

<b>PATENT ASSIGNMENT COVER SHEET</b>
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Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT3222453

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	SECURITY INTEREST

**CONVEYING PARTY DATA**

Name	Execution Date
GLOBAL GEOPHYSICAL SERVICES, INC.	02/09/2015
GLOBAL GEOPHYSICAL SERVICES, LLC	02/09/2015
AUTOSEIS, INC.	02/09/2015
AUTOSEIS DEVELOPMENT COMPANY	02/09/2015
GGI INTERNATIONAL HOLDINGS, INC.	02/09/2015
ACCRETE MONITORING, INC.	02/09/2015
GLOBAL GEOPHYSICAL EAME, INC.	02/09/2015
GLOBAL GEOPHYSICAL (MCD), LLC	02/09/2015

**RECEIVING PARTY DATA**

<b>Name:</b>	WILMINGTON TRUST, NATIONAL ASSOCIATION, AS A COLLATERAL AGENT
<b>Street Address:</b>	50 SOUTH SIXTH STREET, SUITE 1290
<b>City:</b>	MINNEAPOLIS
<b>State/Country:</b>	MINNESOTA
<b>Postal Code:</b>	55402

**PROPERTY NUMBERS Total: 18**

Property Type	Number
Patent Number:	8427900
Patent Number:	8416640
Patent Number:	7460437
Patent Number:	6389361
Patent Number:	7127353
Patent Number:	7660201
Application Number:	13302718
Application Number:	13277178
Application Number:	13070442
Application Number:	13302009
Application Number:	13345646
Application Number:	13277189
Application Number:	13831591

**PATENT**

Property Type	Number
Application Number:	13831619
Application Number:	12550868
Application Number:	13830438
Application Number:	13831161
Application Number:	14297394

**CORRESPONDENCE DATA**

**Fax Number:** (202)887-4288

*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.*

**Phone:** 202-887-4000

**Email:** dc\_ipdocketing@akingump.com

**Correspondent Name:** DAVID C. LEE

**Address Line 1:** 1333 NEW HAMPSHIRE AVENUE, NW

**Address Line 4:** WASHINGTON, D.C. 20036

**NAME OF SUBMITTER:** KWAN KOEHLER

**SIGNATURE:** /Kwan Koehler/

**DATE SIGNED:** 02/11/2015

**Total Attachments: 11**

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**PATENT SECURITY AGREEMENT**

This PATENT SECURITY AGREEMENT (this “Patent Security Agreement”) is made this 9th day of February, 2015, by and among the Grantors listed on the signature pages hereof (collectively, jointly and severally, “Grantors” and each individually “Grantor”), and Wilmington Trust, National Association, in its capacity as collateral agent for the Secured Parties (in such capacity, together with its successors and assigns in such capacity, “Agent”).

**W I T N E S S E T H:**

WHEREAS, pursuant to that certain Second Lien Credit Agreement dated even date herewith (as amended, restated, supplemented, or otherwise modified from time to time, the “Credit Agreement”) by and among Global Geophysical Services, LLC, a Delaware limited liability company (“Parent”), Global Geophysical Services, Inc., a Delaware corporation (the “Borrower”), the Guarantors party thereto, the lenders from time to time party thereto (such lenders, together with their respective successors and assigns in such capacity, each, individually, a “Lender” and, collectively, the “Lenders”) and Agent, the Lenders have agreed to make certain financial accommodations available to Borrower from time to time pursuant to the terms and conditions thereof; and

WHEREAS, the Lenders are willing to make the financial accommodations to Borrower as provided for in the Credit Agreement, but only upon the condition, among others, that the Grantors shall have executed and delivered to Agent, for the benefit of the Secured Parties, that certain Second Lien Security Agreement, dated as of February 9, 2015 (including all annexes, exhibits or schedules thereto, as from time to time amended, restated, supplemented or otherwise modified, the “Security Agreement”); and

WHEREAS, pursuant to the Security Agreement, Grantors are required to execute and deliver to Agent, for the benefit of the Secured Parties, this Patent Security Agreement;

NOW, THEREFORE, in consideration of the premises and mutual covenants herein contained and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, each Grantor hereby agrees as follows:

1. **DEFINED TERMS.** All initially capitalized terms used but not otherwise defined herein have the meanings given to them in the Security Agreement or, if not defined therein, in the Credit Agreement.

“Intellectual Property Licenses” means, with respect to any Person (the “Specified Party”), (i) any licenses or other similar rights provided to the Specified Party in or with respect to Intellectual Property owned or controlled by any other Person, and (ii) any licenses or other similar rights provided to any other Person in or with respect to Intellectual Property owned or controlled by the Specified Party.

“Patents” means patents and patent applications (including continuations, continuations-in-part, divisional, reissues, and reexaminations), anywhere in the world.

“Patent Intellectual Property Licenses” means, with respect to any Person (the “Specified Party”), (i) any licenses or other similar rights provided to the Specified Party in or with respect to Patents owned or controlled by any other Person, and (ii) any licenses or other similar rights provided to any other Person in or with respect to Patents owned or controlled by the Specified Party.

2. GRANT OF SECURITY INTEREST IN PATENT COLLATERAL. Each Grantor hereby unconditionally grants, assigns, and pledges to Agent, for the benefit each Secured Party, to secure the Secured Obligations, a continuing security interest (referred to in this Patent Security Agreement as the “Security Interest”) in all of such Grantor’s right, title and interest in and to the following, whether now owned or hereafter acquired or arising (collectively, the “Patent Collateral”):

- (a) all of its Patents including those referred to on Schedule I;
- (b) all divisionals, continuations, continuations-in-part, reissues, reexaminations, or extensions of the foregoing; and
- (c) all products and proceeds of the foregoing, including any claim by such Grantor against third parties for past, present or future infringement of any Patent or any Patent exclusively licensed under any Intellectual Property License, including the right to receive damages, or right to receive license fees, royalties, and other compensation under any Patent Intellectual Property License.

3. SECURITY FOR SECURED OBLIGATIONS. This Patent Security Agreement and the Security Interest created hereby secures the payment and performance of the Secured Obligations, whether now existing or arising hereafter. Without limiting the generality of the foregoing, this Patent Security Agreement secures the payment of all amounts which constitute part of the Secured Obligations and would be owed by Grantors, or any of them, to Agent, the other Secured Parties or any of them, whether or not they are unenforceable or not allowable due to the existence of an Insolvency Proceeding involving any Grantor.

4. SECURITY AGREEMENT. The Security Interest granted pursuant to this Patent Security Agreement is granted in conjunction with the security interests granted to Agent, for the benefit of the Secured Parties, pursuant to the Security Agreement. Each Grantor hereby acknowledges and affirms that the rights and remedies of Agent with respect to the Security Interest in the Patent Collateral made and granted hereby are more fully set forth in the Security Agreement, the terms and provisions of which are incorporated by reference herein as if fully set forth herein. To the extent there is any inconsistency between this Patent Security Agreement and the Security Agreement, the Security Agreement shall control.

5. AUTHORIZATION TO SUPPLEMENT. If any Grantor shall obtain rights to any new patent application or issued patent or become entitled to the benefit of any patent application or patent for any divisional, continuation, continuation-in-part, reissue, or reexamination of any existing patent or patent application, the provisions of this Patent Security Agreement shall automatically apply thereto. Grantors hereby authorize Agent, at the direction of the Required Lenders, unilaterally to modify this Patent Security Agreement by amending Schedule I to

include any such new patent rights of each Grantor. Notwithstanding the foregoing, no failure to so modify this Patent Security Agreement or amend Schedule I shall in any way affect, invalidate or detract from Agent's continuing security interest in all Collateral, whether or not listed on Schedule I.

6. COUNTERPARTS. This Patent Security Agreement may be executed in any number of counterparts and by different parties on separate counterparts, each of which, when executed and delivered, shall be deemed to be an original, and all of which, when taken together, shall constitute but one and the same Patent Security Agreement. Delivery of an executed counterpart of this Patent Security Agreement by telefacsimile or other electronic method of transmission shall be equally as effective as delivery of an original executed counterpart of this Patent Security Agreement.

7. CONSTRUCTION. This Patent Security Agreement is a Loan Document. Unless the context of this Patent Security Agreement clearly requires otherwise, references to the plural include the singular, references to the singular include the plural, the terms "includes" and "including" are not limiting, and the term "or" has, except where otherwise indicated, the inclusive meaning represented by the phrase "and/or". The words "hereof", "herein", "hereby", "hereunder", and similar terms in this Patent Security Agreement refer to this Patent Security Agreement as a whole and not to any particular provision of this Patent Security Agreement. Section, subsection, clause, schedule, and exhibit references herein are to this Patent Security Agreement unless otherwise specified. Any reference in this Patent Security Agreement to any agreement, instrument, or document shall include all alterations, amendments, changes, extensions, modifications, renewals, replacements, substitutions, joinders, and supplements, thereto and thereof, as applicable (subject to any restrictions on such alterations, amendments, changes, extensions, modifications, renewals, replacements, substitutions, joinders, and supplements set forth herein). The words "asset" and "property" shall be construed to have the same meaning and effect and to refer to any and all tangible and intangible assets and properties, including cash, securities, accounts, and contract rights. Any reference herein to any Person shall be construed to include such Person's successors and assigns. Any requirement of a writing contained herein shall be satisfied by the transmission of a Record.

8. THIS AGREEMENT SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF NEW YORK. Each party hereto agrees that any action or claim arising out of, or any dispute in connection with, this Agreement, any rights, remedies, obligations, or duties hereunder, or the performance or enforcement hereof or thereof, may be brought in the courts of the State of New York or any federal court sitting therein and consents to the non-exclusive jurisdiction of such court and to service of process in any such suit being made upon such party by mail at the address specified in Section 10.01 of the Credit Agreement. Each party hereto hereby waives any objection that it may now or hereafter have to the venue of any such suit or any such court or that such suit is brought in an inconvenient court.

9. EACH PARTY HERETO WAIVES ITS RIGHT TO A JURY TRIAL WITH RESPECT TO ANY ACTION OR CLAIM ARISING OUT OF ANY DISPUTE IN CONNECTION WITH THIS AGREEMENT, ANY RIGHTS, REMEDIES, OBLIGATIONS, OR DUTIES HEREUNDER, OR THE PERFORMANCE OR ENFORCEMENT HEREOF OR

THEREOF. Except as prohibited by law, each party hereto waives any right which it may have to claim or recover in any litigation referred to in the preceding sentence any special, exemplary, punitive or consequential damages or any damages other than, or in addition to, actual damages.

10. The Agent is executing this Patent Security Agreement solely as Collateral Agent under the Credit Agreement and in connection with this Patent Security Agreement, the Agent shall have all rights, privileges, protections and immunities in favor of the Collateral Agent under the Credit Agreement.

[Signature Page Follows]

IN WITNESS WHEREOF, the parties hereto have caused this Patent Security Agreement to be executed and delivered as of the day and year first above written

GLOBAL GEOPHYSICAL SERVICES, INC.  
GLOBAL GEOPHYSICAL SERVICES, LLC  
AUTOSEIS, INC.  
AUTOSEIS DEVELOPMENT COMPANY  
GGG INTERNATIONAL HOLDINGS, INC.  
ACCRETE MONITORING, INC.  
GLOBAL GEOPHYSICAL EAME, INC.  
GLOBAL GEOPHYSICAL (MCD), LLC

By: Sean M. Gore

Name: Sean M. Gore

Title: Senior Vice President and Chief Financial  
Officer

[Signature Page to Second Lien Patent Security Agreement]

**PATENT**  
**REEL: 034941 FRAME: 0208**



**WILMINGTON TRUST, NATIONAL  
ASSOCIATION, as Collateral Agent**

By: \_\_\_\_\_

  
Name: Jeffrey L. Rose  
Title: Vice President

[Signature Page to Second Lien Patent Security Agreement]

**PATENT  
REEL: 034941 FRAME: 0209**

**SCHEDULE I**  
**TO**  
**PATENT SECURITY AGREEMENT**

Patents and Patent Applications

<u>Assignee</u>	<u>Country</u>	<u>Title</u>	<u>Application or Patent No.</u>	<u>Publication No.</u>	<u>Filing Date</u>	<u>Issue Date</u>
Global Geophysical Services, Inc.	USA	Method for Deployment of Seismic Recorder Array	8,427,900			04/23/13
Global Geophysical Services, Inc.	USA	Methods for Optimizing Offset Distribution of Cross Spread 3-D Seismic Surveys Using Variable Shot Line Length	8,416,640			04/09/13
Global Geophysical Services, Inc.	USA	Seismic Data Processing Method and System for Migration of Seismic Data Signals Incorporating Azimuthal Variations in the Velocity	7,460,437			12/02/08
Accrete Monitoring, Inc	USA	Method for 4D Permeability Analysis of Geologic Fluid Reservoirs	6,389,361			05/14/02
Accrete Monitoring, Inc.	USA	Method and Apparatus for Imaging Permeability Pathways of Geologic Fluid Reservoirs Using Seismic Emission Tomography	7,127,353			10/24/06
Accrete Monitoring, Inc.	USA	Methods, Devices, and Components for Securing or Coupling Geophysical Sensors	13/302,718	Not published	11/22/11	

<u>Assignee</u>	<u>Country</u>	<u>Title</u>	<u>Application or Patent No.</u>	<u>Publication No.</u>	<u>Filing Date</u>	<u>Issue Date</u>
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Accrete Monitoring, Inc	USA	Method for Imaging Microseismic Events Using an Azimuthally-Dependent Focal Mechanism	13/277,178	2013/0100770	10/01/11	
Accrete Monitoring, Inc.	USA	Fracture Imaging Methods Employing Skeletonization of Seismic Emission Tomography	13/070,442	2012/0243368	03/23/11	
Accrete Monitoring, Inc.	USA	Using a Drill Bit as a Seismic Source for SET Velocity Analysis	13/302,009	2013/0128693	11/22/11	
Accrete Monitoring, Inc	USA	Tomographic Imaging of Fracture-Fault Permeability Zones during Drilling Operations	13/345,646	2013/0128694	01/06/12	
Accrete Monitoring, Inc	USA	Microseismic Data Acquisition Array and Corresponding Method	13/277,189	2013/0100769	10/19/11	
Accrete Monitoring, Inc	USA	Methods, Systems and Devices for Near-Well Fracture Monitoring Using Tomographic Fracture Imaging Techniques	13/831,591	2013/0201787	03/15/13	
Accrete Monitoring, Inc	USA	Method for Assessing the Effectiveness of Modifying Transmissive Networks of Natural Reservoirs	13/831,619	2013/0215712	03/15/13	

<u>Assignee</u>	<u>Country</u>	<u>Title</u>	<u>Application or Patent No.</u>	<u>Publication No.</u>	<u>Filing Date</u>	<u>Issue Date</u>
Accrete Monitoring, Inc	Canada	Method for 4D Permeability Analysis of Geologic Fluid Reservoirs	CA 2347435			07/31/2007
Accrete Monitoring, Inc	Canada	Method and Apparatus for Imaging Permeability Pathways of Geologic Fluid Reservoirs Using Seismic Emission Tomography	CA 2620819		08/26/2005	
Accrete Monitoring, Inc	Mexico	Fracture Imaging Methods Employing Skeletonization of Seismic Emission Tomography	MX/a/2012/03553		02/07/2012	
AutoSeis, Inc.	USA	Autonomous Seismic Data Acquisition Unit	7,660,201			02/09/10
AutoSeis, Inc.	USA	System and Method for Deployment of Seismic Data Recorders	12/550868	2011/0051550	08/31/09	
AutoSeis, Inc.	USA	Operational Mode Switching in a Seismic Data Acquisition Module via Supply Voltage Polarization	13/830,438	2014/0092707	03/14/13	
AutoSeis, Inc.	USA	Seismic Data Acquisition Module with Broadband Antenna, and Corresponding Systems, Devices, Components and Methods	13/831,161	2014/0091967	03/14/13	
Accrete Monitoring,	USA	Method for Subsurface Mapping Using	14/297,394		06/05/2014	

<u>Assignee</u>	<u>Country</u>	<u>Title</u>	<u>Application or Patent No.</u>	<u>Publication No.</u>	<u>Filing Date</u>	<u>Issue Date</u>
Inc		Seismic Emissions				
AutoSeis, Inc.	USA	PCT application based on U.S. application 13/831,161	PCT/US 13/00226			