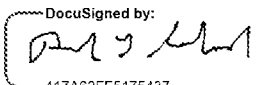


PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT4140935

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
RAYMOND LOUIS GRADWOHL	11/09/2016
JACQUES GAGNE	11/11/2016
RECEIVING PARTY DATA	
Name:	X DEVELOPMENT LLC
Street Address:	1600 AMPHITHEATRE PARKWAY
City:	MOUNTAIN VIEW
State/Country:	CALIFORNIA
Postal Code:	94043
PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	15348343
CORRESPONDENCE DATA	
Fax Number:	(908)654-0415
<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>	
Phone:	(908) 518-6379
Email:	assignment@lernerdavid.com
Correspondent Name:	LDLK&M
Address Line 1:	600 SOUTH AVENUE WEST
Address Line 4:	WESTFIELD, NEW JERSEY 07090
ATTORNEY DOCKET NUMBER:	ATOZX 3.0F-016 CIP
NAME OF SUBMITTER:	MELINDA C. CORMIER
SIGNATURE:	/Melinda C. Cormier/
DATE SIGNED:	11/14/2016
Total Attachments: 2	
source=ATOZX 3.0F-016 CIP(7023) Assignments#page1.tif	
source=ATOZX 3.0F-016 CIP(7023) Assignments#page2.tif	

ASSIGNMENT OF PATENT APPLICATION	Docket Number (Optional) ATOZX 3.0F-016 CIP
<p>WHEREAS, I, <u>Raymond Louis Gradwohl</u> of <u>Saratoga, California</u>, have invented or discovered inventions or discoveries, the subject matter of which is described in the patent application entitled "SYSTEMS AND METHODS FOR COUPLING AND DECOUPLING DRILL HEADS FOR GROUND LOOP PREPARATION FOR GEOTHERMAL APPLICATIONS" (hereafter "Patent Application"),</p> <p><input type="checkbox"/> WHEREAS (if the left box is checked), the Patent Application was filed with the U.S. Patent and Trademark Office on _____, Application Number _____, and</p> <p><input checked="" type="checkbox"/> WHEREAS (if the left box is checked), the Patent Application names the following inventors: <u>Raymond Louis Gradwohl and Jacques Gagne</u> (and whereas I hereby authorize Lerner, David, Littenberg, Krumholz & Mentik, LLP, to insert in here in brackets [Application No. <u>15/348,343</u>, filed on <u>11/10/16</u>] the application number and filing date of the application when known), and</p> <p>WHEREAS, <u>X Development LLC</u>, incorporated or otherwise formed in <u>Delaware</u> and having a place of business at <u>1600 Amphitheatre Parkway; Mountain View, California 94043</u> (hereafter, the "assignee") is desirous of acquiring, or has acquired and is desirous of memorializing its acquisition further herein, the entire right, title and interest in same;</p> <p>NOW, THEREFORE, for good and valuable consideration the receipt of which is hereby acknowledged, I agree as follows. I agree to assign, and hereby do assign, to the assignee my entire right, title and interest in and to the Assigned Applications in the United States of America and all other countries, where "Assigned Applications" means the Patent Application, including any and all inventions, discoveries and other subject matter described therein, any divisional, continuation, continuation-in-part, substitute, reissue, re-examination or other application claiming priority or benefit to the Patent Application pursuant to any law or treaty, and any patent issuing from the foregoing. I agree to assign, and hereby do assign, to assignee the right to claim such priority or benefit. I have not previously conveyed, nor am I aware of an obligation to convey, my rights in the Assigned Applications to a third party. I hereby authorize the U.S. Patent and Trademark Office, and any other governmental agency in the world, to issue to assignee all patents resulting from the Assigned Applications and to record assignee's ownership thereof. At assignee's reasonable request I agree, without further remuneration, to execute and deliver documents prepared at assignee's expense and to provide other cooperation, such as testimony, as may be reasonably required to evidence or protect assignee's rights in the Assigned Applications. Assignee may assign or transfer all or part of its rights set forth herein in its sole discretion. I agree that the assignee may affix its signature to this document as well as any other indicia of its acceptance of the provisions hereof. If any provision herein is unenforceable, the requirements of the provision shall remain to the full extent permissible by law and the offending portions thereof shall be deemed replaced, to the extent possible, with a provision most closely reflecting the purpose of the offending provision.</p> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="text-align: center;"> <p>11/9/2016</p> <hr style="width: 20%; margin: 5px auto;"/> <p>(Date)</p> </div> <div style="text-align: center;"> <p>DocuSigned by:</p>  <hr style="width: 20%; margin: 5px auto;"/> <p>417A62FF5475437...</p> <p>(Signature)</p> </div> </div>	

ASSIGNMENT OF PATENT APPLICATION

Docket Number (Optional)

ATOZX 3.0F-016 CIP

WHEREAS, I, Jacques Gagne of Los Gatos, California, have invented or discovered inventions or discoveries, the subject matter of which is described in the patent application entitled "SYSTEMS AND METHODS FOR COUPLING AND DECOUPLING DRILL HEADS FOR GROUND LOOP PREPARATION FOR GEOTHERMAL APPLICATIONS" (hereafter "Patent Application"),

☐ WHEREAS (if the left box is checked), the Patent Application was filed with the U.S. Patent and Trademark Office on _____, Application Number _____, and

☒ WHEREAS (if the left box is checked), the Patent Application names the following inventors: Raymond Louis Gradwohl and Jacques Gagne (and whereas I hereby authorize Lerner, David, Littenberg, Krumholz & Mentlik, LLP, to insert in here in brackets [Application No. 15/348,343, filed on 11/10/16] the application number and filing date of the application when known), and

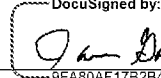
WHEREAS, X Development LLC, incorporated or otherwise formed in Delaware and having a place of business at 1600 Amphitheatre Parkway, Mountain View, California 94043 (hereafter, the "assignee") is desirous of acquiring, or has acquired and is desirous of memorializing its acquisition further herein, the entire right, title and interest in same;

NOW, THEREFORE, for good and valuable consideration the receipt of which is hereby acknowledged, I agree as follows. I agree to assign, and hereby do assign, to the assignee my entire right, title and interest in and to the Assigned Applications in the United States of America and all other countries, where "Assigned Applications" means the Patent Application, including any and all inventions, discoveries and other subject matter described therein, any divisional, continuation, continuation-in-part, substitute, reissue, re-examination or other application claiming priority or benefit to the Patent Application pursuant to any law or treaty, and any patent issuing from the foregoing. I agree to assign, and hereby do assign, to assignee the right to claim such priority or benefit. I have not previously conveyed, nor am I aware of an obligation to convey, my rights in the Assigned Applications to a third party. I hereby authorize the U.S. Patent and Trademark Office, and any other governmental agency in the world, to issue to assignee all patents resulting from the Assigned Applications and to record assignee's ownership thereof. At assignee's reasonable request I agree, without further remuneration, to execute and deliver documents prepared at assignee's expense and to provide other cooperation, such as testimony, as may be reasonably required to evidence or protect assignee's rights in the Assigned Applications. Assignee may assign or transfer all or part of its rights set forth herein in its sole discretion. I agree that the assignee may affix its signature to this document as well as any other indicia of its acceptance of the provisions hereof. If any provision herein is unenforceable, the requirements of the provision shall remain to the full extent permissible by law and the offending portions thereof shall be deemed replaced, to the extent possible, with a provision most closely reflecting the purpose of the offending provision.

11/11/2016

(Date)

DocuSigned by:



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(Signature)