

PATENT ASSIGNMENT

Electronic Version v1.1

Stylesheet Version v1.1

| SUBMISSION TYPE:                                                                                                                                                                                                                                                                         | NEW ASSIGNMENT                |               |                               |                     |               |                      |             |                |            |              |            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------|-------------------------------|---------------------|---------------|----------------------|-------------|----------------|------------|--------------|------------|
| NATURE OF CONVEYANCE:                                                                                                                                                                                                                                                                    | ASSIGNMENT                    |               |                               |                     |               |                      |             |                |            |              |            |
| CONVEYING PARTY DATA                                                                                                                                                                                                                                                                     |                               |               |                               |                     |               |                      |             |                |            |              |            |
| <table border="1"><thead><tr><th>Name</th><th>Execution Date</th></tr></thead><tbody><tr><td>Phillip B. West</td><td>06/11/2007</td></tr><tr><td>Stephen R. Novascone</td><td>06/12/2007</td></tr><tr><td>Jerry Wright</td><td>07/10/2007</td></tr></tbody></table>                      |                               | Name          | Execution Date                | Phillip B. West     | 06/11/2007    | Stephen R. Novascone | 06/12/2007  | Jerry Wright   | 07/10/2007 |              |            |
| Name                                                                                                                                                                                                                                                                                     | Execution Date                |               |                               |                     |               |                      |             |                |            |              |            |
| Phillip B. West                                                                                                                                                                                                                                                                          | 06/11/2007                    |               |                               |                     |               |                      |             |                |            |              |            |
| Stephen R. Novascone                                                                                                                                                                                                                                                                     | 06/12/2007                    |               |                               |                     |               |                      |             |                |            |              |            |
| Jerry Wright                                                                                                                                                                                                                                                                             | 07/10/2007                    |               |                               |                     |               |                      |             |                |            |              |            |
| RECEIVING PARTY DATA                                                                                                                                                                                                                                                                     |                               |               |                               |                     |               |                      |             |                |            |              |            |
| <table border="1"><tr><td>Name:</td><td>Battelle Energy Alliance, LLC</td></tr><tr><td>Street Address:</td><td>P.O. Box 1625</td></tr><tr><td>City:</td><td>Idaho Falls</td></tr><tr><td>State/Country:</td><td>IDAHO</td></tr><tr><td>Postal Code:</td><td>83415-3899</td></tr></table> |                               | Name:         | Battelle Energy Alliance, LLC | Street Address:     | P.O. Box 1625 | City:                | Idaho Falls | State/Country: | IDAHO      | Postal Code: | 83415-3899 |
| Name:                                                                                                                                                                                                                                                                                    | Battelle Energy Alliance, LLC |               |                               |                     |               |                      |             |                |            |              |            |
| Street Address:                                                                                                                                                                                                                                                                          | P.O. Box 1625                 |               |                               |                     |               |                      |             |                |            |              |            |
| City:                                                                                                                                                                                                                                                                                    | Idaho Falls                   |               |                               |                     |               |                      |             |                |            |              |            |
| State/Country:                                                                                                                                                                                                                                                                           | IDAHO                         |               |                               |                     |               |                      |             |                |            |              |            |
| Postal Code:                                                                                                                                                                                                                                                                             | 83415-3899                    |               |                               |                     |               |                      |             |                |            |              |            |
| PROPERTY NUMBERS Total: 1                                                                                                                                                                                                                                                                |                               |               |                               |                     |               |                      |             |                |            |              |            |
| <table border="1"><thead><tr><th>Property Type</th><th>Number</th></tr></thead><tbody><tr><td>Application Number:</td><td>11778300</td></tr></tbody></table>                                                                                                                             |                               | Property Type | Number                        | Application Number: | 11778300      |                      |             |                |            |              |            |
| Property Type                                                                                                                                                                                                                                                                            | Number                        |               |                               |                     |               |                      |             |                |            |              |            |
| Application Number:                                                                                                                                                                                                                                                                      | 11778300                      |               |                               |                     |               |                      |             |                |            |              |            |
| CORRESPONDENCE DATA                                                                                                                                                                                                                                                                      |                               |               |                               |                     |               |                      |             |                |            |              |            |
| Fax Number: (208)526-8339<br><i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i>                                                                                                                                                                        |                               |               |                               |                     |               |                      |             |                |            |              |            |
| Phone: 208/526-1371                                                                                                                                                                                                                                                                      |                               |               |                               |                     |               |                      |             |                |            |              |            |
| Email: janine.lopez@inl.gov                                                                                                                                                                                                                                                              |                               |               |                               |                     |               |                      |             |                |            |              |            |
| Correspondent Name: Alan D. Kirsch                                                                                                                                                                                                                                                       |                               |               |                               |                     |               |                      |             |                |            |              |            |
| Address Line 1: P.O. Box 1625                                                                                                                                                                                                                                                            |                               |               |                               |                     |               |                      |             |                |            |              |            |
| Address Line 4: Idaho Falls, IDAHO 83415-3899                                                                                                                                                                                                                                            |                               |               |                               |                     |               |                      |             |                |            |              |            |
| ATTORNEY DOCKET NUMBER:                                                                                                                                                                                                                                                                  | BA-144                        |               |                               |                     |               |                      |             |                |            |              |            |
| NAME OF SUBMITTER:                                                                                                                                                                                                                                                                       | Alan D. Kirsch                |               |                               |                     |               |                      |             |                |            |              |            |
| Total Attachments: 5<br>source=BA-144ElectronicAssignment#page1.tif<br>source=BA-144ElectronicAssignment#page2.tif                                                                                                                                                                       |                               |               |                               |                     |               |                      |             |                |            |              |            |

CH \$40.00 11778300

500315201

PATENT  
REEL: 019561 FRAME: 0106

source=BA-144ElectronicAssignment#page3.tif

source=BA-144ElectronicAssignment#page4.tif

source=BA-144ElectronicAssignment#page5.tif

# ASSIGNMENT

**FOR GOOD AND VALUABLE CONSIDERATION**, the receipt, sufficiency and adequacy of which are hereby acknowledged, each undersigned ASSIGNOR does:

**SELL, ASSIGN AND TRANSFER** to Battelle Energy Alliance, LLC (BEA) a Delaware limited liability company, having a principal place of business at 2525 Fremont Avenue, Idaho Falls, Idaho 83415, the entire right, title and interest for the United States and all foreign countries and jurisdictions in any and all inventions and improvements which are disclosed in the Application for United States Letters Patent, Attorney Docket No. BA-144, entitled EARTH ANALYSIS METHODS, SUBSURFACE FEATURE DETECTION METHODS, EARTH ANALYSIS DEVICES, AND ARTICLES OF MANUFACTURE, such application filed on 16 July 2007 and assigned Serial No. 11/778,300, such application and all divisionals, continuations, substitutes, renewals, reissues, reexaminations, and all other applications for patent or the legal equivalent thereof which have been or may be filed in the United States and all foreign countries and jurisdictions relating to any of such inventions and improvements; all original, reexamined and reissued patents which have been or shall be issued in the United States and all foreign countries and jurisdictions on such inventions and improvements; and specifically including the right to file foreign applications under the provisions of any convention or treaty and claim priority based on such application made in the United States;

**AUTHORIZE** BEA to apply for and receive any and all United States and foreign patents relating to such inventions and improvements in its own name;

**AUTHORIZE AND REQUEST** the issuing authority to issue any and all United States and foreign patents granted on such inventions and improvements in the name of BEA;

**REPRESENT** that no assignment, grant, mortgage, license or other agreement or encumbrance inconsistent with the rights and property conveyed by this assignment has been or will be made or entered into by the undersigned, and that the full right to convey the same is possessed by the undersigned, subject to any and all rights retained by the United States Government;

**COVENANT** to carry out in good faith the intent and purpose of this assignment, to execute all divisionals, continuations, substitutes, renewals, reissues, reexaminations, and all other patent applications relating to any and all such inventions and improvements; to execute all rightful oaths, declarations, assignments, powers of attorney and other papers; to communicate to BEA all facts and provide to BEA all documents and things known and accessible to the undersigned relating to such inventions and improvements and the history thereof, and testify as to the same in any interference, litigation or other proceeding relating thereto; and generally to do everything possible which BEA shall consider desirable for vesting title to such inventions and improvements in BEA, and to secure, maintain, defend and enforce valid and enforceable patent protection for such inventions and improvements; at the request of BEA and upon prior

written arrangement, BEA may reimburse the undersigned for any burdensome expenses in carrying out the above covenants;

**AGREE AND ACKNOWLEDGE** that the **SALE, ASSIGNMENT AND TRANSFER** of rights and property set forth herein is and shall be **IRREVOCABLE** and **BINDING** upon the heirs, assigns, representatives and successors of each undersigned **ASSIGNOR** and **EXTEND** to the successors, assigns and nominees of **BEA**.

**AUTHORIZE AND DIRECT** any of the attorneys associated with Customer Number 000004347 to insert the serial number and filing date of the application now identified by the attorney docket number and title set forth above as soon as the same shall have been made known to them by the United States Patent and Trademark Office.

## ASSIGNORS:

Printed Name: Phillip B. West  
Residing at: Idaho Falls, ID

Date Jan 1 2022

  
Printed Name: Stephen R. Novascone  
Residing at: Idaho Falls, ID

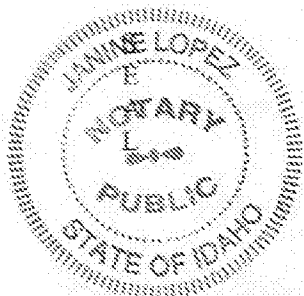
Date 11/11/2017

Printed Name: Jerry P. Wright  
Residing at: Idaho Falls, ID

Date \_\_\_\_\_

State of Idaho )  
S.S.  
County of Bonneville )

On this 11 day of June, 2007, before me personally appeared Phillip B. West, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same.

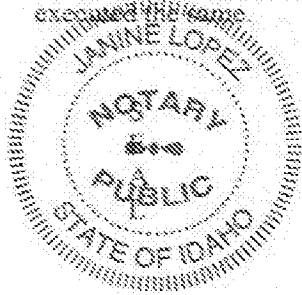


Notary Public

My commission expires on 10/14/2011

State of Idaho )  
S.S.  
County of Bonneville )

On this 12 day of June, 2007, before me personally appeared Stephen R. Novascone, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same.



*Jamine Lopez*  
Notary Public

My commission expires on 10/14/2011

State of Idaho )  
S.S.  
County of Bonneville )

On this \_\_\_\_\_ day of June, 2007, before me personally appeared Jerry P. Wright, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same.

S  
E  
A  
L

\_\_\_\_\_  
Notary Public

My commission expires on \_\_\_\_\_

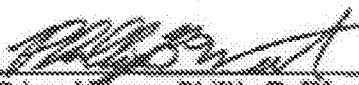
BEA Docket No. BA-144

written arrangement, BEA may reimburse the undersigned for any burdensome expenses in carrying out the above covenants;

AGREE AND ACKNOWLEDGE that the SALE, ASSIGNMENT AND TRANSFER of rights and property set forth herein is and shall be IRREVOCABLE and BINDING upon the heirs, assigns, representatives and successors of each undersigned ASSIGNOR and EXTEND to the successors, assigns and nominees of BEA.

AUTHORIZE AND DIRECT any of the attorneys associated with Customer Number 000004347 to insert the serial number and filing date of the application now identified by the attorney docket number and title set forth above as soon as the same shall have been made known to them by the United States Patent and Trademark Office.

## ASSIGNORS:

  
Printed Name: Phillip B. West  
Residing at: Idaho Falls, ID

Date June 11 2007

Printed Name: Stephen R. Novascone  
Residing at: Idaho Falls, ID

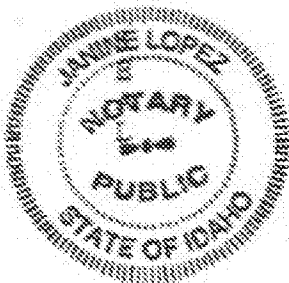
Date \_\_\_\_\_

  
Printed Name: Jerry P. Wright  
Residing at: Idaho Falls, ID

Date 10 July 2007

State of Idaho )  
S.S.  
County of Bonneville )

On this 11 day of June, 2007, before me personally appeared Phillip B. West, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same.



  
Notary Public

My commission expires on 10/14/2011

BEA Docket No. BA-144

State of Idaho )

S.S.

County of Bonneville )

On this \_\_\_\_\_ day of June, 2007, before me personally appeared Stephen R. Novasscone, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same.

S  
E  
A  
L\_\_\_\_\_  
Notary Public

My commission expires on \_\_\_\_\_

State of ~~Idaho~~ UTAH )

S.S.

County of ~~Bonneville~~ SALT LAKE )

On this 10<sup>th</sup> day of July, 2007, before me personally appeared Jerry P. Wright, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same.

S  
E  
A  
L\_\_\_\_\_  
Notary PublicMy commission expires on 02/06/2009