBTERRANEAN FORMATION        | MXa2014013456      | 5/22/2013  |                  |            |
| Nigeria                | THE USE OF OLIGO-QUATERNARY COMPOSITIONS TO INCREASE SCALE INHIBITOR LIFETIME IN A SUBTERRANEAN FORMATION        | NGPTC2014551       | 5/22/2013  | NG/PT/C/2014/551 | 9/5/2016   |
| United States          | Use of oligo-quaternary compositions to increase scale inhibitor lifetime in a subterranean formation            | 13899631           | 5/22/2013  | 9803450          | 10/31/2017 |
| United States          | Use of oligo-quaternary compositions to increase scale inhibitor lifetime in a subterranean formation            | 13899643           | 5/22/2013  | 9624758          | 4/18/2017  |
| Australia              | ENVIRONMENTALLY BENEFICIAL RECYCLING OF BRINES IN THE PROCESS OF REDUCING FRICTION RESULTING FROM TURBULENT FLOW | 2013302472         | 8/16/2013  | 2013302472       | 5/11/2017  |
| Brazil                 | ENVIRONMENTALLY BENEFICIAL RECYCLING OF BRINES IN THE PROCESS OF REDUCING FRICTION RESULTING FROM TURBULENT FLOW | BR1120150022669    | 8/16/2013  |                  |            |
|                        | ENVIRONMENTALLY BENEFICIAL RECYCLING OF BRINES IN THE PROCESS OF REDUCING FRICTION RESULTING FROM TURBULENT FLOW | 2880166            | 8/16/2013  | 2880166          | 6/18/2019  |
| European Patent Office | ENVIRONMENTALLY BENEFICIAL RECYCLING OF BRINES IN THE PROCESS OF REDUCING FRICTION RESULTING FROM TURBULENT FLOW | 138297510          | 8/16/2013  |                  |            |

| Country Name                               | TITLE                                                                                                            | APPLICATION NUMBER  | DATE FILED | PATENT NUMBER     | GRANT DATE |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------------|---------------------|------------|-------------------|------------|
| United States                              | ENVIRONMENTALLY BENEFICIAL RECYCLING OF BRINES IN THE PROCESS OF REDUCING FRICTION RESULTING FROM TURBULENT FLOW | 13968483            | 8/16/2013  | 9404033           | 8/2/2016   |
| Australia                                  | ANTI-AGGLOMERANTS FOR CONTROLLING GAS HYDRATES                                                                   | 2018211357          | 10/8/2014  |                   |            |
| Australia                                  | ANTI-AGGLOMERANTS FOR CONTROLLING GAS HYDRATES                                                                   | 2014355141          | 10/8/2014  | 2014355141        | 8/23/2018  |
| Brazil                                     | ANTI-AGGLOMERANTS FOR CONTROLLING GAS HYDRATES                                                                   | BR1120160117<br>980 | 10/8/2014  |                   |            |
| Canada                                     | ANTI-AGGLOMERANTS FOR CONTROLLING GAS HYDRATES                                                                   | 2931192             | 10/8/2014  |                   |            |
| Mexico                                     | ANTI-AGGLOMERANTS FOR CONTROLLING GAS HYDRATES                                                                   | MXa20160068<br>52   | 10/8/2014  |                   |            |
|                                            | ANTI-AGGLOMERANTS FOR CONTROLLING GAS HYDRATES                                                                   | NGPTC2016190<br>8   | 10/8/2014  | NGPTC20161<br>908 | 1/21/2019  |
| African Intellectual Property Organization | ANTI-AGGLOMERANTS FOR CONTROLLING GAS HYDRATES                                                                   | 1201600189          | 10/8/2014  |                   |            |
| United States                              | ANTI-AGGLOMERANTS FOR CONTROLLING GAS HYDRATES                                                                   | 14090621            | 11/26/2013 | 9410073           | 8/9/2016   |
|                                            | ANTI-AGGLOMERANTS FOR CONTROLLING GAS HYDRATES                                                                   | 15231424            | 8/8/2016   | 10281086          | 5/7/2019   |
| Australia                                  | LOW DOSE GAS HYDRATE INHIBITOR COMPOSITIONS                                                                      | 2015374274          | 12/28/2015 |                   |            |
| Brazil                                     | composições inibidoras de hidrato de gás de baixa dose                                                           | BR1120170140<br>934 | 12/28/2015 |                   |            |

| Country Name           | TITLE                                                                                                           | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|------------------------|-----------------------------------------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
| Canada                 | LOW DOSE GAS HYDRATE INHIBITOR COMPOSITIONS                                                                     | 2972111            | 12/28/2015 |               |            |
| European Patent Office | LOW DOSE GAS HYDRATE INHIBITOR COMPOSITIONS                                                                     | 158760801          | 12/28/2015 |               |            |
| Saudi Arabia           | LOW DOSE GAS HYDRATE INHIBITOR COMPOSITIONS                                                                     | 517381869          | 12/28/2015 |               |            |
| United States          | LOW DOSE GAS HYDRATE INHIBITOR COMPOSITIONS                                                                     | 14587777           | 12/31/2014 | 9834720       | 12/5/2017  |
| Brazil                 | ?método para aumentar a recuperação de óleo bruto a partir de uma formação subterrânea contendo hidrocarboneto? | BR1120160251490    | 4/22/2015  |               |            |
| Saudi Arabia           | IMPROVED PERMEABILITY OF SUBTERRANEAN RESERVOIRS USING ACID DIVERSION                                           | 516380153          | 4/22/2015  |               |            |
|                        | PERMEABILITY OF SUBTERRANEAN RESERVOIRS USING ACID DIVERSION                                                    | 14264664           | 4/29/2014  | 10253609      | 4/9/2019   |
|                        | QUANTIFICATION OF ASPHALTENE INHIBITORS IN CRUDE OIL USING THERMAL ANALYSIS COUPLED WITH MASS SPECTROMETRY      | 14473287           | 8/29/2014  | 9453830       | 9/27/2016  |
| United States          |                                                                                                                 |                    |            |               |            |
| Australia              | SURFACTANT ASSISTED OIL RECOVERY USING ALCOHOL ETHER SULFONATES AND CATIONIC SURFACTANTS                        | 2015241338         | 3/24/2015  |               |            |
| Brazil                 | SURFACTANT ASSISTED OIL RECOVERY USING ALCOHOL ETHER SULFONATES AND CATIONIC SURFACTANTS                        | BR1120160226380    | 3/24/2015  |               |            |
| Canada                 | SURFACTANT ASSISTED OIL RECOVERY USING ALCOHOL ETHER SULFONATES AND CATIONIC SURFACTANTS                        | 2944356            | 3/24/2015  |               |            |
| China                  | SURFACTANT ASSISTED OIL RECOVERY USING ALCOHOL ETHER SULFONATES AND CATIONIC SURFACTANTS                        | 2015800218485      | 3/24/2015  |               |            |
| Colombia               | SURFACTANT ASSISTED OIL RECOVERY USING ALCOHOL ETHER SULFONATES AND CATIONIC SURFACTANTS                        | NC20160002620      | 3/24/2015  |               |            |

| Country Name             | TITLE                                                                                                                                | APPLICATION NUMBER  | DATE FILED | PATENT NUMBER | GRANT DATE |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------|---------------|------------|
| European Patent Office   | SURFACTANT ASSISTED OIL RECOVERY USING ALCOHOL ETHER SULFONATES AND CATIONIC SURFACTANTS                                             | 157734195           | 3/24/2015  |               |            |
| Mexico                   | SURFACTANT ASSISTED OIL RECOVERY USING ALCOHOL ETHER SULFONATES AND CATIONIC SURFACTANTS                                             | MXa20160129<br>81   | 3/24/2015  |               |            |
|                          | EXTRACTION OF OIL BY THE SURFACE-ACTIVE SUBSTANCES BY USING THE ESTERS OF SULFONATE AND ALCOHOL AND CATION SURFACE-ACTIVE SUBSTANCES | 2016142368          | 3/24/2015  | 2690986       | 6/7/2019   |
| United States            | SURFACTANT ASSISTED OIL RECOVERY USING ALCOHOL ETHER SULFONATES AND CATIONIC SURFACTANTS                                             | 14231307            | 3/31/2014  | 9926486       | 3/27/2018  |
| United States            | SURFACTANT ASSISTED OIL RECOVERY USING ALCOHOL ETHER SULFONATES AND CATIONIC SURFACTANTS                                             | 15839523            | 12/12/2017 |               |            |
| United Arab Emirates     | POLYMER EMULSIONS FOR USE IN CRUDE OIL RECOVERY                                                                                      | P60000682017        | 7/29/2015  |               |            |
| Angola                   | POLYMER EMULSIONS FOR USE IN CRUDE OIL RECOVERY                                                                                      | 3407                | 7/29/2015  |               |            |
| Australia                | POLYMER EMULSIONS FOR USE IN CRUDE OIL RECOVERY                                                                                      | 2015296573          | 7/29/2015  |               |            |
| Bahrain                  | POLYMER EMULSIONS FOR USE IN CRUDE OIL RECOVERY                                                                                      | 20170015            | 7/29/2015  |               |            |
| Brazil                   | emulsões de polímero para uso em restauração de óleo cru                                                                             | BR1120170019<br>515 | 7/29/2015  |               |            |
| Canada                   | POLYMER EMULSIONS FOR USE IN CRUDE OIL RECOVERY                                                                                      | 2956444             | 7/29/2015  |               |            |
|                          |                                                                                                                                      | 201580049742        |            |               |            |
| China                    | POLYMER EMULSIONS FOR USE IN CRUDE OIL RECOVERY                                                                                      | 6                   | 7/29/2015  |               |            |
|                          |                                                                                                                                      | NC2017000072        |            |               |            |
| Colombia                 | POLYMER EMULSIONS FOR USE IN CRUDE OIL RECOVERY                                                                                      | 6                   | 7/29/2015  |               |            |
| Eurasian Regional Patent | ПОЛИМЕРНЫЕ ЭМУЛЬСИИ ДЛЯ ПРИМЕНЕНИЯ ПРИ ИЗВЛЕЧЕНИИ СЫРОЙ НЕФТИ                                                                        | 201790081           | 7/29/2015  |               |            |

| Country Name                                        | TITLE                                                 | APPLICATION<br>NUMBER | DATE FILED | PATENT<br>NUMBER | GRANT<br>DATE |
|-----------------------------------------------------|-------------------------------------------------------|-----------------------|------------|------------------|---------------|
| Ecuador                                             | POLYMER EMULSIONS FOR USE IN CRUDE OIL RECOVERY       | IEPI20175887          | 7/29/2015  |                  |               |
| Egypt                                               | POLYMER EMULSIONS FOR USE IN CRUDE OIL RECOVERY       | 2017141               | 7/29/2015  |                  |               |
| European<br>Patent Office                           | POLYMER EMULSIONS FOR USE IN CRUDE OIL RECOVERY       | 158273011             | 7/29/2015  |                  |               |
| Israel                                              | POLYMER EMULSIONS FOR USE IN CRUDE OIL RECOVERY       | 250283                | 7/29/2015  |                  |               |
| India                                               | POLYMER EMULSIONS FOR USE IN CRUDE OIL RECOVERY       | 201717003169          | 7/29/2015  |                  |               |
| Mexico                                              | POLYMER EMULSIONS FOR USE IN CRUDE OIL RECOVERY       | MXa20170012<br>82     | 7/29/2015  |                  |               |
| African<br>Intellectual<br>Property<br>Organization | POLYMER EMULSIONS FOR USE IN CRUDE OIL RECOVERY       | 1201700032            | 7/29/2015  |                  |               |
| Oman                                                | POLYMER EMULSIONS FOR USE IN CRUDE OIL RECOVERY       | OMP20170002<br>9      | 7/29/2015  |                  |               |
| Qatar                                               | POLYMER EMULSIONS FOR USE IN CRUDE OIL RECOVERY       | QA2017010004<br>6     | 7/29/2015  |                  |               |
| Saudi Arabia                                        | POLYMER EMULSIONS FOR USE IN CRUDE OIL RECOVERY       | 517380794             | 7/29/2015  |                  |               |
| United States                                       | POLYMER EMULSIONS FOR USE IN CRUDE OIL RECOVERY       | 14445599              | 7/29/2014  |                  |               |
| Argentina                                           | WEAK GEL SYSTEM FOR CHEMICAL ENHANCED OIL<br>RECOVERY | P160103563            | 11/21/2016 |                  |               |
| Australia                                           | WEAK GEL SYSTEM FOR CHEMICAL ENHANCED OIL<br>RECOVERY | 2016359679            | 11/23/2016 |                  |               |
| Brazil                                              | WEAK GEL SYSTEM FOR CHEMICAL ENHANCED OIL<br>RECOVERY | BR1120180102<br>946   | 11/23/2016 |                  |               |
| Canada                                              | WEAK GEL SYSTEM FOR CHEMICAL ENHANCED OIL<br>RECOVERY | 3005976               | 11/23/2016 |                  |               |

| Country Name                           | TITLE                                                                  | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
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| Colombia                               | Sistema de gel débil para la recuperación de petróleo mejorado químico | 20180005362        | 5/23/2018  |               |            |
| European Patent Office                 | WEAK GEL SYSTEM FOR CHEMICAL ENHANCED OIL RECOVERY                     | 168692143          | 11/23/2016 |               |            |
| Mexico                                 | WEAK GEL SYSTEM FOR CHEMICAL ENHANCED OIL RECOVERY                     | MXa2018006395      | 11/23/2016 |               |            |
| Russia                                 | WEAK GEL SYSTEM FOR CHEMICAL ENHANCED OIL RECOVERY                     | 2018122762         | 11/23/2016 |               |            |
|                                        | WEAK GEL SYSTEM FOR CHEMICAL ENHANCED OIL RECOVERY                     | 16449766           | 6/24/2019  |               |            |
|                                        | WEAK GEL SYSTEM FOR CHEMICAL ENHANCED OIL RECOVERY                     | 15360148           | 11/23/2016 | 10370585      | 8/6/2019   |
| World Intellectual Patent Organization | WEAK GEL SYSTEM FOR CHEMICAL ENHANCED OIL RECOVERY                     | PCTUS2016063469    | 11/23/2016 |               |            |
| Canada                                 | REVERSE EMULSION BREAKER POLYMERS                                      | 2913606            | 12/1/2015  |               |            |
| United States                          | REVERSE EMULSION BREAKER POLYMERS                                      | 14598034           | 1/15/2015  | 9260545       | 2/16/2016  |
| United States                          | REVERSE EMULSION BREAKER POLYMERS                                      | 15043017           | 2/12/2016  | 9434803       | 9/6/2016   |
| Australia                              | USE OF ANTI-AGGLOMERANTS IN HIGH GAS TO OIL RATIO FORMATIONS           | 2015380352         | 12/10/2015 |               |            |
| European Patent Office                 | USE OF ANTI-AGGLOMERANTS IN HIGH GAS TO OIL RATIO FORMATIONS           | 158806422          | 12/10/2015 |               |            |
| GCC (Gulf Co-op Council)               | USE OF ANTI-AGGLOMERANTS IN HIGH GAS TO OIL RATIO FORMATIONS           | GC201630801        | 1/28/2016  |               |            |

| Country Name                           | TITLE                                                                                              | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|----------------------------------------|----------------------------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
| United States                          | USE OF ANTI-AGGLOMERANTS IN HIGH GAS TO OIL RATIO FORMATIONS                                       | 14610789           | 1/30/2015  | 9988568       | 6/5/2018   |
| United States                          | SOLID ANTIMICROBIAL GLUTARALDEHYDE COMPOSITIONS AND THEIR USES                                     | 15450257           | 3/6/2017   |               |            |
| World Intellectual Patent Organization | SOLID ANTIMICROBIAL GLUTARALDEHYDE COMPOSITIONS AND THEIR USES                                     | PCTUS2017020862    | 3/6/2017   |               |            |
| Australia                              | CATIONIC AMMONIUM SURFACTANTS AS LOW DOSAGE HYDRATE INHIBITORS                                     | 2015339100         | 10/30/2015 |               |            |
| Brazil                                 | composição inibidora de hidrato, e, método para inibição da formulação de aglomerantes de hidrato. | BR1120170088614    | 10/30/2015 |               |            |
| Saudi Arabia                           | CATIONIC AMMONIUM SURFACTANTS AS LOW DOSAGE HYDRATE INHIBITORS                                     | 517381415          | 10/30/2015 |               |            |
| United States                          | CATIONIC AMMONIUM SURFACTANTS AS LOW DOSAGE HYDRATE INHIBITORS                                     | 14528877           | 10/30/2014 | 9765254       | 9/19/2017  |
| United States                          | CATIONIC AMMONIUM SURFACTANTS AS LOW DOSAGE HYDRATE INHIBITORS                                     | 15522906           | 10/30/2015 |               |            |
| Australia                              | THERMALLY STABLE POLYMERS FOR ENHANCED OIL RECOVERY                                                | 2015376872         | 12/28/2015 |               |            |
| Brazil                                 | polímeros termicamente estáveis para recuperação de petróleo realçada                              | BR1120170133229    | 12/28/2015 |               |            |
| China                                  | THERMALLY STABLE POLYMERS FOR ENHANCED OIL RECOVERY                                                | 2015800697047      | 12/28/2015 |               |            |

| Country Name                               | TITLE                                                                                                                             | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
| European Patent Office                     | THERMALLY STABLE POLYMERS FOR ENHANCED OIL RECOVERY                                                                               | 158782946          | 12/28/2015 |               |            |
| United States                              | THERMALLY STABLE POLYMERS FOR ENHANCED OIL RECOVERY                                                                               | 14594706           | 1/12/2015  |               |            |
| Argentina                                  | SALES DE DIFENILIODONIO COMO INHIBIDORAS DE LA SULFIDOGÉNESIS Y ANTIMICROBIANAS                                                   | P160100305         | 2/3/2016   |               |            |
| Australia                                  | DIPHENYLIODONIUM SALTS AS SULFIDOGENESIS INHIBITORS AND ANTIMICROBIALS                                                            | 2016215527         | 2/2/2016   |               |            |
| Brazil                                     | métodos para reduzir ou impedir crescimento de um micróbio e para reduzir a concentração de sulfeto de hidrogênio, e, composição. | BR1120170163985    | 2/2/2016   |               |            |
| Canada                                     | DIPHENYLIODONIUM SALTS AS SULFIDOGENESIS INHIBITORS AND ANTIMICROBIALS                                                            | 2975910            | 2/2/2016   |               |            |
| Colombia                                   | DIPHENYLIODONIUM SALTS AS SULFIDOGENESIS INHIBITORS AND ANTIMICROBIALS                                                            | NC20170006946      | 2/2/2016   |               |            |
| Ecuador                                    | DIPHENYLIODONIUM SALTS AS SULFIDOGENESIS INHIBITORS AND ANTIMICROBIALS                                                            | IEPI201743927      | 2/2/2016   |               |            |
| European Patent Office                     | DIPHENYLIODONIUM SALTS AS SULFIDOGENESIS INHIBITORS AND ANTIMICROBIALS                                                            | 167470707          | 2/2/2016   |               |            |
| Nigeria                                    | DIPHENYLIODONIUM SALTS AS SULFIDOGENESIS INHIBITORS AND ANTIMICROBIALS                                                            | NGPTC20172328      | 2/2/2016   |               |            |
| African Intellectual Property Organization | DIPHENYLIODONIUM SALTS AS SULFIDOGENESIS INHIBITORS AND ANTIMICROBIALS                                                            | 1201700308         | 2/2/2016   |               |            |

| Country Name           | TITLE                                                                                          | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|------------------------|------------------------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
| Russia                 | DIPHENYLIODONIUM SALTS AS SULFIDOGENESIS INHIBITORS AND ANTIMICROBIALS                         | 2017127510         | 2/2/2016   | 2673483       | 11/27/2018 |
| United States          | DIPHENYLIODONIUM SALTS AS SULFIDOGENESIS INHIBITORS AND ANTIMICROBIALS                         | 15013595           | 2/2/2016   | 10098346      | 10/16/2018 |
| Argentina              | POLÍMEROS PARA RUPTURA DE EMULSIÓN INVERSA                                                     | P160100578         | 3/4/2016   |               |            |
| Canada                 | REVERSE EMULSION BREAKER POLYMERS                                                              | 2978434            | 3/1/2016   |               |            |
| United States          | REVERSE EMULSION BREAKER POLYMERS                                                              | 15058113           | 3/1/2016   | 9914882       | 3/13/2018  |
| Argentina              | POLÍMEROS PARA RUPTURA DE EMULSIÓN INVERSA                                                     | P160100579         | 3/4/2016   |               |            |
| Canada                 | REVERSE EMULSION BREAKER POLYMERS                                                              | 2978437            | 3/2/2016   |               |            |
| United States          | REVERSE EMULSION BREAKER POLYMERS                                                              | 15058786           | 3/2/2016   | 10072217      | 9/11/2018  |
| Argentina              | EXTRACCIÓN DE LÍQUIDO ASISTIDA POR ESPUMA UTILIZANDO SULFONATOS DE ALCOHOL ÉTER                | P160100533         | 3/1/2016   |               |            |
| Australia              | FOAM ASSISTED LIQUID REMOVAL USING ALCOHOL ETHER SULFONATES                                    | 2016226361         | 3/1/2016   |               |            |
| Brazil                 | método para remover um fluido de um poço de gás ou petróleo, um furo de poço ou uma tubulação. | BR1120170186578    | 3/1/2016   |               |            |
| Canada                 | FOAM ASSISTED LIQUID REMOVAL USING ALCOHOL ETHER SULFONATES                                    | 2978559            | 3/1/2016   |               |            |
| European Patent Office | FOAM ASSISTED LIQUID REMOVAL USING ALCOHOL ETHER SULFONATES                                    | 167593524          | 3/1/2016   |               |            |
| Russia                 | FOAM ASSISTED LIQUID REMOVAL USING ALCOHOL ETHER SULFONATES                                    | 2017130862         | 3/1/2016   |               |            |
| United States          | FOAM ASSISTED LIQUID REMOVAL USING ALCOHOL ETHER SULFONATES                                    | 15057772           | 3/1/2016   | 9862882       | 1/9/2018   |

| Country Name                           | TITLE                                                                                                         | APPLICATION NUMBER       | DATE FILED | PATENT NUMBER | GRANT DATE |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------|--------------------------|------------|---------------|------------|
| United States                          | FLUORINE-CONTAINING AGENTS FOR ENHANCING HYDRATE INHIBITORS                                                   | 15087237                 | 3/31/2016  | 10113128      | 10/30/2018 |
| European Patent Office                 | CORROSION INHIBITORS AND KINETIC HYDRATE INHIBITORS                                                           | 167496645                | 2/8/2016   |               |            |
| GCC (Gulf Cooperation Council)         | CORROSION INHIBITORS AND KINETIC HYDRATE INHIBITORS                                                           | GC201630849              | 2/9/2016   |               |            |
| Tunisia                                | CORROSION INHIBITORS AND KINETIC HYDRATE INHIBITORS                                                           | TN20170314               | 2/8/2016   |               |            |
| United States                          | CORROSION INHIBITORS AND KINETIC HYDRATE INHIBITORS                                                           | 15018281<br>BR1120170269 | 2/8/2016   |               |            |
| Brazil                                 | REVERSE EMULSION BREAKER COPOLYMERS                                                                           | 988                      | 6/16/2016  |               |            |
| Canada                                 | REVERSE EMULSION BREAKER COPOLYMERS                                                                           | 2989627                  | 6/16/2016  |               |            |
| Colombia                               | Copolímeros de rompedores de emulsión inversa                                                                 | 20170012895              | 12/15/2017 |               |            |
| Ecuador                                | REVERSE EMULSION BREAKER COPOLYMERS                                                                           | IEPI201783245            | 6/16/2016  |               |            |
| Mexico                                 | REVERSE EMULSION BREAKER COPOLYMERS                                                                           | MXa20170166<br>92        | 6/16/2016  |               |            |
|                                        | REVERSE EMULSION BREAKER COPOLYMERS                                                                           | 15184240                 | 6/16/2016  | 10190055      | 1/29/2019  |
| United States                          | PREPARATION OF NEW STABLE HYDROGEN SULFIDE SCAVENGERS USEFUL IN BOTH WATER AS WELL AS OIL MEDIUM APPLICATIONS | 15717338                 | 9/27/2017  |               |            |
| World Intellectual Patent Organization | PREPARATION OF NEW STABLE HYDROGEN SULFIDE SCAVENGERS USEFUL IN BOTH WATER AS WELL AS OIL MEDIUM APPLICATIONS | PCTUS2017053<br>680      | 9/27/2017  |               |            |
| United States                          | METAL-CATALYZED OXIDATIVE COUPLING OF THIOLS                                                                  | 15228364                 | 8/4/2016   | 9834509       | 12/5/2017  |

| Country Name                                    | TITLE                                                                                                          | APPLICATION<br>NUMBER | DATE FILED | PATENT<br>NUMBER | GRANT<br>DATE |
|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-----------------------|------------|------------------|---------------|
| World<br>Intellectual<br>Patent<br>Organization | METAL-CATALYZED OXIDATIVE COUPLING OF THIOLS                                                                   | PCTUS2016045<br>464   | 8/4/2016   |                  |               |
| Argentina                                       | METHODS OF MAKING ACRYLAMIDE-ACRYLIC ACID<br>COPOLYMERS                                                        | P160101887            | 6/23/2016  |                  |               |
| Argentina                                       | COPOLÍMEROS ACRILAMIDA-ÁCIDO ACRÍLICO<br>SUMAMENTE ALEATORIOS                                                  | P160101942            | 6/28/2016  |                  |               |
| Australia                                       | METHODS OF MAKING ACRYLAMIDE-ACRYLIC ACID<br>COPOLYMERS                                                        | 2016285545            | 6/23/2016  |                  |               |
| Australia                                       | HIGHLY RANDOM ACRYLAMIDE-ACRYLIC ACID<br>COPOLYMERS                                                            | 2016285546            | 6/23/2016  |                  |               |
| Brazil                                          | METHODS OF MAKING ACRYLAMIDE-ACRYLIC ACID<br>COPOLYMERS                                                        | BR1120170271<br>516   | 6/23/2016  |                  |               |
| Brazil                                          | composição, método para formação de uma composição<br>de polímero reticulado diluída, e, uso de uma composição | 112017028261<br>5     | 6/23/2016  |                  |               |
| Canada                                          | METHODS OF MAKING ACRYLAMIDE-ACRYLIC ACID<br>COPOLYMERS                                                        | 2989873               | 6/23/2016  |                  |               |
| Canada                                          | HIGHLY RANDOM ACRYLAMIDE-ACRYLIC ACID<br>COPOLYMERS                                                            | 2989875               | 6/23/2016  |                  |               |
| China                                           | METHODS OF MAKING ACRYLAMIDE-ACRYLIC ACID<br>COPOLYMERS                                                        | 201680035623<br>X     | 6/23/2016  |                  |               |
| China                                           | HIGHLY RANDOM ACRYLAMIDE-ACRYLIC ACID<br>COPOLYMERS                                                            | 201680036453<br>7     | 6/23/2016  |                  |               |

| Country Name           | TITLE                                                                                                                                  | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
| European Patent Office | METHODS OF MAKING ACRYLAMIDE-ACRYLIC ACID COPOLYMERS                                                                                   | EP168184927        | 6/23/2016  |               |            |
| European Patent Office | HIGHLY RANDOM ACRYLAMIDE-ACRYLIC ACID COPOLYMERS                                                                                       | 20160818493        | 6/23/2016  |               |            |
| Mexico                 | METHODS OF MAKING ACRYLAMIDE-ACRYLIC ACID COPOLYMERS                                                                                   | MXa20170168 69     | 6/23/2016  |               |            |
| Mexico                 | HIGHLY RANDOM ACRYLAMIDE-ACRYLIC ACID COPOLYMERS                                                                                       | MXa20170168 64     | 6/23/2016  |               |            |
|                        | METHODS OF MAKING ACRYLAMIDE-ACRYLIC ACID COPOLYMERS                                                                                   | 15190364           | 6/23/2016  | 10179855      | 1/15/2019  |
| United States          | HIGHLY RANDOM ACRYLAMIDE-ACRYLIC ACID COPOLYMERS                                                                                       | 15190381           | 6/23/2016  |               |            |
| Australia              | INVERTIBLE WATER-IN-OIL LATICES AND METHODS OF USE                                                                                     | 2016261924         | 5/12/2016  |               |            |
| Brazil                 | látex invertível, métodos para formar um látex invertível e para recuperar compostos de hidrocarboneto, e, uso de um látex invertível. | BR1120170241 200   | 5/12/2016  |               |            |
| Canada                 | INVERTIBLE WATER-IN-OIL LATICES AND METHODS OF USE                                                                                     | 2985503            | 5/12/2016  |               |            |
| China                  | INVERTIBLE WATER-IN-OIL LATICES AND METHODS OF USE                                                                                     | 201680027663 X     | 5/12/2016  |               |            |
| European Patent Office | INVERTIBLE WATER-IN-OIL LATICES AND METHODS OF USE                                                                                     | EP167935089        | 5/12/2016  |               |            |
| Mexico                 | INVERTIBLE WATER-IN-OIL LATICES AND METHODS OF USE                                                                                     | MXa20170145 23     | 5/12/2016  |               |            |

| Country Name           | TITLE                                                                                                                                                                                                  | APPLICATION<br>NUMBER | DATE FILED | PATENT<br>NUMBER | GRANT<br>DATE |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------|------------------|---------------|
| United States          | INVERTIBLE WATER-IN-OIL LATICES AND METHODS OF USE                                                                                                                                                     | 15152833              | 5/12/2016  | 9822297          | 11/21/2017    |
| Argentina              | APPARATUS AND METHOD FOR INVERTING POLYMER LATICES                                                                                                                                                     | P160101377            | 5/12/2016  |                  |               |
| Australia              | APPARATUS AND METHOD FOR INVERTING POLYMER LATICES                                                                                                                                                     | 2016262083            | 5/12/2016  |                  |               |
| Brazil                 | métodos para inversão de um látex de água em óleo e para recuperação de um fluido de hidrocarboneto a partir de um reservatório subterrâneo, sistema para inversão, e, uso de um sistema para inversão | BR1120170242<br>192   | 5/12/2016  |                  |               |
| Canada                 | APPARATUS AND METHOD FOR INVERTING POLYMER LATICES                                                                                                                                                     | 2985513               | 5/12/2016  |                  |               |
| China                  | APPARATUS AND METHOD FOR INVERTING POLYMER LATICES                                                                                                                                                     | 201680027561<br>8     | 5/12/2016  |                  |               |
| European Patent Office | APPARATUS AND METHOD FOR INVERTING POLYMER LATICES                                                                                                                                                     | 167935360             | 5/12/2016  |                  |               |
| Mexico                 | APPARATUS AND METHOD FOR INVERTING POLYMER LATICES                                                                                                                                                     | MXa20170145<br>26     | 5/12/2016  |                  |               |
| United States          | APPARATUS AND METHOD FOR INVERTING POLYMER LATICES                                                                                                                                                     | 15152852              | 5/12/2016  | 10047274         | 8/14/2018     |
| Australia              | CARBONYL FUNCTIONAL INVERSION AGENTS FOR WATER-IN-OIL LATICES AND METHODS OF USE                                                                                                                       | 2016304757            | 8/4/2016   |                  |               |
| Australia              | NONIONIC INVERSION AGENTS FOR WATER-IN-OIL LATICES AND METHODS OF USE                                                                                                                                  | 2016304759            | 8/4/2016   |                  |               |

| Country Name           | TITLE                                                                                                                            | APPLICATION NUMBER  | DATE FILED | PATENT NUMBER | GRANT DATE |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------|---------------------|------------|---------------|------------|
| Australia              | PHOSPHORUS FUNCTIONAL INVERSION AGENTS FOR WATER-IN-OIL LATICES AND METHODS OF USE                                               | 2016307432          | 8/4/2016   |               |            |
| Brazil                 | látex de água em óleo, métodos para formar um látex invertível e para recuperar compostos de hidrocarboneto, e, uso de um látex  | BR1120180024<br>767 | 8/4/2016   |               |            |
| Brazil                 | látex de água em óleo, métodos para formar um látex invertível e para recuperar compostos de hidrocarboneto, e, uso de um látex. | BR1120180024<br>694 | 8/4/2016   |               |            |
| Brazil                 | látex de água em óleo, métodos para formar um látex reversível e para recuperar compostos de hidrocarboneto, e, uso de um látex  | BR1120180024<br>678 | 8/4/2016   |               |            |
| Canada                 | CARBONYL FUNCTIONAL INVERSION AGENTS FOR WATER-IN-OIL LATICES AND METHODS OF USE                                                 | 2994677             | 8/4/2016   |               |            |
| Canada                 | NONIONIC INVERSION AGENTS FOR WATER-IN-OIL LATICES AND METHODS OF USE                                                            | 2994681             | 8/4/2016   |               |            |
| Canada                 | PHOSPHORUS FUNCTIONAL INVERSION AGENTS FOR WATER-IN-OIL LATICES AND METHODS OF USE                                               | 2994684             | 8/4/2016   |               |            |
| China                  | CARBONYL FUNCTIONAL INVERSION AGENTS FOR WATER-IN-OIL LATICES AND METHODS OF USE                                                 | 201680046401<br>8   | 8/4/2016   |               |            |
| China                  | NONIONIC INVERSION AGENTS FOR WATER-IN-OIL LATICES AND METHODS OF USE                                                            | 201680046353<br>2   | 8/4/2016   |               |            |
| China                  | PHOSPHORUS FUNCTIONAL INVERSION AGENTS FOR WATER-IN-OIL LATICES AND METHODS OF USE                                               | 201680046395<br>6   | 8/4/2016   |               |            |
| European Patent Office | CARBONYL FUNCTIONAL INVERSION AGENTS FOR WATER-IN-OIL LATICES AND METHODS OF USE                                                 | 168356608           | 8/4/2016   |               |            |

| Country Name                                    | TITLE                                                                                 | APPLICATION<br>NUMBER | DATE FILED | PATENT<br>NUMBER | GRANT<br>DATE |
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| European<br>Patent Office                       | NONIONIC INVERSION AGENTS FOR WATER-IN-OIL<br>LATICES AND METHODS OF USE              | 168356616             | 8/4/2016   |                  |               |
| European<br>Patent Office                       | PHOSPHORUS FUNCTIONAL INVERSION AGENTS FOR<br>WATER-IN-OIL LATICES AND METHODS OF USE | 168356665             | 8/4/2016   |                  |               |
| Mexico                                          | CARBONYL FUNCTIONAL INVERSION AGENTS FOR WATER-<br>IN-OIL LATICES AND METHODS OF USE  | MXa20180016<br>19     | 8/4/2016   |                  |               |
| Mexico                                          | NONIONIC INVERSION AGENTS FOR WATER-IN-OIL<br>LATICES AND METHODS OF USE              | MXa20180016<br>21     | 8/4/2016   |                  |               |
| Mexico                                          | PHOSPHORUS FUNCTIONAL INVERSION AGENTS FOR<br>WATER-IN-OIL LATICES AND METHODS OF USE | MXa20180016<br>22     | 8/4/2016   |                  |               |
| United States                                   | CARBONYL FUNCTIONAL INVERSION AGENTS FOR WATER-<br>IN-OIL LATICES AND METHODS OF USE  | 15228446              | 8/4/2016   | 9957437          | 5/1/2018      |
|                                                 | NONIONIC INVERSION AGENTS FOR WATER-IN-OIL<br>LATICES AND METHODS OF USE              | 15228473              | 8/4/2016   | 10577532         | 6/11/2019     |
| United States                                   | PHOSPHORUS FUNCTIONAL INVERSION AGENTS FOR<br>WATER-IN-OIL LATICES AND METHODS OF USE | 15228490              | 8/4/2016   |                  |               |
| World<br>Intellectual<br>Patent<br>Organization | CARBONYL FUNCTIONAL INVERSION AGENTS FOR WATER-<br>IN-OIL LATICES AND METHODS OF USE  | PCTUS2016045<br>541   | 8/4/2016   |                  |               |
| World<br>Intellectual<br>Patent<br>Organization | NONIONIC INVERSION AGENTS FOR WATER-IN-OIL<br>LATICES AND METHODS OF USE              | PCTUS2016045<br>546   | 8/4/2016   |                  |               |
| World<br>Intellectual                           | PHOSPHORUS FUNCTIONAL INVERSION AGENTS FOR<br>WATER-IN-OIL LATICES AND METHODS OF USE | PCTUS2016045<br>590   | 8/4/2016   |                  |               |

| Country Name              | TITLE                                                                                                 | APPLICATION<br>NUMBER | DATE FILED | PATENT<br>NUMBER | GRANT<br>DATE |
|---------------------------|-------------------------------------------------------------------------------------------------------|-----------------------|------------|------------------|---------------|
| Patent<br>Organization    |                                                                                                       |                       |            |                  |               |
| Australia                 | COMPOSITIONS FOR ENHANCED OIL RECOVERY                                                                | 2016222831            | 2/24/2016  |                  |               |
| Brazil                    | composição, método para aumentar recuperação de óleo cru, e, usos de uma composição e de uma emulsão. | BR1120170174<br>049   | 2/24/2016  |                  |               |
| Canada                    | COMPOSITIONS FOR ENHANCED OIL RECOVERY                                                                | 2976263               | 2/24/2016  |                  |               |
| European<br>Patent Office | COMPOSITIONS FOR ENHANCED OIL RECOVERY                                                                | 167562396             | 2/24/2016  |                  |               |
| Russia                    | COMPOSITIONS FOR ENHANCED OIL RECOVERY                                                                | 2017129837            | 2/24/2016  |                  |               |
| United States             | COMPOSITIONS FOR ENHANCED OIL RECOVERY                                                                | 16004889              | 6/11/2018  |                  |               |
| Argentina                 | FLUIDOS DE PERFORACIÓN Y MÉTODOS DE USO                                                               | P160101741            | 6/10/2016  |                  |               |
| Australia                 | DRILLING FLUIDS AND METHODS OF USE                                                                    | 2016276716            | 6/9/2016   |                  |               |
| Brazil                    | DRILLING FLUIDS AND METHODS OF USE                                                                    | BR1120170263<br>696   | 6/9/2016   |                  |               |
| Canada                    | DRILLING FLUIDS AND METHODS OF USE                                                                    | 2987773               | 6/9/2016   |                  |               |
| Colombia                  | DRILLING FLUIDS AND METHODS OF USE                                                                    | NC2017001226<br>5     | 6/9/2016   |                  |               |
| European<br>Patent Office | DRILLING FLUIDS AND METHODS OF USE                                                                    | EP168082618           | 6/9/2016   |                  |               |
| Mexico                    | DRILLING FLUIDS AND METHODS OF USE                                                                    | MXa20170160<br>22     | 6/9/2016   |                  |               |
| Russia                    | DRILLING FLUIDS AND METHODS OF USE                                                                    | 2018100267            | 6/9/2016   |                  |               |
| United States             | DRILLING FLUIDS AND METHODS OF USE                                                                    | 15177808              | 6/9/2016   |                  |               |
| Argentina                 | CROSSLINKER COMPOSITION INCLUDING SYNTHETIC<br>LAYERED SILICATE                                       | P160101355            | 5/11/2016  |                  |               |

| Country Name           | TITLE                                                                                                                            | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
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| Australia              | CROSSLINKER COMPOSITION INCLUDING SYNTHETIC LAYERED SILICATE                                                                     | 2016261823         | 5/11/2016  |               |            |
| Brazil                 | composição, métodos para formar uma composição injetável e para recuperar compostos de hidrocarboneto, e, uso de uma composição. | BR1120170242290    | 5/11/2016  |               |            |
| Canada                 | CROSSLINKER COMPOSITION INCLUDING SYNTHETIC LAYERED SILICATE                                                                     | 2985488            | 5/11/2016  |               |            |
| Colombia               | Composición reticulante que incluye silicato sintético en capas                                                                  | 20170011493        | 11/9/2017  |               |            |
| European Patent Office | CROSSLINKER COMPOSITION INCLUDING SYNTHETIC LAYERED SILICATE                                                                     | 167934363          | 5/11/2016  |               |            |
| Mexico                 | CROSSLINKER COMPOSITION INCLUDING SYNTHETIC LAYERED SILICATE                                                                     | MXa2017014464      | 5/11/2016  |               |            |
| Russia                 | CROSSLINKER COMPOSITION INCLUDING SYNTHETIC LAYERED SILICATE                                                                     | 2017143126         | 5/11/2016  |               |            |
|                        | CROSSLINKER COMPOSITION INCLUDING SYNTHETIC LAYERED SILICATE                                                                     | 15151950           | 5/11/2016  | 10240081      | 3/26/2019  |
| Argentina              | CHEMICAL ENHANCED OIL RECOVERY                                                                                                   | P160101943         | 6/28/2016  |               |            |
| Brazil                 | processo e aparelho para tratamento de água, e, uso.                                                                             | 1120170276100      | 6/24/2016  |               |            |
| Canada                 | PROCESS FOR THE TREATMENT OF PRODUCED WATER FROM CHEMICAL ENHANCED OIL RECOVERY                                                  | 2990554            | 6/24/2016  |               |            |
| European Patent Office | PROCESS FOR THE TREATMENT OF PRODUCED WATER FROM CHEMICAL ENHANCED OIL RECOVERY                                                  | 167344647          | 6/24/2016  |               |            |

| Country Name                           | TITLE                                                                           | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
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| United States                          | PROCESS FOR THE TREATMENT OF PRODUCED WATER FROM CHEMICAL ENHANCED OIL RECOVERY | 15741050           | 6/24/2016  |               |            |
| European Patent Office                 | NON-CORROSIVE COMBINATION FOAMER                                                | 161736038          | 6/8/2016   |               |            |
| Netherlands                            | Non-Corrosive Foaming Composition.                                              | 20152015267        | 8/5/2015   | 2015267       | 4/10/2018  |
| Argentina                              | SOLID CHEMICALS INJECTION SYSTEM FOR OIL FIELD APPLICATIONS                     | P160103540         | 11/18/2016 |               |            |
| Australia                              | SOLID CHEMICALS INJECTION SYSTEM FOR OIL FIELD APPLICATIONS                     | 2016358092         | 11/18/2016 |               |            |
| Brazil                                 | SOLID CHEMICALS INJECTION SYSTEM FOR OIL FIELD APPLICATIONS                     | BR1120180099880    | 11/18/2016 |               |            |
| Canada                                 | SOLID CHEMICALS INJECTION SYSTEM FOR OIL FIELD APPLICATIONS                     | 3005350            | 11/18/2016 |               |            |
| China                                  | SOLID CHEMICALS INJECTION SYSTEM FOR OIL FIELD APPLICATIONS                     | 2016800667578      | 11/18/2016 |               |            |
| European Patent Office                 | SOLID CHEMICALS INJECTION SYSTEM FOR OIL FIELD APPLICATIONS                     | 168672012          | 11/18/2016 |               |            |
| Mexico                                 | SOLID CHEMICALS INJECTION SYSTEM FOR OIL FIELD APPLICATIONS                     | MXa2018006248      | 11/18/2016 |               |            |
|                                        | SOLID CHEMICALS INJECTION SYSTEM FOR OIL FIELD APPLICATIONS                     | 14946244           | 11/19/2015 | 10280714      | 5/7/2019   |
| World Intellectual Patent Organization | SOLID CHEMICALS INJECTION SYSTEM FOR OIL FIELD APPLICATIONS                     | PCTUS2016062711    | 11/18/2016 |               |            |

| Country Name                           | TITLE                                                                             | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|----------------------------------------|-----------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
| Argentina                              | CLEANING AND REMOVAL OF WAX DEPOSITS IN OIL AND GAS WELLS USING CATIONIC POLYMERS | P160102272         | 7/26/2016  |               |            |
| Canada                                 | CLEANING AND REMOVAL OF WAX DEPOSITS IN OIL AND GAS WELLS USING CATIONIC POLYMERS | 2993189            | 7/26/2016  |               |            |
| Mexico                                 | CLEANING AND REMOVAL OF WAX DEPOSITS IN OIL AND GAS WELLS USING CATIONIC POLYMERS | MXa2018001107      | 7/26/2016  |               |            |
| United States                          | CLEANING AND REMOVAL OF WAX DEPOSITS IN OIL AND GAS WELLS USING CATIONIC POLYMERS | 15219919           | 7/26/2016  |               |            |
| Brazil                                 | METHODS OF AND COMPOSITIONS FOR TREATING A STREAM COMPRISING CRUDE OIL AND WATER  | 1120180109282      | 12/2/2016  |               |            |
| Canada                                 | METHODS OF AND COMPOSITIONS FOR TREATING A STREAM COMPRISING CRUDE OIL AND WATER  | 3007130            | 12/2/2016  |               |            |
| Colombia                               | METHODS OF AND COMPOSITIONS FOR TREATING A STREAM COMPRISING CRUDE OIL AND WATER  | NC20180006865      | 12/2/2016  |               |            |
| Mexico                                 | METHODS OF AND COMPOSITIONS FOR TREATING A STREAM COMPRISING CRUDE OIL AND WATER  | MXa2018006775      | 12/2/2016  |               |            |
| United States                          | Methods of Treating a Stream Comprising Crude Oil and Water                       | 15367409           | 12/2/2016  |               |            |
| World Intellectual Patent Organization | METHODS OF AND COMPOSITIONS FOR TREATING A STREAM COMPRISING CRUDE OIL AND WATER  | PCTUS2016064561    | 12/2/2016  |               |            |
| Argentina                              | METHOD FOR SIMULATING HIGH PRESSURE PARAFFINIC FROTH TREATMENTS                   | 20160102953        | 9/28/2016  |               |            |

| Country Name                                    | TITLE                                                                                    | APPLICATION<br>NUMBER | DATE FILED | PATENT<br>NUMBER | GRANT<br>DATE |
|-------------------------------------------------|------------------------------------------------------------------------------------------|-----------------------|------------|------------------|---------------|
| Canada                                          | METHOD FOR SIMULATING HIGH PRESSURE PARAFFINIC FROTH TREATMENTS                          | 2999048               | 9/30/2016  |                  |               |
| United States                                   | METHOD FOR SIMULATING HIGH PRESSURE PARAFFINIC FROTH TREATMENTS                          | 15282285              | 9/30/2016  |                  |               |
| World<br>Intellectual<br>Patent<br>Organization | METHOD FOR SIMULATING HIGH PRESSURE PARAFFINIC FROTH TREATMENTS                          | PCTUS2016054<br>932   | 9/30/2016  |                  |               |
| United Arab<br>Emirates                         | MULTIFUNCTIONAL PRODUCT WITH HYDROGEN SULFIDE SCAVENGING AND HYDRATE INHIBITION CAPACITY | P60009332018          | 1/6/2017   |                  |               |
| Australia                                       | MULTIFUNCTIONAL PRODUCT WITH HYDROGEN SULFIDE SCAVENGING AND HYDRATE INHIBITION CAPACITY | AU2017205504          | 1/6/2017   |                  |               |
| Brazil                                          | MULTIFUNCTIONAL PRODUCT WITH HYDROGEN SULFIDE SCAVENGING AND HYDRATE INHIBITION CAPACITY | 112018013927<br>0     | 1/6/2017   |                  |               |
| Canada                                          | MULTIFUNCTIONAL PRODUCT WITH HYDROGEN SULFIDE SCAVENGING AND HYDRATE INHIBITION CAPACITY |                       | 1/6/2017   |                  |               |
| China                                           | MULTIFUNCTIONAL PRODUCT WITH HYDROGEN SULFIDE SCAVENGING AND HYDRATE INHIBITION CAPACITY | 201780005985<br>9     | 1/6/2017   |                  |               |
| Colombia                                        | MULTIFUNCTIONAL PRODUCT WITH HYDROGEN SULFIDE SCAVENGING AND HYDRATE INHIBITION CAPACITY | NC2018000722<br>3     | 1/6/2017   |                  |               |
| European<br>Patent Office                       | MULTIFUNCTIONAL PRODUCT WITH HYDROGEN SULFIDE SCAVENGING AND HYDRATE INHIBITION CAPACITY | 177364429             | 1/6/2017   |                  |               |
| Oman                                            | MULTIFUNCTIONAL PRODUCT WITH HYDROGEN SULFIDE SCAVENGING AND HYDRATE INHIBITION CAPACITY | OMP20180020<br>4      | 1/6/2017   |                  |               |

| Country Name                                    | TITLE                                                                                       | APPLICATION<br>NUMBER | DATE FILED | PATENT<br>NUMBER | GRANT<br>DATE |
|-------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------|------------|------------------|---------------|
| Qatar                                           | MULTIFUNCTIONAL PRODUCT WITH HYDROGEN SULFIDE<br>SCAVENGING AND HYDRATE INHIBITION CAPACITY | QA2018070029<br>9     | 1/6/2017   |                  |               |
|                                                 | MULTIFUNCTIONAL PRODUCT WITH HYDROGEN SULFIDE<br>SCAVENGING AND HYDRATE INHIBITION CAPACITY | 2018128771            | 1/6/2017   | 2689754          | 5/28/2019     |
| Saudi Arabia                                    | MULTIFUNCTIONAL PRODUCT WITH HYDROGEN SULFIDE<br>SCAVENGING AND HYDRATE INHIBITION CAPACITY | 518391984             | 1/6/2017   |                  |               |
| United States                                   | MULTIFUNCTIONAL PRODUCT WITH HYDROGEN SULFIDE<br>SCAVENGING AND HYDRATE INHIBITION CAPACITY | 15400652              | 1/6/2017   |                  |               |
| World<br>Intellectual<br>Patent<br>Organization | MULTIFUNCTIONAL PRODUCT WITH HYDROGEN SULFIDE<br>SCAVENGING AND HYDRATE INHIBITION CAPACITY | PCTUS2017012<br>554   | 1/6/2017   |                  |               |
| United Arab<br>Emirates                         | CONTROLLED RELEASE SOLID SCALE INHIBITORS                                                   | P600074918            | 12/2/2016  |                  |               |
| Argentina                                       | CONTROLLED RELEASE SOLID SCALE INHIBITORS                                                   | P160103702            | 12/2/2016  |                  |               |
| Australia                                       | CONTROLLED RELEASE SOLID SCALE INHIBITORS                                                   | 2016362407            | 12/2/2016  |                  |               |
| Brazil                                          | CONTROLLED RELEASE SOLID SCALE INHIBITORS                                                   | BR1120180111<br>180   | 12/2/2016  |                  |               |
| Canada                                          | CONTROLLED RELEASE SOLID SCALE INHIBITORS                                                   | 3007217               | 12/2/2016  |                  |               |
|                                                 |                                                                                             | 201680070770<br>0     |            |                  |               |
| China                                           | CONTROLLED RELEASE SOLID SCALE INHIBITORS                                                   |                       | 12/2/2016  |                  |               |
| Colombia                                        | Inhibidores de incrustaciones sólidas de liberación<br>controlada                           | 20180005652           | 5/29/2018  |                  |               |
| European<br>Patent Office                       | CONTROLLED RELEASE SOLID SCALE INHIBITORS                                                   | 168715571             | 12/2/2016  |                  |               |
| Indonesia                                       | CONTROLLED RELEASE SOLID SCALE INHIBITORS                                                   | P00201804034          | 12/2/2016  |                  |               |

| Country Name                                        | TITLE                                                                                               | APPLICATION NUMBER  | DATE FILED | PATENT NUMBER | GRANT DATE |
|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------|---------------------|------------|---------------|------------|
| Kazakhstan                                          | CONTROLLED RELEASE SOLID SCALE INHIBITORS                                                           | 201804501           | 12/2/2016  |               |            |
| Mexico                                              | CONTROLLED RELEASE SOLID SCALE INHIBITORS                                                           | MXa20180068<br>29   | 12/2/2016  |               |            |
| African<br>Intellectual<br>Property<br>Organization | CONTROLLED RELEASE SOLID SCALE INHIBITORS                                                           | 1201800219          | 12/2/2016  |               |            |
| Qatar                                               | CONTROLLED RELEASE SOLID SCALE INHIBITORS                                                           | 20180600226         | 12/2/2016  |               |            |
| Russia                                              | CONTROLLED RELEASE SOLID SCALE INHIBITORS                                                           | 2018122209          | 12/2/2016  |               |            |
| Saudi Arabia                                        | CONTROLLED RELEASE SOLID SCALE INHIBITORS                                                           | 518391718           | 12/2/2016  |               |            |
| United States                                       | CONTROLLED RELEASE SOLID SCALE INHIBITORS                                                           | 14959827            | 12/4/2015  | 10081758      | 9/25/2018  |
| World<br>Intellectual<br>Patent<br>Organization     | CONTROLLED RELEASE SOLID SCALE INHIBITORS                                                           | PCTUS2016064<br>559 | 12/2/2016  |               |            |
| Argentina                                           | COMPOSICIONES Y MÉTODOS PARA EL<br>ENTRECRUZAMIENTO RETARDADO EN FLUIDOS DE<br>FRACTURA HIDRÁULICOS | P160102375          | 8/3/2016   |               |            |
| Australia                                           | COMPOSITIONS AND METHODS FOR DELAYED<br>CROSSLINKING IN HYDRAULIC FRACTURING FLUIDS                 | 2016301235          | 8/2/2016   |               |            |
| Canada                                              | COMPOSITIONS AND METHODS FOR DELAYED<br>CROSSLINKING IN HYDRAULIC FRACTURING FLUIDS                 | 2994540             | 8/2/2016   |               |            |
| United States                                       | COMPOSITIONS AND METHODS FOR DELAYED<br>CROSSLINKING IN HYDRAULIC FRACTURING FLUIDS                 | 15225879            | 8/2/2016   |               |            |
| World<br>Intellectual                               | COMPOSITIONS AND METHODS FOR DELAYED<br>CROSSLINKING IN HYDRAULIC FRACTURING FLUIDS                 | PCTUS2016045<br>169 | 8/2/2016   |               |            |

| Country Name                           | TITLE                                                                                                                                      | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
| Patent Organization                    |                                                                                                                                            |                    |            |               |            |
| Canada                                 | NANOCRYSTALLINE CELLULOSE AND POLYMER-GRAFTED NANOCRYSTALLINE CELLULOSE AS RHEOLOGY MODIFYING AGENTS FOR MAGNESIUM OXIDE AND LIME SLURRIES | 3001717            | 10/14/2016 |               |            |
| United States                          | NANOCRYSTALLINE CELLULOSE AND POLYMER-GRAFTED NANOCRYSTALLINE CELLULOSE AS RHEOLOGY MODIFYING AGENTS FOR MAGNESIUM OXIDE AND LIME SLURRIES | 15293688           | 10/14/2016 |               |            |
| World Intellectual Patent Organization | NANOCRYSTALLINE CELLULOSE AND POLYMER-GRAFTED NANOCRYSTALLINE CELLULOSE AS RHEOLOGY MODIFYING AGENTS FOR MAGNESIUM OXIDE AND LIME SLURRIES | PCTUS2016057001    | 10/14/2016 |               |            |
| Great Britain                          | IMPROVED NAPHTHENATE INHIBITOR FORMULATIONS                                                                                                | GB17097676         | 6/19/2017  |               |            |
| World Intellectual Patent Organization | IMPROVED NAPHTHENATE INHIBITOR FORMULATIONS                                                                                                | PCTIB2018053743    | 5/25/2018  |               |            |
| Argentina                              | HEAVY OIL RHEOLOGY MODIFIERS FOR FLOW IMPROVEMENT DURING PRODUCTION AND TRANSPORTATION OPERATIONS                                          | P170100038         | 1/6/2017   |               |            |
| Brazil                                 | HEAVY OIL RHEOLOGY MODIFIERS FOR FLOW IMPROVEMENT DURING PRODUCTION AND TRANSPORTATION OPERATIONS                                          | BR1120180137308    | 1/6/2017   |               |            |

| Country Name                                    | TITLE                                                                                                                       | APPLICATION<br>NUMBER | DATE FILED | PATENT<br>NUMBER | GRANT<br>DATE |
|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|-----------------------|------------|------------------|---------------|
| Colombia                                        | Modificadores de la reología de petróleo pesado para la mejora del flujo durante las operaciones de producción y transporte | 20180007005           | 7/4/2018   |                  |               |
| United States                                   | HEAVY OIL RHEOLOGY MODIFIERS FOR FLOW IMPROVEMENT DURING PRODUCTION AND TRANSPORTATION OPERATIONS                           | 15400373              | 1/6/2017   |                  |               |
| World<br>Intellectual<br>Patent<br>Organization | HEAVY OIL RHEOLOGY MODIFIERS FOR FLOW IMPROVEMENT DURING PRODUCTION AND TRANSPORTATION OPERATIONS                           | PCTUS2017012<br>510   | 1/6/2017   |                  |               |
| United States                                   | CORN SYRUP, AN INVERSION AID FOR WATER-IN-OIL POLYMER EMULSIONS                                                             | 15435414              | 2/17/2017  |                  |               |
| World<br>Intellectual<br>Patent<br>Organization | CORN SYRUP, AN INVERSION AID FOR WATER-IN-OIL POLYMER EMULSIONS                                                             | PCTUS2017018<br>297   | 2/17/2017  |                  |               |
| United Arab<br>Emirates                         | CORROSION INHIBITTING COMPOSITIONS TO MITIGATE CORROSION IN ENVIRONMENTS CONTAINING ELEMENTAL SULFUR AND/OR POLYSULFIDES    | P60011562018          | 2/24/2017  |                  |               |
| Australia                                       | CORROSION INHIBITTING COMPOSITIONS TO MITIGATE CORROSION IN ENVIRONMENTS CONTAINING ELEMENTAL SULFUR AND/OR POLYSULFIDES    | 2017222670            | 2/24/2017  |                  |               |
| Brazil                                          | CORROSION INHIBITTING COMPOSITIONS TO MITIGATE CORROSION IN ENVIRONMENTS CONTAINING ELEMENTAL SULFUR AND/OR POLYSULFIDES    | BR1120180674<br>044   | 2/24/2017  |                  |               |

| Country Name           | TITLE                                                                                                                         | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
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| Canada                 | CORROSION INHIBITTING COMPOSITIONS TO MITIGATE CORROSION IN ENVIRONMENTS CONTAINING ELEMENTAL SULFUR AND/OR POLYSULFIDES      | 3015637            | 2/24/2017  |               |            |
| China                  | CORROSION INHIBITTING COMPOSITIONS TO MITIGATE CORROSION IN ENVIRONMENTS CONTAINING ELEMENTAL SULFUR AND/OR POLYSULFIDES      | 2017800131404      | 2/24/2017  |               |            |
| Colombia               | Composiciones inhibidoras de corrosión para mitigar la corrosión en ambientes que contienen azufre elemental y/o polisulfuros | 20180008498        | 8/14/2018  |               |            |
| European Patent Office | CORROSION INHIBITTING COMPOSITIONS TO MITIGATE CORROSION IN ENVIRONMENTS CONTAINING ELEMENTAL SULFUR AND/OR POLYSULFIDES      | 177573474          | 2/24/2017  |               |            |
| Oman                   | CORROSION INHIBITTING COMPOSITIONS TO MITIGATE CORROSION IN ENVIRONMENTS CONTAINING ELEMENTAL SULFUR AND/OR POLYSULFIDES      | OMP201800256       | 2/24/2017  |               |            |
| Qatar                  | CORROSION INHIBITTING COMPOSITIONS TO MITIGATE CORROSION IN ENVIRONMENTS CONTAINING ELEMENTAL SULFUR AND/OR POLYSULFIDES      | QA20180800369      | 2/24/2017  |               |            |
| Russia                 | CORROSION INHIBITTING COMPOSITIONS TO MITIGATE CORROSION IN ENVIRONMENTS CONTAINING ELEMENTAL SULFUR AND/OR POLYSULFIDES      | 2018133002         | 2/24/2017  |               |            |
| Saudi Arabia           | CORROSION INHIBITTING COMPOSITIONS TO MITIGATE CORROSION IN ENVIRONMENTS CONTAINING ELEMENTAL SULFUR AND/OR POLYSULFIDES      | 518392243          | 2/24/2017  |               |            |

| Country Name                           | TITLE                                                                                                                   | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
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| United States                          | CORROSION INHIBITING COMPOSITIONS TO MITIGATE CORROSION IN ENVIRONMENTS CONTAINING ELEMENTAL SULFUR AND/OR POLYSULFIDES | 15442198           | 2/24/2017  |               |            |
| World Intellectual Patent Organization | CORROSION INHIBITING COMPOSITIONS TO MITIGATE CORROSION IN ENVIRONMENTS CONTAINING ELEMENTAL SULFUR AND/OR POLYSULFIDES | PCTUS2017019 447   | 2/24/2017  |               |            |
| Argentina                              | ALQUIL DIOLES PARA TRATAMIENTO DE PETRÓLEO CRUDO                                                                        | P170100412         | 2/17/2017  |               |            |
| Canada                                 | ALKYL DIOIS FOR CRUDE OIL TREATMENT                                                                                     | 3014358            | 2/17/2017  |               |            |
| Malaysia                               | ALKYL DIOIS FOR CRUDE OIL TREATMENT                                                                                     | P12018001397       | 2/17/2017  |               |            |
| Singapore                              | ALKYL DIOIS FOR CRUDE OIL TREATMENT                                                                                     | 11201806673Q       | 2/17/2017  |               |            |
| United States                          | ALKYL DIOIS FOR CRUDE OIL TREATMENT                                                                                     | 15435464           | 2/17/2017  |               |            |
| World Intellectual Patent Organization | ALKYL DIOIS FOR CRUDE OIL TREATMENT                                                                                     | PCTUS2017018 288   | 2/17/2017  |               |            |
| Argentina                              | FATTY ALCOHOLS AND ESTERS FOR CRUDE OIL TREATMENT                                                                       | P170102557         | 9/15/2017  |               |            |
|                                        | FATTY ALCOHOLS AND ESTERS FOR CRUDE OIL TREATMENT                                                                       | 3036559            | 9/15/2017  |               |            |
|                                        | FATTY ALCOHOLS AND ESTERS FOR CRUDE OIL TREATMENT                                                                       | 15705762           | 9/15/2017  | 10344230      | 7/9/2019   |
| World Intellectual                     | FATTY ALCOHOLS AND ESTERS FOR CRUDE OIL TREATMENT                                                                       | PCTUS2017051 756   | 9/15/2017  |               |            |

| Country Name                           | TITLE                                                                                                                         | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
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| Patent Organization                    |                                                                                                                               |                    |            |               |            |
| Argentina                              | FRICTION-REDUCING COMPOSITIONS FORMULATED WITH HIGHLY CONCENTRATED BRINE                                                      | P160103353         | 11/3/2016  |               |            |
| Australia                              | FRICTION-REDUCING COMPOSITIONS FORMULATED WITH HIGHLY CONCENTRATED BRINE                                                      | 2016348440         | 11/4/2016  |               |            |
| Brazil                                 | FRICTION-REDUCING COMPOSITIONS FORMULATED WITH HIGHLY CONCENTRATED BRINE                                                      | BR1120180085863    | 11/4/2016  |               |            |
| Canada                                 | FRICTION-REDUCING COMPOSITIONS FORMULATED WITH HIGHLY CONCENTRATED BRINE                                                      | 3003457            | 11/4/2016  |               |            |
| European Patent Office                 | FRICTION-REDUCING COMPOSITIONS FORMULATED WITH HIGHLY CONCENTRATED BRINE                                                      | 168630622          | 11/4/2016  |               |            |
| Mexico                                 | FRICTION-REDUCING COMPOSITIONS FORMULATED WITH HIGHLY CONCENTRATED BRINE                                                      | MXa2018005684      | 11/4/2016  |               |            |
| Russia                                 | FRICTION-REDUCING COMPOSITIONS FORMULATED WITH HIGHLY CONCENTRATED BRINE                                                      | 2018120325         | 11/4/2016  |               |            |
| United States                          | FRICTION-REDUCING COMPOSITIONS FORMULATED WITH HIGHLY CONCENTRATED BRINE                                                      | 15343413           | 11/4/2016  |               |            |
| World Intellectual Patent Organization | FRICTION-REDUCING COMPOSITIONS FORMULATED WITH HIGHLY CONCENTRATED BRINE                                                      | PCTUS2016060578    | 11/4/2016  |               |            |
| United Arab Emirates                   | A LOW COST CORROSION INHIBITOR/MITIGATION APPROACH FOR CARBON STEEL IN OIL AND GAS PRODUCTION AND TRANSPORTATION ENVIRONMENTS | P600146718         | 4/25/2017  |               |            |

| Country Name                           | TITLE                                                                                                                         | APPLICATION NUMBER  | DATE FILED | PATENT NUMBER | GRANT DATE |
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| Australia                              | A LOW COST CORROSION INHIBITOR/MITIGATION APPROACH FOR CARBON STEEL IN OIL AND GAS PRODUCTION AND TRANSPORTATION ENVIRONMENTS | 2017257627          | 4/25/2017  |               |            |
| Canada                                 | A LOW COST CORROSION INHIBITOR/MITIGATION APPROACH FOR CARBON STEEL IN OIL AND GAS PRODUCTION AND TRANSPORTATION ENVIRONMENTS | 3021971             | 4/25/2017  |               |            |
| European Patent Office                 | A LOW COST CORROSION INHIBITOR/MITIGATION APPROACH FOR CARBON STEEL IN OIL AND GAS PRODUCTION AND TRANSPORTATION ENVIRONMENTS | 177397213           | 4/25/2017  |               |            |
| Qatar                                  | A LOW COST CORROSION INHIBITOR/MITIGATION APPROACH FOR CARBON STEEL IN OIL AND GAS PRODUCTION AND TRANSPORTATION ENVIRONMENTS | QA2018100046<br>2   | 4/25/2017  |               |            |
| United States                          | CORROSION INHIBITOR COMPOSITIONS AND METHODS OF USING SAME                                                                    | 15496523            | 4/25/2017  |               |            |
| United States                          | CORROSION INHIBITOR COMPOSITIONS AND METHODS OF USING SAME                                                                    | 16305967            | 4/25/2017  |               |            |
| World Intellectual Patent Organization | CORROSION INHIBITOR COMPOSITIONS AND METHODS OF USING SAME                                                                    | PCTUS2017029<br>336 | 4/25/2017  |               |            |
| United Arab Emirates                   | COMPOSITIONS AND METHODS FOR CORROSION INHIBITOR MONITORING                                                                   | P600168918          | 6/8/2017   |               |            |
| Australia                              | COMPOSITIONS AND METHODS FOR CORROSION INHIBITOR MONITORING                                                                   | 2017277654          | 6/8/2017   |               |            |

| Country Name                           | TITLE                                                                      | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|----------------------------------------|----------------------------------------------------------------------------|--------------------|------------|---------------|------------|
| Canada                                 | COMPOSITIONS AND METHODS FOR CORROSION INHIBITOR MONITORING                | 3026380            | 6/8/2017   |               |            |
| European Patent Office                 | COMPOSITIONS AND METHODS FOR CORROSION INHIBITOR MONITORING                | 177393865          | 6/8/2017   |               |            |
| Qatar                                  | COMPOSITIONS AND METHODS FOR CORROSION INHIBITOR MONITORING                | QA20181200532      | 6/8/2017   |               |            |
| United States                          | COMPOSITIONS AND METHODS FOR CORROSION INHIBITOR MONITORING                | 15617559           | 6/8/2017   |               |            |
| World Intellectual Patent Organization | COMPOSITIONS AND METHODS FOR CORROSION INHIBITOR MONITORING                | PCTUS2017036540    | 6/8/2017   |               |            |
| Canada                                 | PARAFFIN SUPPRESSANT COMPOSITIONS, AND METHODS OF MAKING AND USING THEREOF | 3026369            | 6/8/2017   |               |            |
| Canada                                 | PARAFFIN SUPPRESSANT COMPOSITIONS, AND METHODS OF MAKING AND USING THEREOF | 3026390            | 6/8/2017   |               |            |
| European Patent Office                 | PARAFFIN SUPPRESSANT COMPOSITIONS, AND METHODS OF MAKING AND USING THEREOF | 177393873          | 6/8/2017   |               |            |
| Russia                                 | PARAFFIN SUPPRESSANT COMPOSITIONS, AND METHODS OF MAKING AND USING THEREOF | 2018145990         | 6/8/2017   |               |            |
|                                        | PARAFFIN SUPPRESSANT COMPOSITIONS, AND METHODS OF MAKING AND USING         | 15617627           | 6/8/2017   | 10233273      | 3/19/2019  |
| United States                          | FLUORESCENT WATER TREATMENT COMPOUNDS AND METHOD OF USE                    | 15617658           | 6/8/2017   |               |            |

| Country Name                               | TITLE                                                                      | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|--------------------------------------------|----------------------------------------------------------------------------|--------------------|------------|---------------|------------|
| World Intellectual Patent Organization     | PARAFFIN SUPPRESSANT COMPOSITIONS, AND METHODS OF MAKING AND USING         | PCTUS2017036550    | 6/8/2017   |               |            |
| World Intellectual Patent Organization     | PARAFFIN SUPPRESSANT COMPOSITIONS, AND METHODS OF MAKING AND USING THEREOF | PCTUS2017036545    | 6/8/2017   |               |            |
| Angola                                     | REMOVAL OF HYDRATE INHIBITORS FROM WASTE STREAMS                           | 3683               | 2/3/2017   |               |            |
| Brazil                                     | REMOVAL OF HYDRATE INHIBITORS FROM WASTE STREAMS                           | BR1120180158275    | 2/3/2017   |               |            |
| Great Britain                              | REMOVAL OF HYDRATE INHIBITORS FROM WASTE STREAMS                           | 18127480           | 2/3/2017   |               |            |
| Nigeria                                    | REMOVAL OF HYDRATE INHIBITORS FROM WASTE STREAMS                           | NGPTC20183056      | 2/3/2017   |               |            |
| African Intellectual Property Organization | REMOVAL OF HYDRATE INHIBITORS FROM WASTE STREAMS                           | 1201800288         | 2/3/2017   |               |            |
| United States                              | REMOVAL OF HYDRATE INHIBITORS FROM WASTE STREAMS                           | 15423797           | 2/3/2017   |               |            |
| World Intellectual Patent Organization     | REMOVAL OF HYDRATE INHIBITORS FROM WASTE STREAMS                           | PCTUS2017016413    | 2/3/2017   |               |            |

| Country Name                           | TITLE                                                                               | APPLICATION NUMBER  | DATE FILED | PATENT NUMBER | GRANT DATE |
|----------------------------------------|-------------------------------------------------------------------------------------|---------------------|------------|---------------|------------|
| Australia                              | KINETIC HYDRATE INHIBITORS FOR CONTROLLING GAS HYDRATE FORMATION IN WET GAS SYSTEMS | 2017222630          | 2/24/2017  |               |            |
| Brazil                                 | KINETIC HYDRATE INHIBITORS FOR CONTROLLING GAS HYDRATE FORMATION IN WET GAS SYSTEMS | BR1120180172<br>537 | 2/24/2017  |               |            |
| Canada                                 | KINETIC HYDRATE INHIBITORS FOR CONTROLLING GAS HYDRATE FORMATION IN WET GAS SYSTEMS | 3014448             | 2/24/2017  |               |            |
| European Patent Office                 | KINETIC HYDRATE INHIBITORS FOR CONTROLLING GAS HYDRATE FORMATION IN WET GAS SYSTEMS | 177573045           | 2/24/2017  |               |            |
| Saudi Arabia                           | KINETIC HYDRATE INHIBITORS FOR CONTROLLING GAS HYDRATE FORMATION IN WET GAS SYSTEMS | 518392248           | 2/24/2017  |               |            |
|                                        | KINETIC HYDRATE INHIBITORS FOR CONTROLLING GAS HYDRATE FORMATION IN WET GAS SYSTEMS | 16527806            | 7/31/2019  |               |            |
| United States                          | KINETIC HYDRATE INHIBITORS FOR CONTROLLING GAS HYDRATE FORMATION IN WET GAS SYSTEMS | 15441656            | 2/24/2017  |               |            |
| World Intellectual Patent Organization | KINETIC HYDRATE INHIBITORS FOR CONTROLLING GAS HYDRATE FORMATION IN WET GAS SYSTEMS | PCTUS2017019<br>358 | 2/24/2017  |               |            |
| Argentina                              | TEMPERATURE-STABLE PARAFFIN INHIBITOR COMPOSITIONS                                  | P170100030          | 1/5/2017   |               |            |
| Australia                              | TEMPERATURE-STABLE PARAFFIN INHIBITOR COMPOSITIONS                                  | 2017205434          | 1/5/2017   |               |            |
| Brazil                                 | TEMPERATURE-STABLE PARAFFIN INHIBITOR COMPOSITIONS                                  | BR1120180138<br>118 | 1/5/2017   |               |            |

| Country Name                                    | TITLE                                                                              | APPLICATION<br>NUMBER | DATE FILED | PATENT<br>NUMBER | GRANT<br>DATE |
|-------------------------------------------------|------------------------------------------------------------------------------------|-----------------------|------------|------------------|---------------|
| Canada                                          | TEMPERATURE-STABLE PARAFFIN INHIBITOR<br>COMPOSITIONS                              | 3009801               | 1/5/2017   |                  |               |
| European<br>Patent Office                       | TEMPERATURE-STABLE PARAFFIN INHIBITOR<br>COMPOSITIONS                              | 177362944             | 1/5/2017   |                  |               |
| Russia                                          | TEMPERATURE-STABLE PARAFFIN INHIBITOR<br>COMPOSITIONS                              | 2018128281            | 1/5/2017   |                  |               |
| United States                                   | TEMPERATURE-STABLE PARAFFIN INHIBITOR<br>COMPOSITIONS                              | 15399025              | 1/5/2017   |                  |               |
| World<br>Intellectual<br>Patent<br>Organization | TEMPERATURE-STABLE PARAFFIN INHIBITOR<br>COMPOSITIONS                              | PCTUS2017012<br>260   | 1/5/2017   |                  |               |
| United States                                   | PARAFFIN DEPOSITION INHIBITOR COATINGS                                             | 15632963              | 6/26/2017  |                  |               |
| World<br>Intellectual<br>Patent<br>Organization | PARAFFIN DEPOSITION INHIBITOR COATINGS                                             | 2017US39232           | 6/26/2017  |                  |               |
| United States                                   | CORROSION INHIBITOR COMPOSITIONS AND METHODS<br>OF USING SAME                      | 15591466              | 5/10/2017  |                  |               |
| World<br>Intellectual<br>Patent<br>Organization | CORROSION INHIBITOR COMPOSITIONS AND METHODS<br>OF USING SAME                      | PCTUS2017031<br>898   | 5/10/2017  |                  |               |
| Canada                                          | USE OF POLYELECTROLYTES FOR THE REMEDIATION OF<br>SOLIDS FROM OIL FIELD SEPARATION | 3016438               | 3/1/2017   |                  |               |

| Country Name                           | TITLE                                                                           | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|----------------------------------------|---------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
| United States                          | USE OF POLYELECTROLYTES FOR THE REMEDIATION OF SOLIDS FROM OIL FIELD SEPARATION | 15446614           | 3/1/2017   |               |            |
| World Intellectual Patent Organization | USE OF POLYELECTROLYTES FOR THE REMEDIATION OF SOLIDS FROM OIL FIELD SEPARATION | 2017US20231        | 3/1/2017   |               |            |
| Canada                                 | METHODS FOR ENHANCING HYDROCARBON RECOVERY FROM OIL SANDS                       | 3010618            | 1/27/2017  |               |            |
| United States                          | METHODS FOR ENHANCING HYDROCARBON RECOVERY FROM OIL SANDS                       | 15418170           | 1/27/2017  |               |            |
| World Intellectual Patent Organization | METHODS FOR ENHANCING HYDROCARBON RECOVERY FROM OIL SANDS                       | PCTUS2017015360    | 1/27/2017  |               |            |
| Argentina                              | TEMPERATURE-STABLE PARAFFIN INHIBITOR COMPOSITIONS                              | P170100029         | 1/5/2017   |               |            |
| Australia                              | TEMPERATURE-STABLE PARAFFIN INHIBITOR COMPOSITIONS                              | 2017205435         | 1/5/2017   |               |            |
| Brazil                                 | TEMPERATURE-STABLE PARAFFIN INHIBITOR COMPOSITIONS                              | BR1120180137928    | 1/5/2017   |               |            |
| Canada                                 | TEMPERATURE-STABLE PARAFFIN INHIBITOR COMPOSITIONS                              | 3009985            | 1/5/2017   |               |            |
| European Patent Office                 | TEMPERATURE-STABLE PARAFFIN INHIBITOR COMPOSITIONS                              | 177362951          | 1/5/2017   |               |            |
| Russia                                 | TEMPERATURE-STABLE PARAFFIN INHIBITOR COMPOSITIONS                              | 2018128382         | 1/5/2017   |               |            |

| Country Name                                    | TITLE                                                         | APPLICATION<br>NUMBER | DATE FILED | PATENT<br>NUMBER | GRANT<br>DATE |
|-------------------------------------------------|---------------------------------------------------------------|-----------------------|------------|------------------|---------------|
| United States                                   | TEMPERATURE-STABLE PARAFFIN INHIBITOR<br>COMPOSITIONS         | 15399080              | 1/5/2017   |                  |               |
| World<br>Intellectual<br>Patent<br>Organization | TEMPERATURE-STABLE PARAFFIN INHIBITOR<br>COMPOSITIONS         | PCTUS2017012<br>265   | 1/5/2017   |                  |               |
| Argentina                                       | TEMPERATURE-STABLE PARAFFIN INHIBITOR<br>COMPOSITIONS         | P170100894            | 4/7/2017   |                  |               |
| Canada                                          | TEMPERATURE-STABLE PARAFFIN INHIBITOR<br>COMPOSITIONS         | 3019857               | 4/6/2017   |                  |               |
| European<br>Patent Office                       | TEMPERATURE-STABLE PARAFFIN INHIBITOR<br>COMPOSITIONS         | 177203072             | 4/6/2017   |                  |               |
| United States                                   | TEMPERATURE-STABLE PARAFFIN INHIBITOR<br>COMPOSITIONS         | 15480959              | 4/6/2017   |                  |               |
| World<br>Intellectual<br>Patent<br>Organization | TEMPERATURE-STABLE PARAFFIN INHIBITOR<br>COMPOSITIONS         | PCTUS2017026<br>367   | 4/6/2017   |                  |               |
| United Arab<br>Emirates                         | CORROSION INHIBITOR COMPOSITIONS AND METHODS<br>OF USING SAME | P600146318            | 4/24/2017  |                  |               |
| Canada                                          | CORROSION INHIBITOR COMPOSITIONS AND METHODS<br>OF USING SAME | 3021519               | 4/24/2017  |                  |               |
| European<br>Patent Office                       | CORROSION INHIBITOR COMPOSITIONS AND METHODS<br>OF USING SAME | 177210119             | 4/24/2017  |                  |               |
| Qatar                                           | CORROSION INHIBITOR COMPOSITIONS AND METHODS<br>OF USING SAME | QA2018100046<br>3     | 4/24/2017  |                  |               |

| Country Name                           | TITLE                                                                  | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|----------------------------------------|------------------------------------------------------------------------|--------------------|------------|---------------|------------|
| United States                          | CORROSION INHIBITOR COMPOSITIONS AND METHODS OF USING SAME             | 15494995           | 4/24/2017  |               |            |
| World Intellectual Patent Organization | CORROSION INHIBITOR COMPOSITIONS AND METHODS OF USING SAME             | PCTUS2017029098    | 4/24/2017  |               |            |
| Argentina                              | PARAFFIN SUPPRESSANT COMPOSITIONS AND METHODS                          | P170102735         | 9/29/2017  |               |            |
| Argentina                              | PARAFFIN INHIBITORS, AND PARAFFIN SUPPRESSANT COMPOSITIONS AND METHODS | P170102736         | 9/29/2017  |               |            |
|                                        | PARAFFIN SUPPRESSANT COMPOSITIONS AND METHODS                          |                    | 9/28/2017  |               |            |
|                                        | PARAFFIN INHIBITORS, AND PARAFFIN SUPPRESSANT COMPOSITIONS AND METHODS |                    | 9/28/2017  |               |            |
|                                        | PARAFFIN SUPPRESSANT COMPOSITIONS AND METHODS                          | 3038783            | 9/28/2017  |               |            |
|                                        | PARAFFIN INHIBITORS, AND PARAFFIN SUPPRESSANT COMPOSITIONS AND METHODS | 3038772            | 9/28/2017  |               |            |
|                                        | PARAFFIN SUPPRESSANT COMPOSITIONS AND METHODS                          | 2019112093         | 9/28/2017  |               |            |
|                                        | PARAFFIN INHIBITORS, AND PARAFFIN SUPPRESSANT COMPOSITIONS AND METHODS | 2019112843         | 9/28/2017  |               |            |
| United States                          | PARAFFIN SUPPRESSANT COMPOSITIONS AND METHODS                          | 15718502           | 9/28/2017  |               |            |

| Country Name                           | TITLE                                                                                        | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|----------------------------------------|----------------------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
| United States                          | PARAFFIN INHIBITORS, AND PARAFFIN SUPPRESSANT COMPOSITIONS AND METHODS                       | 15718566           | 9/28/2017  |               |            |
| World Intellectual Patent Organization | PARAFFIN SUPPRESSANT COMPOSITIONS AND METHODS                                                | PCTUS2017053 903   | 9/28/2017  |               |            |
| World Intellectual Patent Organization | PARAFFIN INHIBITORS, AND PARAFFIN SUPPRESSANT COMPOSITIONS AND METHODS                       | PCTUS2017053 901   | 9/28/2017  |               |            |
| Argentina                              | EMULSIONES DE POLÍMERO ENTRECruzADO DE HIDRAZIDA PARA USAR EN RECUPERACIÓN DE PETRÓLEO CRUDO | PI70100458         | 2/23/2017  |               |            |
| Brazil                                 | HYDRAZIDE CROSSLINKED POLYMER EMULSIONS FOR USE IN CRUDE OIL RECOVERY                        | BR1120180171 077   | 2/23/2017  |               |            |
| European Patent Office                 | HYDRAZIDE CROSSLINKED POLYMER EMULSIONS FOR USE IN CRUDE OIL RECOVERY                        | 177571973          | 2/23/2017  |               |            |
| United States                          | HYDRAZIDE CROSSLINKED POLYMER EMULSIONS FOR USE IN CRUDE OIL RECOVERY                        | 15440966           | 2/23/2017  | 10035946      | 7/31/2018  |
| World Intellectual Patent Organization | HYDRAZIDE CROSSLINKED POLYMER EMULSIONS FOR USE IN CRUDE OIL RECOVERY                        | PCTUS2017019 096   | 2/23/2017  |               |            |
| Canada                                 | SYSTEM AND METHOD FOR HYDROGEN SULFIDE DECONTAMINATION                                       | 2641278            | 10/17/2008 | 2641278       | 3/15/2016  |

| Country Name                                    | TITLE                                                     | APPLICATION<br>NUMBER | DATE FILED | PATENT<br>NUMBER | GRANT<br>DATE |
|-------------------------------------------------|-----------------------------------------------------------|-----------------------|------------|------------------|---------------|
| United States                                   | SYSTEM AND METHOD FOR HYDROGEN SULFIDE<br>DECONTAMINATION | 12253824              | 10/17/2008 | 7935323          | 5/3/2011      |
| European<br>Patent Office                       | REMOVAL OF ORGANIC DEPOSITS                               | 177166444             | 4/4/2017   |                  |               |
| Great Britain                                   | REMOVAL OF ORGANIC DEPOSITS                               | 16057713              | 4/4/2016   |                  |               |
| Russia                                          | REMOVAL OF ORGANIC DEPOSITS                               | 2018137691            | 4/4/2017   |                  |               |
| United States                                   | REMOVAL OF ORGANIC DEPOSITS                               | 16090682              | 4/4/2017   |                  |               |
| World<br>Intellectual<br>Patent<br>Organization | REMOVAL OF ORGANIC DEPOSITS                               | PCTIB20170519<br>15   | 4/4/2017   |                  |               |
| Australia                                       | PROGRESSIVE TANK SYSTEM AND METHOD FOR USING<br>THE SAME  | 2017234255            | 3/13/2017  |                  |               |
| Canada                                          | PROGRESSIVE TANK SYSTEM AND METHOD FOR USING<br>THE SAME  | 3017483               | 3/13/2017  |                  |               |
| Colombia                                        | Sistema de tanque progresivo y método para utilizarlo     | 20180009868           | 9/19/2018  |                  |               |
| European<br>Patent Office                       | PROGRESSIVE TANK SYSTEM AND METHOD FOR USING<br>THE SAME  | 177131281             | 3/13/2017  |                  |               |
| Mexico                                          | PROGRESSIVE TANK SYSTEM AND METHOD FOR USING<br>THE SAME  | MXa20180111<br>38     | 3/13/2017  |                  |               |
| United States                                   | PROGRESSIVE TANK SYSTEM AND METHOD FOR USING<br>THE SAME  | 15457940              | 3/13/2017  |                  |               |
| World<br>Intellectual<br>Patent<br>Organization | PROGRESSIVE TANK SYSTEM AND METHOD FOR USING<br>THE SAME  | PCTUS2017022<br>157   | 3/13/2017  |                  |               |

| Country Name                                    | TITLE                                                                                          | APPLICATION<br>NUMBER | DATE FILED | PATENT<br>NUMBER | GRANT<br>DATE |
|-------------------------------------------------|------------------------------------------------------------------------------------------------|-----------------------|------------|------------------|---------------|
| Brazil                                          | RAPID POLYMER HYDRATION                                                                        | BR1120180684<br>767   | 3/13/2017  |                  |               |
| European<br>Patent Office                       | RAPID POLYMER HYDRATION                                                                        | 177135480             | 3/13/2017  |                  |               |
| United States                                   | RAPID POLYMER HYDRATION                                                                        | 15457936              | 3/13/2017  |                  |               |
| World<br>Intellectual<br>Patent<br>Organization |                                                                                                | PCTUS2017022<br>161   | 3/13/2017  |                  |               |
| Canada                                          | SLOW-RELEASE SCALE INHIBITING COMPOSITIONS                                                     | 3024478               | 5/12/2017  |                  |               |
| European<br>Patent Office                       | SLOW-RELEASE SCALE INHIBITING COMPOSITIONS                                                     | 177250990             | 5/12/2017  |                  |               |
| United States                                   | SLOW-RELEASE SCALE INHIBITING COMPOSITIONS                                                     | 15593776              | 5/12/2017  |                  |               |
| World<br>Intellectual<br>Patent<br>Organization |                                                                                                | PCTUS2017032<br>372   | 5/12/2017  |                  |               |
| Australia                                       | SLOW-RELEASE SCALE INHIBITING COMPOSITIONS                                                     |                       |            |                  |               |
|                                                 | Methods for treating a well bore within an underground<br>formation                            | 2014366429            | 12/11/2014 | 2014366429       | 7/19/2018     |
| Brazil                                          | METHODS FOR TREATING A WELL BORE WITHIN AN<br>UNDERGROUND FORMATION ( JDA - BAYER / COVESTRO ) | BR1120160141<br>024   | 12/11/2014 |                  |               |
| Canada                                          | METHODS FOR TREATING A WELL BORE WITHIN AN<br>UNDERGROUND FORMATION                            | 2933833               | 12/11/2014 |                  |               |

| Country Name                           | TITLE                                                                                       | APPLICATION NUMBER  | DATE FILED | PATENT NUMBER | GRANT DATE |
|----------------------------------------|---------------------------------------------------------------------------------------------|---------------------|------------|---------------|------------|
| China                                  | METHODS FOR TREATING A WELL BORE WITHIN AN UNDERGROUND FORMATION ( JDA - BAYER / COVESTRO ) | 201480075730<br>6   | 12/11/2014 |               |            |
| Colombia                               | METHODS FOR TREATING A WELL BORE WITHIN AN UNDERGROUND FORMATION ( JDA - BAYER / COVESTRO ) | 16173282            | 12/11/2014 |               |            |
| European Patent Office                 | METHODS FOR TREATING A WELL BORE WITHIN AN UNDERGROUND FORMATION ( JDA - BAYER / COVESTRO ) | 148242589           | 12/11/2014 |               |            |
| Mexico                                 | METHODS FOR TREATING A WELL BORE WITHIN AN UNDERGROUND FORMATION ( JDA - BAYER / COVESTRO ) | MXa20160080<br>92   | 12/11/2014 |               |            |
| United States                          | Methods for treating a well bore within an underground formation                            | 14132236            | 12/18/2013 | 10000686      | 6/19/2018  |
| United States                          | SOLVENCY FOR ASPHALTENE DEPOSIT REMEDIATION OR INHIBITION                                   | 62607102            | 12/18/2017 |               |            |
| United States                          | SOLVENCY FOR ASPHALTENE DEPOSIT REMEDIATION OR INHIBITION                                   | 16224290            | 12/18/2018 |               |            |
| World Intellectual Patent Organization | SOLVENCY FOR ASPHALTENE DEPOSIT REMEDIATION OR INHIBITION                                   | PCTUS2018066<br>249 | 12/18/2018 |               |            |
| United States                          | COMPOSITIONS AND METHODS FOR DELAYED CROSSLINKING IN HYDRAULIC FRACTURING FLUIDS            | 15649129            | 7/13/2017  |               |            |

| Country Name                                    | TITLE                                                                               | APPLICATION<br>NUMBER              | DATE FILED | PATENT<br>NUMBER | GRANT<br>DATE |
|-------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------|------------|------------------|---------------|
| World<br>Intellectual<br>Patent<br>Organization | COMPOSITIONS AND METHODS FOR DELAYED<br>CROSSLINKING IN HYDRAULIC FRACTURING FLUIDS | PCTUS2017041<br>943                | 7/13/2017  |                  |               |
| Argentina                                       | COMPOSITIONS FOR ENHANCED OIL RECOVERY                                              | P170101786                         | 6/28/2017  |                  |               |
| Colombia                                        | COMPOSITION, METHOD AND USE FOR ENHANCED OIL<br>RECOVERY                            | NC2018001433<br>8                  | 6/26/2017  |                  |               |
| United States                                   | COMPOSITIONS FOR ENHANCED OIL RECOVERY                                              | 15633031                           | 6/26/2017  |                  |               |
| World<br>Intellectual<br>Patent<br>Organization | COMPOSITION, METHOD AND USE FOR ENHANCED OIL<br>RECOVERY                            | 2017US39235<br>BR1120190112<br>731 | 6/26/2017  |                  |               |
|                                                 | THIOL-FORMYL HEMIACETAL CORROSION INHIBITORS                                        |                                    | 12/1/2017  |                  |               |
|                                                 | THIOL-FORMYL HEMIACETAL CORROSION INHIBITORS                                        | 3045658                            | 12/1/2017  |                  |               |
|                                                 | THIOL-FORMYL HEMIACETAL CORROSION INHIBITORS                                        | 178293601                          | 12/1/2017  |                  |               |
|                                                 | THIOL-FORMYL HEMIACETAL CORROSION INHIBITORS                                        | MXa20190064<br>42                  | 12/1/2017  |                  |               |
| United States                                   | THIOL-FORMYL HEMIACETAL CORROSION INHIBITORS                                        | 15829576                           | 12/1/2017  |                  |               |
| World<br>Intellectual<br>Patent<br>Organization | THIOL-FORMYL HEMIACETAL CORROSION INHIBITORS                                        | PCTUS2017064<br>282                | 12/1/2017  |                  |               |
| Argentina                                       | CONTROLLED RELEASE SOLID SCALE INHIBITORS                                           | P170103559                         | 12/18/2017 |                  |               |
| United States                                   | CONTROLLED RELEASE SOLID SCALE INHIBITORS                                           | 15845164                           | 12/18/2017 |                  |               |
| World<br>Intellectual                           | CONTROLLED RELEASE SOLID SCALE INHIBITORS                                           | PCTUS2017066<br>982                | 12/18/2017 |                  |               |

| Country Name                           | TITLE                                                 | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
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| Patent Organization                    |                                                       |                    |            |               |            |
| Argentina                              | COMPOSITIONS FOR ENHANCED OIL RECOVERY                | P170102964         | 10/25/2017 |               |            |
|                                        | COMPOSITIONS FOR ENHANCED OIL RECOVERY                | 3041060            | 10/24/2017 |               |            |
|                                        | COMPOSITIONS FOR ENHANCED OIL RECOVERY                | NC20190004084      | 10/24/2017 |               |            |
| United States                          | COMPOSITIONS FOR ENHANCED OIL RECOVERY                | 15792108           | 10/24/2017 |               |            |
| World Intellectual Patent Organization | COMPOSITIONS FOR ENHANCED OIL RECOVERY                | PCTUS2017058001    | 10/24/2017 |               |            |
| Argentina                              | USE OF SULFONIUM SALTS AS HYDROGEN SULFIDE INHIBITORS | P180100463         | 2/28/2018  |               |            |
|                                        | USE OF SULFONIUM SALTS AS HYDROGEN SULFIDE INHIBITORS |                    | 2/28/2018  |               |            |
|                                        | USE OF SULFONIUM SALTS AS HYDROGEN SULFIDE INHIBITORS |                    | 2/28/2018  |               |            |
|                                        | USE OF SULFONIUM SALTS AS HYDROGEN SULFIDE INHIBITORS |                    | 2/28/2018  |               |            |
|                                        | USE OF SULFONIUM SALTS AS HYDROGEN SULFIDE INHIBITORS |                    | 2/28/2018  |               |            |
| GCC (Gulf Co-op Council)               | USE OF SULFONIUM SALTS AS HYDROGEN SULFIDE INHIBITORS | 201834858          | 2/28/2018  |               |            |
|                                        | USE OF SULFONIUM SALTS AS HYDROGEN SULFIDE INHIBITORS |                    | 2/28/2018  |               |            |

| Country Name                           | TITLE                                                                               | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|----------------------------------------|-------------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
|                                        | USE OF SULFONIUM SALTS AS HYDROGEN SULFIDE INHIBITORS                               | 15445707           | 2/28/2017  | 10301553      | 5/28/2019  |
| World Intellectual Patent Organization | USE OF SULFONIUM SALTS AS HYDROGEN SULFIDE INHIBITORS                               | PCTUS2018020076    | 2/28/2018  |               |            |
| United States                          | KINETIC HYDRATE INHIBITORS FOR CONTROLLING GAS HYDRATE FORMATION IN WET GAS SYSTEMS | 16104794           | 8/17/2018  |               |            |
| World Intellectual Patent Organization | KINETIC HYDRATE INHIBITORS FOR CONTROLLING GAS HYDRATE FORMATION IN WET GAS SYSTEMS | PCTUS2018046975    | 8/17/2018  |               |            |
| United States                          | METHOD FOR DISPERSING KINETIC HYDRATE INHIBITORS                                    | 15995501           | 6/1/2018   |               |            |
| World Intellectual Patent Organization | METHOD FOR DISPERSING KINETIC HYDRATE INHIBITORS                                    | PCTUS2018035557    | 6/1/2018   |               |            |
| United States                          | THIOL ADDUCTS FOR CORROSION INHIBITION                                              | 16054732           | 8/3/2018   |               |            |
| World Intellectual Patent Organization | THIOL ADDUCTS FOR CORROSION INHIBITION                                              | PCTUS2018045237    | 8/3/2018   |               |            |
| Argentina                              | DILUTION SKID AND INJECTION SYSTEM FOR SOLID/HIGH VISCOSITY LIQUID CHEMICALS        | P180101366         | 5/23/2018  |               |            |
| United States                          | DILUTION SKID AND INJECTION SYSTEM FOR SOLID/HIGH VISCOSITY LIQUID CHEMICALS        | 15987623           | 5/23/2018  |               |            |

| Country Name                                    | TITLE                                                                        | APPLICATION NUMBER  | DATE FILED | PATENT NUMBER | GRANT DATE |
|-------------------------------------------------|------------------------------------------------------------------------------|---------------------|------------|---------------|------------|
| World<br>Intellectual<br>Patent<br>Organization | DILUTION SKID AND INJECTION SYSTEM FOR SOLID/HIGH VISCOSITY LIQUID CHEMICALS | PCTUS2018034<br>113 | 5/23/2018  |               |            |
| Argentina                                       | INJECTION SYSTEM FOR CONTROLLED DELIVERY OF SOLID OIL FIELD CHEMICALS        | P180101366          | 5/23/2018  |               |            |
| United States                                   | INJECTION SYSTEM FOR CONTROLLED DELIVERY OF SOLID OIL FIELD CHEMICALS        | 15987686            | 5/23/2018  |               |            |
| World<br>Intellectual<br>Patent<br>Organization | INJECTION SYSTEM FOR CONTROLLED DELIVERY OF SOLID OIL FIELD CHEMICALS        | PCTUS2018034<br>126 | 5/23/2018  |               |            |
| United States                                   | DYNAMIC WAX DEPOSITION TESTING SYSTEMS AND METHODS                           | 15942165            | 3/30/2018  |               |            |
| United States                                   | ALKENYL SUCCINIMIDES AND USE AS NATURAL GAS HYDRATE INHIBITORS               | 62751938            | 10/29/2018 |               |            |
| United States                                   | CORROSION INHIBITOR COMPOSITIONS AND METHODS OF USING SAME                   | 16174913            | 10/30/2018 |               |            |
| World<br>Intellectual<br>Patent<br>Organization | CORROSION INHIBITOR COMPOSITIONS AND METHODS OF USING SAME                   | PCTUS2018058<br>176 | 10/30/2018 |               |            |
| United States                                   | CORROSION INHIBITOR COMPOSITIONS AND METHODS OF USING SAME                   | 16174995            | 10/30/2018 |               |            |
| World<br>Intellectual                           | THIOL-MALEIC ADHYDRIDE ADDUCTS FOR CORROSION INHIBITION                      | PCTUS2018058<br>181 | 10/30/2018 |               |            |

| Country Name                           | TITLE                                                                                                               | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
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| Patent Organization                    |                                                                                                                     |                    |            |               |            |
| United States                          | CORROSION INHIBITOR COMPOSITIONS AND METHODS OF USING SAME                                                          | 16175051           | 10/30/2018 |               |            |
| Canada                                 | TEMPERATURE-STABLE CORROSION INHIBITOR COMPOSITIONS & METHODS OF USE                                                | 3006935            | 6/1/2018   |               |            |
| United States                          | TEMPERATURE-STABLE CORROSION INHIBITOR COMPOSITIONS & METHODS OF USE                                                | 15992383           | 5/30/2018  |               |            |
| United States                          | FLOWABILITY TESTING SYSTEMS AND METHODS                                                                             | 62628336           | 2/9/2018   |               |            |
|                                        | FLOWABILITY TESTING SYSTEMS AND METHODS                                                                             | 16270890           | 2/8/2019   |               |            |
| Argentina                              | FLUID DIVERSION COMPOSITION IN WELL STIMULATION                                                                     | P180103495         | 11/28/2018 |               |            |
| United States                          | FLUID DIVERSION COMPOSITION IN WELL STIMULATION                                                                     | 16193542           | 11/16/2018 |               |            |
| World Intellectual Patent Organization | FLUID DIVERSION COMPOSITION IN WELL STIMULATION                                                                     | PCTUS1861538       | 11/16/2018 |               |            |
| United States                          | IN-LINE CHEMICAL HEATING FOR IN-SITU GENERATION OF ACTIVE CHEMICALS                                                 | 62650770           | 3/30/2018  |               |            |
| United States                          | IN-LINE CHEMICAL HEATING FOR IN-SITU GENERATION OF ACTIVE CHEMICALS                                                 | 16193066           | 11/16/2018 |               |            |
| United States                          | ALKYL LACTONE-DERIVED HYDROXYAMIDES AND ALKYL LACTONE-DERIVED HYDROXYESTERS FOR THE CONTROL OF NATURAL GAS HYDRATES | 62697153           | 7/12/2018  |               |            |

| Country Name                                    | TITLE                                                                                                               | APPLICATION<br>NUMBER | DATE FILED | PATENT<br>NUMBER | GRANT<br>DATE |
|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|-----------------------|------------|------------------|---------------|
|                                                 | ALKYL LACTONE-DERIVED HYDROXYAMIDES AND ALKYL LACTONE-DERIVED HYDROXYESTERS FOR THE CONTROL OF NATURAL GAS HYDRATES | 16507873              | 7/10/2019  |                  |               |
|                                                 | ALKYL LACTONE-DERIVED HYDROXYAMIDES AND ALKYL LACTONE-DERIVED HYDROXYESTERS FOR THE CONTROL OF NATURAL GAS HYDRATES | PCTUS2019041<br>155   | 7/10/2019  |                  |               |
| United States                                   | COMPOSITIONS FOR ENHANCED OIL RECOVERY                                                                              | 62690442              | 6/27/2018  |                  |               |
| United States                                   | COMPOSITIONS FOR ENHANCED OIL RECOVERY                                                                              | 16026345              | 7/3/2018   |                  |               |
| World<br>Intellectual<br>Patent<br>Organization | COMPOSITIONS FOR ENHANCED OIL RECOVERY                                                                              | PCTUS2018040<br>712   | 7/3/2018   |                  |               |
| United States                                   | USE OF SILOXANE POLYMERS FOR VAPOR PRESSURE REDUCTION OF PROCESSED CRUDE OIL                                        | 16183007              | 11/7/2018  |                  |               |
| World<br>Intellectual<br>Patent<br>Organization | USE OF SILOXANE POLYMERS FOR VAPOR PRESSURE REDUCTION OF PROCESSED CRUDE OIL                                        | PCTUS2018059<br>605   | 11/7/2018  |                  |               |
| United States                                   | COMPOSITIONS AND METHODS FOR BIOFILM REMOVAL                                                                        | 62619215              | 1/19/2018  |                  |               |
|                                                 | COMPOSITIONS AND METHODS FOR BIOFILM REMOVAL                                                                        | 16251548              | 1/18/2019  |                  |               |
| United States                                   | GAS HYDRATE INHIBITION USING METHANOL FOAM COMPOSITION                                                              | 62760691              | 11/13/2018 |                  |               |
| United States                                   | PREPARATION OF DISULFIDE CORROSION INHIBITORS BY ELECTROCHEMICAL METHODS                                            | 62772998              | 11/29/2018 |                  |               |
| United States                                   | SALT-TOLERANT, FAST-DISSOLVING, WATER-SOLUBLE RHEOLOGY MODIFIERS                                                    | 62711983              | 7/30/2018  |                  |               |

| Country Name  | TITLE                                                                                                  | APPLICATION NUMBER  | DATE FILED | PATENT NUMBER | GRANT DATE |
|---------------|--------------------------------------------------------------------------------------------------------|---------------------|------------|---------------|------------|
|               | SALT-TOLERANT, FAST-DISSOLVING, WATER-SOLUBLE RHEOLOGY MODIFIERS                                       | 16523642            | 7/26/2019  |               |            |
|               | SALT-TOLERANT, FAST-DISSOLVING, WATER-SOLUBLE RHEOLOGY MODIFIERS                                       | PCTUS2019043<br>584 | 7/26/2019  |               |            |
| United States | CARBOXY ALKYL-ESTER ANTI-AGGLOMERANTS FOR THE CONTROL OF NATURAL GAS HYDRATES                          | 62684929            | 6/14/2018  |               |            |
|               | CARBOXY ALKYL-ESTER ANTI-AGGLOMERANTS FOR THE CONTROL OF NATURAL GAS HYDRATES                          | 16440663            | 6/13/2019  |               |            |
|               | CARBOXY ALKYL-ESTER ANTI-AGGLOMERANTS FOR THE CONTROL OF NATURAL GAS HYDRATES                          | PCTUS2019036<br>920 | 6/13/2019  |               |            |
| Canada        | EQUIPMENT AND METHOD OF OPERATING A PORTABLE HIGH TEMPERATURE HIGH PRESSURE PHASE SEPARATION SIMULATOR | 3014779             | 8/21/2018  |               |            |
|               | EQUIPMENT AND METHOD OF OPERATING A PORTABLE HIGH TEMPERATURE HIGH PRESSURE PHASE SEPARATION SIMULATOR |                     |            |               |            |
| United States | ALKYL LACTONE- DERIVED CORROSION INHIBITORS                                                            | 62697165            | 7/12/2018  |               |            |
|               | ALKYL LACTONE- DERIVED CORROSION INHIBITORS                                                            | 16507649            | 7/10/2019  |               |            |
|               | ALKYL LACTONE- DERIVED CORROSION INHIBITORS                                                            | PCTUS2019041<br>152 | 7/10/2019  |               |            |
| United States | REMOVAL AND PREVENTION OF BIOFILM BY NANOPARTICLE CHEMISTRIES                                          | 6685610             | 6/15/2018  |               |            |
|               | REMOVAL AND PREVENTION OF BIOFILM BY NANOPARTICLE CHEMISTRIES                                          | 16441820            | 6/14/2019  |               |            |
| United States | USE OF SULFONIUM SALTS AS CORROSION INHIBITORS                                                         | 16116669            | 8/29/2018  |               |            |

| Country Name   | TITLE                                                                                                               | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|----------------|---------------------------------------------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
|                | USE OF SULFONIUM SALTS AS CORROSION INHIBITORS                                                                      |                    |            |               |            |
| United States  | CROSSLINKED POLYMERS FOR USE IN CRUDE OIL RECOVERY                                                                  | 62746961           | 10/17/2018 |               |            |
| United States  | USE OF MULTIPLE CHARGED CATIONIC COMPOUNDS DERIVED FROM POLYAMINES FOR CLAY STABILIZATION IN OIL AND GAS OPERATIONS | 62724365           | 8/29/2018  |               |            |
| United States  | ADDITIVES FOR STEAM-INJECTION OIL RECOVERY                                                                          | 62751013           | 10/26/2018 |               |            |
|                | COMPLETE REMOVAL OF SOLIDS DURING HYDROGEN SULFIDE SCAVENGING OPERATIONS USING A SCAVENGER AND A MICHAEL ACCEPTOR   | 62795678           | 1/23/2019  |               |            |
|                | SELF-INVERTING POLYMER EMULSIONS                                                                                    | 62825113           | 3/28/2019  |               |            |
|                | LOADED, SEALED NANOTUBES FOR OIL RECOVERY                                                                           | 62861510           | 6/14/2019  |               |            |
|                | POLYETHER POLYESTERS HAVING ANIONIC FUNCTIONALITY                                                                   | 047044912          | 1/22/2004  | 1587598       | 7/24/2019  |
|                | POLYETHER POLYESTERS HAVING ANIONIC FUNCTIONALITY                                                                   | 047044912          | 1/22/2004  | 1587598       | 7/24/2019  |
|                | POLYETHER POLYESTERS HAVING ANIONIC FUNCTIONALITY                                                                   | 047044912          | 1/22/2004  | 1587598       | 7/24/2019  |
| Norway         | Polyeter-polystere med anionisk funksjonalitet.                                                                     | 20053927           | 8/23/2005  |               |            |
|                | POLYETHER POLYESTERS HAVING ANIONIC FUNCTIONALITY                                                                   | 047044912          | 1/22/2004  | 1587598       | 7/24/2019  |
|                | POLYETHER POLYESTERS HAVING ANIONIC FUNCTIONALITY                                                                   | 047044912          | 1/22/2004  | 1587598       | 7/24/2019  |
| United Kingdom | METHOD OF REDUCING THE VISCOSITY OF HYDROCARBONS                                                                    | 108255043          | 10/19/2010 | 2491091       | 12/4/2019  |

| Country Name | TITLE                                                                                              | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|--------------|----------------------------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
| Netherlands  | METHOD OF REDUCING THE VISCOSITY OF HYDROCARBONS                                                   | 108255043          | 10/19/2010 | 2491091       | 12/4/2019  |
| Norway       | METHOD OF REDUCING THE VISCOSITY OF HYDROCARBONS                                                   | 108255043          | 10/19/2010 | 2491091       | 12/4/2019  |
|              | ACID GAS SCRUBBING COMPOSITION                                                                     | 107946352          | 6/29/2010  | 2448667       | 6/26/2019  |
|              | ACID GAS SCRUBBING COMPOSITION                                                                     | 107946352          | 6/29/2010  | 2448667       | 6/26/2019  |
|              | ACID GAS SCRUBBING COMPOSITION                                                                     | 107946352          | 6/29/2010  | 2448667       | 6/26/2019  |
|              | AN ENVIRONMENTALLY FRIENDLY DISPERSION SYSTEM USED IN THE PREPARATION OF INVERSE EMULSION POLYMERS | 127963999          | 6/5/2012   | 2718362       | 9/11/2019  |
|              | AN ENVIRONMENTALLY FRIENDLY DISPERSION SYSTEM USED IN THE PREPARATION OF INVERSE EMULSION POLYMERS | 127963999          | 6/5/2012   | 2718362       | 9/11/2019  |
|              | AN ENVIRONMENTALLY FRIENDLY DISPERSION SYSTEM USED IN THE PREPARATION OF INVERSE EMULSION POLYMERS | 127963999          | 6/5/2012   | 2718362       | 9/11/2019  |
|              | AN ENVIRONMENTALLY FRIENDLY DISPERSION SYSTEM USED IN THE PREPARATION OF INVERSE EMULSION POLYMERS | 127963999          | 6/5/2012   | 2718362       | 9/11/2019  |
|              | ADDITIVES FOR IMPROVING HYDROCARBON RECOVERY                                                       | 2016111032185      | 6/12/2012  |               |            |
| Canada       | MONITORING HYDRAULIC FRACTURING                                                                    | 2904579            | 3/9/2014   | 2904579       | 12/24/2019 |
|              | MOBILITY CONTROL POLYMERS FOR ENHANCED OIL RECOVERY                                                | 16595193           | 10/7/2019  |               |            |

| Country Name           | TITLE                                                                                                         | APPLICATION NUMBER | DATE FILED | PATENT NUMBER       | GRANT DATE |
|------------------------|---------------------------------------------------------------------------------------------------------------|--------------------|------------|---------------------|------------|
| United Kingdom         | ORGANIC DISULFIDE BASED CORROSION INHIBITORS                                                                  | 148328834          | 7/29/2014  | 3027787             | 1/15/2020  |
| Netherlands            | ORGANIC DISULFIDE BASED CORROSION INHIBITORS                                                                  | 148328834          | 7/29/2014  | 3027787             | 1/15/2020  |
| Norway                 | ORGANIC DISULFIDE BASED CORROSION INHIBITORS                                                                  | 148328834          | 7/29/2014  | 3027787             | 1/15/2020  |
| France                 | LOW DOSAGE NAPHTHENATE INHIBITORS                                                                             | 058148420          | 6/16/2005  | 1751395             | 2/11/2009  |
| Italy                  | LOW DOSAGE NAPHTHENATE INHIBITORS                                                                             | 058148420          | 6/16/2005  | 5020099017<br>27068 | 2/11/2009  |
|                        | THE USE OF OLIGO-QUATERNARY COMPOSITIONS TO INCREASE SCALE INHIBITOR LIFETIME IN A SUBTERRANEAN FORMATION     | MXa20190110<br>88  | 5/22/2013  |                     |            |
|                        | POLYMER EMULSIONS FOR USE IN CRUDE OIL RECOVERY                                                               | 2019240605         | 7/29/2015  |                     |            |
|                        | ПОЛИМЕРНЫЕ ЭМУЛЬСИИ ДЛЯ ПРИМЕНЕНИЯ ПРИ ИЗВЛЕЧЕНИИ СЫРОЙ НЕФТИ                                                 | 201992069          | 7/29/2015  |                     |            |
|                        | POLYMER EMULSIONS FOR USE IN CRUDE OIL RECOVERY                                                               | 16601047           | 10/14/2019 |                     |            |
|                        | CORROSION INHIBITORS AND KINETIC HYDRATE INHIBITORS                                                           | 16674550           | 11/5/2019  |                     |            |
| Brazil                 | PREPARATION OF NEW STABLE HYDROGEN SULFIDE SCAVENGERS USEFUL IN BOTH WATER AS WELL AS OIL MEDIUM APPLICATIONS | 112019000989<br>2  | 9/27/2017  |                     |            |
| Canada                 | PREPARATION OF NEW STABLE HYDROGEN SULFIDE SCAVENGERS USEFUL IN BOTH WATER AS WELL AS OIL MEDIUM APPLICATIONS |                    | 9/27/2017  |                     |            |
| European Patent Office | PREPARATION OF NEW STABLE HYDROGEN SULFIDE SCAVENGERS USEFUL IN BOTH WATER AS WELL AS OIL MEDIUM APPLICATIONS | 177911997          | 9/27/2017  |                     |            |

| Country Name             | TITLE                                                                                                         | APPLICATION NUMBER  | DATE FILED | PATENT NUMBER | GRANT DATE |
|--------------------------|---------------------------------------------------------------------------------------------------------------|---------------------|------------|---------------|------------|
|                          | PREPARATION OF NEW STABLE HYDROGEN SULFIDE SCAVENGERS USEFUL IN BOTH WATER AS WELL AS OIL MEDIUM APPLICATIONS | 16559926            | 9/4/2019   |               |            |
| Germany                  | NON-CORROSIVE COMBINATION FOAMER                                                                              | 161736038           | 6/8/2016   | 3103852       | 12/25/2019 |
| United Kingdom           | NON-CORROSIVE COMBINATION FOAMER                                                                              | 161736038           | 6/8/2016   | 3103852       | 12/25/2019 |
| Netherlands              | NON-CORROSIVE COMBINATION FOAMER                                                                              | 161736038           | 6/8/2016   | 3103852       | 12/25/2019 |
| Romania                  | NON-CORROSIVE COMBINATION FOAMER                                                                              | 161736038           | 6/8/2016   | 3103852       | 12/25/2019 |
|                          | COMPOSITIONS AND METHODS FOR DELAYED CROSSLINKING IN HYDRAULIC FRACTURING FLUIDS                              | 16555087            | 8/29/2019  |               |            |
|                          | IMPROVED NAPHTHENATE INHIBITOR FORMULATIONS                                                                   | BR1120190261<br>257 | 5/25/2018  |               |            |
|                          | IMPROVED NAPHTHENATE INHIBITOR FORMULATIONS                                                                   | 187339437           | 5/25/2018  |               |            |
| United States of America | NAPHTHENATE INHIBITION                                                                                        | 16623493            | 5/25/2018  |               |            |
| European Patent Office   | PARAFFIN SUPPRESSANT COMPOSITIONS, AND METHODS OF MAKING AND USING THEREOF                                    | 177310513           | 6/8/2017   |               |            |
| Russian Federation       | PARAFFIN SUPPRESSANT COMPOSITIONS, AND METHODS OF MAKING AND USING THEREOF                                    | 2019100039          | 6/8/2017   | 2708744       | 12/11/2019 |
| Russian Federation       | TEMPERATURE-STABLE PARAFFIN INHIBITOR COMPOSITIONS                                                            | 2018134062          | 4/6/2017   |               |            |
|                          | TEMPERATURE-STABLE PARAFFIN INHIBITOR COMPOSITIONS                                                            | 16673474            | 11/4/2019  |               |            |
| Australia                | CORROSION INHIBITOR COMPOSITIONS AND METHODS OF USING SAME                                                    | 2017257491          | 4/24/2017  |               |            |

| Country Name             | TITLE                                                                                       | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|--------------------------|---------------------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
| United Kingdom           | METHODS FOR TREATING A WELL BORE WITHIN AN UNDERGROUND FORMATION ( JDA - BAYER / COVESTRO ) | 148242589          | 12/11/2014 |               |            |
| Canada                   | COMPOSITIONS AND METHODS FOR DELAYED CROSSLINKING IN HYDRAULIC FRACTURING FLUIDS            | 3030763            | 7/13/2017  |               |            |
| United States of America | COMPOSITIONS AND METHODS FOR DELAYED CROSSLINKING IN HYDRAULIC FRACTURING FLUIDS            | 16739434           | 1/10/2020  |               |            |
| Canada                   | COMPOSITION, METHOD AND USE FOR ENHANCED OIL RECOVERY                                       | 3029400            | 6/26/2017  |               |            |
| European Patent Office   | COMPOSITION, METHOD AND USE FOR ENHANCED OIL RECOVERY                                       | 177368511          | 6/26/2017  |               |            |
| Australia                | KINETIC HYDRATE INHIBITORS FOR CONTROLLING GAS HYDRATE FORMATION IN WET GAS SYSTEMS         | 2018319025         | 8/17/2018  |               |            |
| Brazil                   | KINETIC HYDRATE INHIBITORS FOR CONTROLLING GAS HYDRATE FORMATION IN WET GAS SYSTEMS         | BR1120200031984    | 8/17/2018  |               |            |
| Canada                   | KINETIC HYDRATE INHIBITORS FOR CONTROLLING GAS HYDRATE FORMATION IN WET GAS SYSTEMS         |                    | 8/17/2018  |               |            |
| European Patent Office   | KINETIC HYDRATE INHIBITORS FOR CONTROLLING GAS HYDRATE FORMATION IN WET GAS SYSTEMS         | 187798343          | 8/17/2018  |               |            |
| Saudi Arabia             | KINETIC HYDRATE INHIBITORS FOR CONTROLLING GAS HYDRATE FORMATION IN WET GAS SYSTEMS         | 520411310          | 8/17/2018  |               |            |
|                          | METHOD FOR DISPERSING KINETIC HYDRATE INHIBITORS                                            | 2018275786         | 6/1/2018   |               |            |
|                          | METHOD FOR DISPERSING KINETIC HYDRATE INHIBITORS                                            | 112019025137       |            |               |            |
|                          | METHOD FOR DISPERSING KINETIC HYDRATE INHIBITORS                                            | 5                  | 6/1/2018   |               |            |
|                          | METHOD FOR DISPERSING KINETIC HYDRATE INHIBITORS                                            |                    | 6/1/2018   |               |            |

| Country Name             | TITLE                                                                             | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
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|                          | METHOD FOR DISPERSING KINETIC HYDRATE INHIBITORS                                  | 187334495          | 6/1/2018   |               |            |
|                          | METHOD FOR DISPERSING KINETIC HYDRATE INHIBITORS                                  | 519410712          | 6/1/2018   |               |            |
| Canada                   | THIOL ADDUCTS FOR CORROSION INHIBITION                                            | 3071545            | 8/3/2018   |               |            |
| European Patent Office   | THIOL ADDUCTS FOR CORROSION INHIBITION                                            | 187556840          | 8/3/2018   |               |            |
| Mexico                   | THIOL ADDUCTS FOR CORROSION INHIBITION                                            | MXa2020001345      | 8/3/2018   |               |            |
|                          | DILUTION SKID AND INJECTION SYSTEM FOR SOLID/HIGH VISCOSITY LIQUID CHEMICALS      |                    | 5/23/2018  |               |            |
|                          | DILUTION SKID AND INJECTION SYSTEM FOR SOLID/HIGH VISCOSITY LIQUID CHEMICALS      | 187312673          | 5/23/2018  |               |            |
|                          | INJECTION SYSTEM FOR CONTROLLED DELIVERY OF SOLID OIL FIELD CHEMICALS             |                    | 5/23/2018  |               |            |
|                          | INJECTION SYSTEM FOR CONTROLLED DELIVERY OF SOLID OIL FIELD CHEMICALS             | 187701362          | 5/23/2018  |               |            |
|                          | ALKENYL SUCCINIMIDES AND USE AS NATURAL GAS HYDRATE INHIBITORS                    | 16665874           | 10/28/2019 |               |            |
|                          | ALKENYL SUCCINIMIDES AND USE AS NATURAL GAS HYDRATE INHIBITORS                    | PCTUS2019058299    | 10/28/2019 |               |            |
| United States of America | NOVEL IMIDAZOLINE-BASED ANTI-AGGLOMERANTS FOR THE CONTROL OF NATURAL GAS HYDRATES |                    |            |               |            |
| Canada                   | FLOWABILITY TESTING SYSTEMS AND METHODS                                           | 3033195            | 2/8/2019   |               |            |
|                          | COMPOSITIONS FOR ENHANCED OIL RECOVERY                                            |                    | 7/3/2018   |               |            |
|                          | COMPOSITIONS FOR ENHANCED OIL RECOVERY                                            |                    | 7/3/2018   |               |            |
|                          | COMPOSITIONS FOR ENHANCED OIL RECOVERY                                            |                    | 7/3/2018   |               |            |

| Country Name | TITLE                                                                                                               | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
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|              | COMPOSITIONS FOR ENHANCED OIL RECOVERY                                                                              |                    | 7/3/2018   |               |            |
|              | COMPOSITIONS FOR ENHANCED OIL RECOVERY                                                                              |                    | 7/3/2018   |               |            |
|              | GAS HYDRATE INHIBITION USING METHANOL FOAM COMPOSITION                                                              | P190103330         | 11/13/2019 |               |            |
|              | GAS HYDRATE INHIBITION USING METHANOL FOAM COMPOSITION                                                              | 16682953           | 11/13/2019 |               |            |
|              | GAS HYDRATE INHIBITION USING METHANOL FOAM COMPOSITION                                                              |                    |            |               |            |
|              | PREPARATION OF DISULFIDE CORROSION INHIBITORS BY ELECTROCHEMICAL METHODS                                            | 16692990           | 11/22/2019 |               |            |
|              | PREPARATION OF DISULFIDE CORROSION INHIBITORS BY ELECTROCHEMICAL METHODS                                            | PCTUS2019062853    | 11/22/2019 |               |            |
|              | COMPOSITIONS FOR ENHANCED OIL RECOVERY                                                                              | 62890235           | 8/22/2019  |               |            |
|              | CROSSLINKED POLYMERS FOR USE IN CRUDE OIL RECOVERY                                                                  | P190102957         | 10/17/2019 |               |            |
|              | CROSSLINKED POLYMERS FOR USE IN CRUDE OIL RECOVERY                                                                  | 16656025           | 10/17/2019 |               |            |
|              | CROSSLINKED POLYMERS FOR USE IN CRUDE OIL RECOVERY                                                                  | PCTUS2019056629    | 10/17/2019 |               |            |
|              | USE OF MULTIPLE CHARGED CATIONIC COMPOUNDS DERIVED FROM POLYAMINES FOR CLAY STABILIZATION IN OIL AND GAS OPERATIONS | 16554805           | 8/29/2019  |               |            |
|              | ADDITIVES FOR STEAM-INJECTION OIL RECOVERY                                                                          | 16655683           | 10/17/2019 |               |            |
|              | ADDITIVES FOR STEAM-INJECTION OIL RECOVERY                                                                          | PCTUS2019056696    | 10/17/2019 |               |            |

| Country Name             | TITLE                                                                                                             | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
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|                          | COMPLETE REMOVAL OF SOLIDS DURING HYDROGEN SULFIDE SCAVENGING OPERATIONS USING A SCAVENGER AND A MICHAEL ACCEPTOR |                    |            |               |            |
| United States of America | COMPLETE REMOVAL OF SOLIDS DURING HYDROGEN SULFIDE SCAVENGING OPERATIONS USING A SCAVENGER AND A MICHAEL ACCEPTOR | 16747665           | 1/21/2020  |               |            |
|                          | COMPLETE REMOVAL OF SOLIDS DURING HYDROGEN SULFIDE SCAVENGING OPERATIONS USING A SCAVENGER AND A MICHAEL ACCEPTOR |                    |            |               |            |
|                          | SELF-INVERTING POLYMER EMULSIONS                                                                                  |                    |            |               |            |
| United States of America | SELF-INVERTING POLYMER EMULSIONS                                                                                  |                    |            |               |            |
|                          | SELF-INVERTING POLYMER EMULSIONS                                                                                  |                    |            |               |            |
|                          | ADDITIVES FOR LATEX EMULSION STABILIZATION                                                                        | 62908258           | 9/30/2019  |               |            |
|                          | SURFACE-MODIFIED NANOPARTICLE COMPOSITIONS AND RELATED APPLICATIONS IN SUBTERRANEAN HYDROCARBON RECOVERY          | 62948619           | 12/16/2019 |               |            |
|                          | DEPOSIT-INHIBITING COMPOSITIONS FOR USE IN CRUDE OIL PRODUCTION AND PROCESSING                                    | 62894004           | 8/30/2019  |               |            |
| United Arab Emirates     | DEVELOPMENT OF A NOVEL HIGH TEMPERATURE STABLE SCAVENGER FOR REMOVAL OF HYDROGEN SULFIDE                          | P600119117         | 4/21/2016  |               |            |
| Angola                   | DEVELOPMENT OF A NOVEL HIGH TEMPERATURE STABLE SCAVENGER FOR REMOVAL OF HYDROGEN SULFIDE                          | 3558               | 4/21/2016  |               |            |

| Country Name                                        | TITLE                                                                                             | APPLICATION<br>NUMBER | DATE FILED | PATENT<br>NUMBER | GRANT<br>DATE |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------------|-----------------------|------------|------------------|---------------|
| Argentina                                           | DESARROLLO DE UN DEPURADOR ESTABLE A ALTA TEMPERATURA PARA LA ELIMINACIÓN DE SULFURO DE HIDRÓGENO | P160101131            | 4/22/2016  |                  |               |
| Australia                                           | DEVELOPMENT OF A NOVEL HIGH TEMPERATURE STABLE SCAVENGER FOR REMOVAL OF HYDROGEN SULFIDE          | 2016250539            | 4/21/2016  |                  |               |
| Brazil                                              | ?método para tratar sulfeto de hidrogênio em uma corrente?                                        | BR1120170214<br>865   | 4/21/2016  |                  |               |
| Canada                                              | DEVELOPMENT OF A NOVEL HIGH TEMPERATURE STABLE SCAVENGER FOR REMOVAL OF HYDROGEN SULFIDE          | 2982407               | 4/21/2016  |                  |               |
| China                                               | DEVELOPMENT OF A NOVEL HIGH TEMPERATURE STABLE SCAVENGER FOR REMOVAL OF HYDROGEN SULFIDE          | 2016818141            | 4/21/2016  |                  |               |
| Colombia                                            | DEVELOPMENT OF A NOVEL HIGH TEMPERATURE STABLE SCAVENGER FOR REMOVAL OF HYDROGEN SULFIDE          | NC2017000954<br>2     | 4/21/2016  |                  |               |
| European<br>Patent Office                           | DEVELOPMENT OF A NOVEL HIGH TEMPERATURE STABLE SCAVENGER FOR REMOVAL OF HYDROGEN SULFIDE          | 167838143             | 4/21/2016  |                  |               |
| India                                               | DEVELOPMENT OF A NOVEL HIGH TEMPERATURE STABLE SCAVENGER FOR REMOVAL OF HYDROGEN SULFIDE          | 201727032855          | 4/21/2016  |                  |               |
| Nigeria                                             | DEVELOPMENT OF A NOVEL HIGH TEMPERATURE STABLE SCAVENGER FOR REMOVAL OF HYDROGEN SULFIDE          | NGPTC2017240<br>3     | 4/21/2016  |                  |               |
| African<br>Intellectual<br>Property<br>Organization | DEVELOPMENT OF A NOVEL HIGH TEMPERATURE STABLE SCAVENGER FOR REMOVAL OF HYDROGEN SULFIDE          | 201700377             | 4/21/2016  |                  |               |
| Saudi Arabia                                        | DEVELOPMENT OF A NOVEL HIGH TEMPERATURE STABLE SCAVENGER FOR REMOVAL OF HYDROGEN SULFIDE          | 517390146             | 4/21/2016  |                  |               |

| Country Name | TITLE                                                                                    | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|--------------|------------------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
|              | DEVELOPMENT OF A NOVEL HIGH TEMPERATURE STABLE SCAVENGER FOR REMOVAL OF HYDROGEN SULFIDE | 16358445           | 3/19/2019  |               |            |
|              | DEVELOPMENT OF A NOVEL HIGH TEMPERATURE STABLE SCAVENGER FOR REMOVAL OF HYDROGEN SULFIDE | 15135088           | 4/21/2016  | 10308886      | 6/4/2019   |
| Yemen        | DEVELOPMENT OF A NOVEL HIGH TEMPERATURE STABLE SCAVENGER FOR REMOVAL OF HYDROGEN SULFIDE | 8922016            | 4/20/2016  |               |            |
|              | METHOD AND COMPOSITION FOR PREVENTING CORROSION OF METAL SURFACES                        | 117826644          | 11/8/2011  | 2638186       | 3/4/2020   |
|              | METHOD AND COMPOSITION FOR PREVENTING CORROSION OF METAL SURFACES                        | 117826644          | 11/8/2011  | 2638186       | 3/4/2020   |
|              | METHOD AND COMPOSITION FOR PREVENTING CORROSION OF METAL SURFACES                        | 117826644          | 11/8/2011  | 2638186       | 3/4/2020   |
|              | METHOD AND COMPOSITION FOR PREVENTING CORROSION OF METAL SURFACES                        | 117826644          | 11/8/2011  | 2638186       | 3/4/2020   |
|              | POLYMER EMULSIONS FOR USE IN CRUDE OIL RECOVERY                                          | 202010213964<br>X  | 7/29/2015  |               |            |
|              | SOLVENCY FOR ASPHALTENE DEPOSIT REMEDIATION OR INHIBITION                                |                    | 12/18/2018 |               |            |
|              | SOLVENCY FOR ASPHALTENE DEPOSIT REMEDIATION OR INHIBITION                                |                    | 12/18/2018 |               |            |
|              | CORROSION INHIBITOR COMPOSITIONS AND METHODS OF USING SAME                               |                    | 10/30/2018 |               |            |
|              | CORROSION INHIBITOR COMPOSITIONS AND METHODS OF USING SAME                               |                    | 10/30/2018 |               |            |

| Country Name                           | TITLE                                                                                                                                          | APPLICATION NUMBER | DATE FILED | PATENT NUMBER | GRANT DATE |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------|---------------|------------|
|                                        | CORROSION INHIBITOR COMPOSITIONS AND METHODS OF USING SAME                                                                                     |                    | 10/30/2018 |               |            |
|                                        | CORROSION INHIBITOR COMPOSITIONS AND METHODS OF USING SAME                                                                                     |                    | 10/30/2018 |               |            |
|                                        | FLUID DIVERSION COMPOSITION IN WELL STIMULATION                                                                                                |                    | 11/16/2018 |               |            |
|                                        | USE OF SILOXANE POLYMERS FOR VAPOR PRESSURE REDUCTION OF PROCESSED CRUDE OIL                                                                   |                    | 11/7/2018  |               |            |
|                                        | CONTINUOUS INVERSE EMULSION POLYMERIZATION PROCESS FOR UNIFORM POLYMER SIZE DISTRIBUTION                                                       | 62990558           | 3/17/2020  |               |            |
|                                        | COMPOSITIONS OF HETEROCYCLIC COMPOUNDS AND USES AS SULFIDOGENESIS INHIBITORS                                                                   | 62964968           | 1/23/2020  |               |            |
| GB                                     | SQUEEZE TREATMENT FOR IN SITU SCAVENGING OF HYDROGEN SULFIDE                                                                                   | 138647573          | 12/17/2013 | 2935770       | 4/8/2020   |
| NO                                     | SQUEEZE TREATMENT FOR IN SITU SCAVENGING OF HYDROGEN SULFIDE                                                                                   | 138647573          | 12/17/2013 | 2935770       | 4/8/2020   |
|                                        | ENVIRONMENTALLY FRIENDLY BIS-QUATERNARY COMPOUNDS FOR INHIBITING CORROSION AND REMOVING HYDROCARBONACEOUS DEPOSITS IN OIL AND GAS APPLICATIONS |                    |            |               |            |
| United States                          |                                                                                                                                                | 11952211           | 12/7/2007  | 7951754       | 5/31/2011  |
| World Intellectual Patent Organization | COMPOSITION FOR REMEDIATING IRON SULFIDE IN OILFIELD PRODUCTION SYSTEMS                                                                        | PCTUS2017063860    | 11/30/2017 |               |            |
| United States                          | COMPOSITION FOR REMEDIATING IRON SULFIDE IN OILFIELD PRODUCTION SYSTEMS                                                                        | 15827466           | 11/30/2017 |               |            |

| Country Name              | TITLE                                                                                                                                                                        | APPLICATION<br>NUMBER | DATE FILED | PATENT<br>NUMBER | GRANT<br>DATE |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------|------------------|---------------|
| Brazil                    | COMPOSITION FOR REMEDIATING IRON SULFIDE IN OILFIELD PRODUCTION SYSTEMS                                                                                                      | BR1120190110<br>402   | 11/30/2017 |                  |               |
| Canada                    | COMPOSITION FOR REMEDIATING IRON SULFIDE IN OILFIELD PRODUCTION SYSTEMS                                                                                                      | 3045314               | 11/30/2017 |                  |               |
| European<br>Patent Office | COMPOSITION FOR REMEDIATING IRON SULFIDE IN OILFIELD PRODUCTION SYSTEMS                                                                                                      | 178175519             | 11/30/2017 |                  |               |
| Mexico                    | COMPOSITION FOR REMEDIATING IRON SULFIDE IN OILFIELD PRODUCTION SYSTEMS                                                                                                      | MXa20190062<br>79     | 11/30/2017 |                  |               |
| United Arab<br>Emirates   | BIOCIDE COMPOSITIONS                                                                                                                                                         | 1202016               | 7/31/2014  |                  |               |
| Angola                    | BIOCIDE COMPOSITIONS                                                                                                                                                         | 3193                  | 7/31/2014  |                  |               |
| Australia                 | BIOCIDE COMPOSITIONS                                                                                                                                                         | 2014296102            | 7/31/2014  | 2014296102       | 3/15/2018     |
| Brazil                    | composição de biocida, e, método de controlar a proliferação de micróbios em um sistema usado na produção, transporte, armazenamento e separação de óleo bruto e gás natural | BR1120160021<br>665   | 7/31/2014  |                  |               |
| Canada                    | BIOCIDE COMPOSITIONS                                                                                                                                                         | 2917469               | 7/31/2014  |                  |               |
| China                     | BIOCIDE COMPOSITIONS                                                                                                                                                         | 201480043145<br>8     | 7/31/2014  |                  |               |
| Colombia                  | BIOCIDE COMPOSITIONS                                                                                                                                                         | 16006830              | 7/31/2014  |                  | 11/7/2018     |
| Ecuador                   | BIOCIDE COMPOSITIONS                                                                                                                                                         | SP20168252            | 7/31/2014  |                  |               |
|                           | BIOCIDE COMPOSITIONS                                                                                                                                                         | 148320096             | 7/31/2014  | 3027027          | 7/24/2019     |
| Indonesia                 | BIOCIDE COMPOSITIONS                                                                                                                                                         | P00201600514          | 7/31/2014  |                  |               |
| India                     | BIOCIDE COMPOSITIONS                                                                                                                                                         | 201617002359          | 7/31/2014  |                  |               |

| Country Name                                        | TITLE                | APPLICATION<br>NUMBER | DATE FILED | PATENT<br>NUMBER  | GRANT<br>DATE |
|-----------------------------------------------------|----------------------|-----------------------|------------|-------------------|---------------|
| Mexico                                              | BIOCIDE COMPOSITIONS | MXa20160013<br>98     | 7/31/2014  |                   |               |
|                                                     | BIOCIDE COMPOSITIONS | NGPTC2016169<br>3     | 7/31/2014  | NGPTC20161<br>693 | 1/23/2019     |
| New Zealand                                         | BIOCIDE COMPOSITIONS | 715848                | 7/31/2014  |                   |               |
| African<br>Intellectual<br>Property<br>Organization | BIOCIDE COMPOSITIONS | 1201600005            | 7/31/2014  | 17665             | 9/30/2016     |
| Oman                                                | BIOCIDE COMPOSITIONS | OM201600023           | 7/31/2014  |                   |               |
| Russia                                              | BIOCIDE COMPOSITIONS | 2016107385            | 7/31/2014  | 2654110           | 5/16/2018     |
| Saudi Arabia                                        | BIOCIDE COMPOSITIONS | 516370502             | 7/31/2014  | 5233              | 2/9/2017      |
| Thailand                                            | BIOCIDE COMPOSITIONS | 1601000582            | 7/31/2014  |                   |               |
| United States                                       | BIOCIDE COMPOSITIONS | 15193983              | 6/27/2016  | 9833002           | 12/5/2017     |
| United States                                       | BIOCIDE COMPOSITIONS | 14448196              | 7/31/2014  | 9374999           | 6/28/2016     |
| Viet Nam                                            | BIOCIDE COMPOSITIONS | 1201600389            | 7/31/2014  |                   |               |
|                                                     | BIOCIDE COMPOSITIONS | 201910889493<br>1     | 9/17/2019  |                   |               |