PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2

EPAS ID: PAT4116495

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
JEFFREY G. THOMAS	04/15/2016
GARRETT T. OLSEN	01/21/2016
GRANT O. COOK III	08/20/2015
DANIEL BRENDAN VOGLEWEDE	02/08/2016
YI PAN	08/20/2015

RECEIVING PARTY DATA

Name:	HALLIBURTON ENERGY SERVICES, INC.
Street Address:	3000 N. SAM HOUSTON PARKWAY E.
City:	HOUSON
State/Country:	TEXAS
Postal Code:	77032-3219

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15307145

CORRESPONDENCE DATA

Fax Number: (202)756-8087

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: 202 756 8000

Email: mweipdocket@mwe.com, ipdockethouston@mwe.com

MCDERMOTT WILL & EMERY LLP **Correspondent Name:** Address Line 1: THE MCDERMOTT BUILDING

Address Line 2: 500 NORTH CAPITOL STREET, N.W.

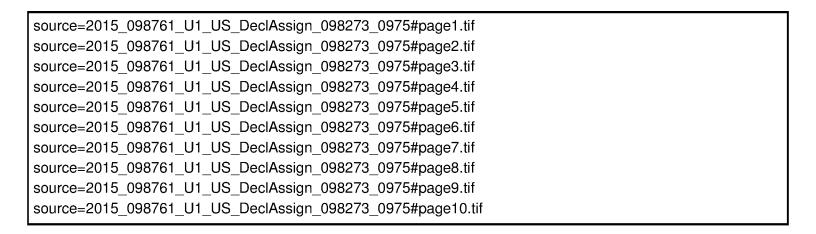
Address Line 4: WASHINGTON, D.C. 20001

ATTORNEY DOCKET NUMBER:	098273-0975
NAME OF SUBMITTER:	IONA N. KAISER
SIGNATURE:	/lona N. Kaiser/
DATE SIGNED:	10/27/2016

Total Attachments: 10

PATENT REEL: 040150 FRAME: 0287

504069829



PATENT REEL: 040150 FRAME: 0288

As the below named inventor, I hereby declare that:				
This c	declaration is directed to:			
	The attached application to be filed as a United States application or PCT			
	international application, or			
\boxtimes	United States application or PCT international application number			
	62/163,207 filed on May 18, 2015; and,			
Entitled:				
METHODS	S OF REMOVING SHOULDER POWDER FROM FIXED CUTTER BITS			

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.

Moreover, Whereas, HALLIBURTON ENERGY SERVICES, INC., a Delaware Corporation, having a place of business at 3000 N. Sam Houston Parkway E., Houston, TX 77032-3219 (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, I, 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 national phase, divisional, continuing, continuation-in-part, or reissue application based on the present application preparatory to obtaining Letters Patent 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.

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.

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 patent office proceeding or litigation.

I do further grant the power to amend the following information on this document: the title of the application and the filing designation (attached or by reference to an application number) as required by or in view of any rules or requirements of the United States Patent and Trademark Office or any other patent regulatory authority.

Executed this 15 day of April

JEFFREY G. THOMAS

STATE OF

TEXAS

COUNTY OF

MONTGONERY

Before me personally appeared said JEFFREY G. THOMAS and acknowledged the foregoing instrument to be a free act and deed this 5 day of APLL, 2016.

(Notary)

As the below named inventor, I hereby declare that:			
Thi	s declaration is directed to:		
	The attached application to be filed as a United States application or PCT		
	international application, or		
\boxtimes	United States application or PCT international application number		
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Entitled:			
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Executed this	2135	_day of _	JANUARY	, 2016	
			RATIO	•	
		G	ARRETT T. OLS	EN	M3-3
STATE OF) TE	4AS		

COUNTY OF) MONTGOMERY

Before me personally appeared said GARRETT T. OLSEN and acknowledged the foregoing instrument to be a free act and deed this 2 day of JAWAY, 2016.



(Notacy)

F	is the	below named inventor, I nereby declare that:
٦	This de	eclaration is directed to:
		The attached application to be filed as a United States application or PCT
		international application, or
	\boxtimes	United States application or PCT international application number
		62/163,207 filed on May 18, 2015; and,
Entitled	:	
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Executed this 20th day of August, 2015

GRANT O COOK III

STATE OF TEXAS)
COUNTY OF Montgomey)

Before me personally appeared said GRANT O. COOK III and acknowledged the foregoing instrument to be a free act and deed this 200 day of August, 2015.

ELIZABETH BREWER Notary Public, State of Texas My Commission Expires May 04, 2019

	As the below named inventor, I hereby declare that:				
	This d	eclaration is directed to:			
		The attached application to be filed as a United States application or PCT			
		international application, or			
	\boxtimes	United States application or PCT international application number			
		62/163,207 filed on May 18, 2015; and,			
Entitle	ed:				
MET	HODS	OF REMOVING SHOULDER POWDER FROM FIXED CUTTER BITS			

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I do further grant the power to amend the following information on this document: the title of the application and the filing designation (attached or by reference to an application number) as required by or in view of any rules or requirements of the United States Patent and Trademark Office or any other patent regulatory authority.

Executed this&	day of February , 2016
	DANIEL BRENDAN VOGLEWEDE
STATE OF) TEXAS
COUNTY OF) MONTGO MERY

Before me personally appeared said DANIEL BRENDAN VOGLEWEDE and acknowledged the foregoing instrument to be a free act and deed this $\underline{\otimes}$ day of $\underline{\text{TEBWARY}}$,

2016.

(Notary)

As the below named inventor, I hereby declare that:			
This d	leclaration is directed to:		
	The attached application to be filed as a United States application or PCT		
	international application, or		
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Executed this	- uuv u	August	, 2015
		n	
		I PAN	

STATE OF TEXAS)
COUNTY OF Montgomery

Before me personally appeared said YI PAN and acknowledged the foregoing instrument to be a free act and deed this 20 day of AVEVET, 2015.



(Notary)

2 of 2

RECORDED: 10/27/2016