

PATENT ASSIGNMENT

Electronic Version v1.1

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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>Charles R. Landis</td> <td>04/30/2013</td> </tr> <tr> <td>Thomas S. Cortner</td> <td>04/18/2013</td> </tr> <tr> <td>Eric B. Frantz</td> <td>04/18/2013</td> </tr> </tbody> </table>		Name	Execution Date	Charles R. Landis	04/30/2013	Thomas S. Cortner	04/18/2013	Eric B. Frantz	04/18/2013		
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RECEIVING PARTY DATA											
<table border="1"> <tr> <td>Name:</td> <td>Halliburton Energy Services, Inc.</td> </tr> <tr> <td>Street Address:</td> <td>10200 Bellaire Boulevard</td> </tr> <tr> <td>City:</td> <td>Houston</td> </tr> <tr> <td>State/Country:</td> <td>TEXAS</td> </tr> <tr> <td>Postal Code:</td> <td>77072</td> </tr> </table>		Name:	Halliburton Energy Services, Inc.	Street Address:	10200 Bellaire Boulevard	City:	Houston	State/Country:	TEXAS	Postal Code:	77072
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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>13873471</td> </tr> </tbody> </table>		Property Type	Number	Application Number:	13873471						
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Application Number:	13873471										
CORRESPONDENCE DATA											
Fax Number:	2027568087										
<i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i>											
Phone:	202 756 8000										
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ATTORNEY DOCKET NUMBER:	091721-0082										
NAME OF SUBMITTER:	Debbie Allen										
Signature:	/Debbie Allen/										

Date:	04/30/2013
	This document serves as an Oath/Declaration (37 CFR 1.63).
<p>Total Attachments: 6 source=0917210082DeclAssign#page1.tif source=0917210082DeclAssign#page2.tif source=0917210082DeclAssign#page3.tif source=0917210082DeclAssign#page4.tif source=0917210082DeclAssign#page5.tif source=0917210082DeclAssign#page6.tif</p>	

DECLARATION AND ASSIGNMENT

As the below named inventor, I hereby declare that:

This declaration is directed to:

- The attached application to be filed as a United States application or PCT international application, or
- United States application or PCT international application number _____ filed on _____; and,

entitled "METHODS FOR STRENGTHENING SMECTITE SHALE IN HIGHWALL MINES."

Regarding that application, I declare the following:

- The above-identified application was made, or authorized to be made, by me.
- I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.
- I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.
- I have reviewed and understand the subject matter of the above-identified application, including the claims.
- I am aware of and acknowledge my duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability under 37 CFR 1.56; including, for continuation-in-part applications, material information that became available between the filing of the prior application and the filing of the continuation-in-part application.

Moreover, Whereas, HALLIBURTON ENERGY SERVICES, INC., a Delaware Corporation, having a place of business at 10200 Bellaire Boulevard, Houston, TX 77072 (hereinafter "Assignee") is desirous of acquiring an interest therein;

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, We, by these presents do sell, assign and transfer and convey unto Assignee, its successors and assigns, the full and exclusive right, for the United States of America and its territorial possessions and for any and all foreign countries, in and to the said invention, described in the Patent Application identified above, and any divisional, continuing or reissue application based on the present application preparatory to obtaining Letters Patent

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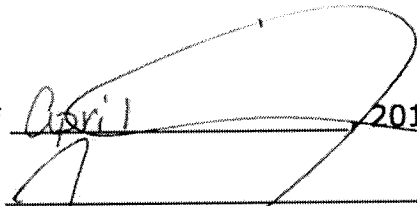
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of the United States therefore; said invention, application and any and all Letters Patent issuing there from to be held and enjoyed by Assignee, for its own use and benefit, and for its legal representatives, successors and assigns, to the full end of the term for which said Letters Patent may be granted, as fully and entirely as the same would have been held by me and had this assignment and sale not been made.

And I do further agree to sign all papers, make all rightful oaths and do all requisite acts for the filing of any disclaimer or for the filing and assignment of any divisional, continuing or reissue application or applications for patent based on the present application, as well as for any other U.S. or foreign application for patent which relates to the said invention.

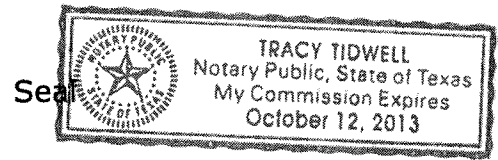
And I do further agree to communicate to Assignee, its successors, assign or other legal representatives, such facts relating to the invention disclosed in the present application or Letters Patent issuing thereon as may be known to me, and to testify as to such facts in any interference or other litigation.

Executed this 18th day of April 2013


THOMAS S. CORTNER

STATE OF)
)
COUNTY OF)

Before me personally appeared said THOMAS S. CORTNER and acknowledged the foregoing instrument to be a free act and deed this 18th day of April, 2013.





(Notary)

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