IN THE UNITED STATES BANKRUPTCY COURT
WESTERN DISTRICT OF LOUISIANA

IN RE:	)	Case No. 17-50354
	)	
WRIGHT'S WELL CONTROL SERVICES, LLC,	)	Chapter 11
	)	
	)	JUDGE ROBERT SUMMERHAYS
Debtor.	)	

OBJECTION TO SECOND AMENDED DISCLOSURE STATEMENT

Oceaneering International, Inc. ("Oceaneering") files this Objection to the *"Debtor's Second Amended Disclosure Statement Dated December 18, 2017,"* ("Second Amended Disclosure Statement") filed by Wright's Well Control Services, LLC ("Debtor" or "Wright's").

In the interest of economy and efficiency, Oceaneering incorporates by reference its "Objection to Disclosure Statement" filed at Docket No. 139 (the "Original Objection") and its "Objection to Amended Disclosure Statement filed at Docket No. 155 (the "Second Objection") (collectively with this objection, this "Objection").

The Second Amended Disclosure Statement continues to suffer from the same deficiencies as the Debtor's past failed attempts to satisfy section 1125 of the Bankruptcy Code. In addition, the Debtor and David Wright recently filed pleadings in the Patent Litigation showing that Mr. Wright and the Debtor's special litigation counsel directed valuable patent rights to be assigned to Mr. Wright, individually, instead of to the rightful owner: the Debtor's Chapter 11 estate. In light of the continued failures to provide a meaningful disclosure statement and serious breaches of fiduciary duties owed to the Chapter 11 estate, the Debtor's plan should not be solicited for votes based on the Second Amended Disclosure Statement.

A. No Disclosure of Post-Petition Transfer of '725 Patent Rights

The Second Amended Disclosure Statement fails to disclose that Mr. Wright took for his own personal benefit certain property rights in U.S. Patent No. 8,435,725 (the " '725 Patent") that rightfully belong to the Debtor. This fact came to light when on December 8, 2017, the Debtor's own special patent litigation counsel filed an "Opposed Motion for Leave Under F.R.C.P. 19 to Join an Indispensable Party and File Plaintiff's Fifth Amended Complaint" in the District Court Patent Litigation (Civ. Action No. 15-1720, Doc. No. 330) (the "Joinder Motion"), a copy of which is attached hereto as **Exhibit "A."** The Joinder Motion is an attempt by Mr. Wright to bring suit on the '725 Patent in his individual capacity to recover monetary damages for himself at the expense of the Debtor's estate and creditors.

However, the Debtor's Second Amended Disclosure Statement states that the Debtor is the owner of the '725 Patent. In fact, the Debtor paid for the development and subsequent patenting of the '725 Patent. The Joinder Motion maintains that the original patentees, Jeff Dufrene and David Wright, intended to transfer all of their rights in the technology, including those in the '725 Patent, to the Debtor. However, the Joinder Motion states that, due to a clerical error, the right to sue for damages arising from infringement of the '725 Patent that occurred prior to May 2015 (the "Pre-Assignment Rights") were not transferred to the Debtor. The Joinder Motion contends the parties always intended for the Debtor to own the Pre-Assignment Rights. Assuming the Debtor's factual allegations in this regard are correct, the Pre-Assignment Rights remained with Messrs. Wright and Dufrene, individually.

Upon learning of this clerical error with the original patent assignment, the Debtor could have asked Mr. Wright, its controlling member, and Mr. Dufrene to execute a new assignment specifically transferring the Pre-Assignment Rights to the Debtor. Mr. Wright took a different path. Mr. Wright had Mr. Dufrene execute an assignment on December 7, 2017, transferring Mr.

Dufrene's interest in the Pre-Assignment Rights to Mr. Wright, individually. (Joinder Motion at Exhibit 4.) Mr. Wright now seeks to join the pending litigation as a co-plaintiff with the Debtor to assert the Pre-Assignment Claims on his own behalf.

The Pre-Assignment Rights rightfully belong to the Debtor, not to Mr. Wright. Mr. Wright appears to be using his position as the controlling member of the Debtor to acquire property rights in his own name that, according to the Debtor's own court filings, were always intended to be and should be property of the bankruptcy estate. Moreover, the Debtor's court-approved special counsel assisted Mr. Wright in acquiring the Pre-Assignment Rights in his own name, and is now seeking to represent Mr. Wright, individually, in the patent litigation while continuing to represent the Debtor in that same litigation.

The Second Amended Disclosure Statement fails to disclose the assignment of the Debtor's interest in the '725 Patent to Mr. Wright and the work that the estate's own special litigation counsel is actively engaged in to transfer estate property out of the estate in violation sections 362, 363, 549, and 1106 of the Bankruptcy Code.

B. Pre-Petition Transfer of Patent Rights

The Second Amended Disclosure Statement also fails to disclose that Patent Nos. 8,746,351 and 9,273,663 were transferred from the Debtor to Mr. Wright on March 14, 2017, eight days before the Debtor filed its Chapter 11 petition on March 22, 2017. In response to a demand letter by Oceaneering, the Debtor's bankruptcy counsel has confirmed that the Debtor will be transferring Patent Nos. 8,746,351 and 9,273,663 back to the Debtor. But in light of the post-petition transfers of the '725 Patent rights to Mr. Wright, the Debtor is engaged in a pattern of failing to disclose key details of the case and the Debtor's assets.

C. No Information Regarding Payment Terms of the Class 1 Secured Claim

The Second Amended Disclosure Statement fails to provide any detail as to proposed loan terms that the Debtor has worked out with Orinoco. We are told simply that "[t]he Midsouth Loans acquired by Orinoco will be restructured to amortize the loan in equal single monthly payments not to exceed $110,000 per month for a period of up to 72 months." (Second Amended Disclosure Statement at 10.) This statement fails to provide enough information for the plan constituents to calculate the interest over the loan term, the amortization schedule, and the balloon payment that will be due at the end of the term. The statement provides no information regarding the covenants of the newly negotiated loan.

D. Inconsistencies in Plan Terms

The Second Amended Disclosure Statement provides that Orinoco acquired the Midsouth Loans, and that the Debtor will satisfy those claims by renegotiated payment terms. However, the Plan Support Agreement attached to the Second Amended Disclosure Statement provides that Orinoco will assume the Misouth Loan, "thereby relieving Wright's of any further obligation to Midsouth." This loan assumption, according to the Plan Support Agreement, is part of Orinoco's purchase price for the Debtor's assets (excluding two unidentified pieces of equipment), and then lease back the assets to the Debtor. The sale-lease-back transaction is not consistent with the proposed plan.

The Second Amended Disclosure Statement states that the Allowed Class 1 Claim is $6,800,000, but states without explaining that an asset transfer (that is also not explained) "will significantly reduce the amount of the Midsouth Loans acquired by Orinoco making debt service going forward much less burdensome to the Reorganized Wright's. At this time the amount of the credit Wright's will receive is unknown how [sic] any credit will be a minimum of $2,000,000." (Second Amended Disclosure Statement at 20.) The meaning of this statement is

not clear. How does full allowance of the Class 1 Claim lessen the burden? Will the principal amount of the Allowed Class 1 Claim be reduced as of the Effective Date to $4,800,000? These questions are not answered by the Second Amended Disclosure Statement.

E. No Information Regarding a $300,000 Capital Infusion from NOV

The Second Amended Disclosure Statement declares that Northstar Offshore Ventures LLC ("NOV") has invested more than $300,000. What is the nature of the investment? Is it a loan that was not approved by the Court as required under section 364 of the Bankruptcy Code? Did the Debtor offer stock in exchange for the investment? Plan constituents have no way to know what conditions are attached to the $300,000 capital "infusion," and how those conditions affect the ability of the Debtor to perform under the plan.

Conclusion

The Debtor has once again failed to provide adequate information concerning basic fundamentals of the Debtor's estate, such as who owns the Debtor's patents and who will own what equipment on the plan's effective date, and how much the Debtor will pay on account of the largest secured claim in the case. More concerning, it has come to light in the last month that the Debtor and its special litigation counsel have engaged in unlawful post-petition transfers of estate property, concealed avoidable pre-petition transfers, and obtained post-petition financing without approval in violation of section 364. For these reasons and others, the Court should deny approval of the Second Amended Disclosure Statement and consider converting this case to one under Chapter 7 of the Bankruptcy Code, as discussed in the Court's Order setting a hearing on the Disclosure Statement.

Date: January 2, 2018

Respectfully submitted,

KEAN MILLER LLP

By: */s/ Wade R. Iverstine*

J. Eric Lockridge (#30159)
Wade R. Iverstine (#31793)
II City Plaza
400 Convention Street, Suite 700
Baton Rouge, Louisiana 70802
Phone: 225.387.0999
eric.lockridge@keanmiller.com
wade.iverstine@keanmiller.com
Attorneys for Oceaneering International, Inc.

Certificate of Service

I certify that on January 2, 2018, I caused a copy of the foregoing "Objection to Second Amended Disclosure Statement," to be served on Debtor through its counsel of record, the Office of the U.S. Trustee, and all other parties requesting notice via the Court's CM/ECF email noticing system.

/s/ Wade R. Iverstine

EXHIBIT A
(Joinder Motion)

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF LOUISIANA
NEW ORLEANS DIVISION

WRIGHT'S WELL CONTROL SERVICES, LLC	§	**CIVIL ACTION NO. 2:15-CV-1720**
Plaintiff,	§	**JUDGE SARAH VANCE**
	§	**MAGISTRATE JUDGE KNOWLES**
v.	§	
	§	**JURY TRIAL DEMANDED**
OCEANEERING INTERNATIONAL, INC., AND CHRISTOPHER MANCINI, INDIVIDUALLY	§	
Defendants.	§	

OPPOSED MOTION FOR LEAVE UNDER F.R.C.P. 19 TO JOIN AN INDISPENSABLE PARTY AND FILE PLAINTIFF'S FIFTH AMENDED COMPLAINT

NOW COMES Plaintiff Wright's Well Control Services, LLC ("WWCS" or "Plaintiff"), and, through undersigned counsel, respectfully requests leave of this Court, pursuant to Federal Rule of Civil Procedure 15(a)(2) and 19, to join David Wright, owner of Wright's Well Control Services, LLC, in his individual capacity, as an additional Plaintiff and to file a Fifth Amended Complaint for the reasons set forth in the Motion and the accompanying Memorandum in Support. As set forth in detail in the Memorandum, David Wright is an indispensable party and must be joined to the present litigation as a Plaintiff. Any defects in WWCS's pleadings for past infringement damages can be cured through the addition of David Wright as a Plaintiff. As a matter of law, WWCS's motion should be granted and David Wright should be added as a Plaintiff to the present suit.

DATED: December 8th, 2017

RESPECTFULLY SUBMITTED

/S/ ***TERRY B. JOSEPH***
WILLIAMS LAW GROUP, LLC
Conrad S.P. Williams, III (#14499)
Meredith R. Durham (#33112)
909 Poydras Street, Suite 1625
New Orleans, LA 70112
TEL: (985) 876-7595
FAX: (985) 876-7594
duke@williamslawgroup.org
Meredith@williamslawgroup.org

and

Guy E. Matthews (*pro hac vice*)
Texas Bar No. 13207000
Terry B. Joseph (*pro hac vice*)
Texas Bar No. 11029500
John D. Holman (*pro hac vice*)
Texas Bar No. 24082232
David M. Lodholz (*pro hac vice*)
Texas Bar No. 24070158
MATTHEWS, LAWSON, MCCUTCHEON, & JOSEPH, PLLC
2000 Bering Drive, Suite 700
Houston, Texas 77057
TEL: (713) 355-4200
FAX: (713) 355-9689
gmatthews@matthewsfirm.com
tjoseph@matthewsfirm.com
jholman@matthewsfirm.com
dlodholz@matthewsfirm.com

and

James Parkerson Roy (La. 11511)
Elwood C. Stevens, Jr. (La. 12459)
John P. Roy (La. 32048)
DOMENGEAUX WRIGHT ROY & EDWARDS LLC
556 Jefferson Street, 5th Floor
Lafayette, LA 70501
Telephone: 337-233-3033
Facsimile: 337-232-8213

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF LOUISIANA
NEW ORLEANS DIVISION

WRIGHT'S WELL CONTROL SERVICES, LLC	§	**CIVIL ACTION NO. 2:15-CV-1720**
Plaintiff,	§	**JUDGE SARAH VANCE**
	§	**MAGISTRATE JUDGE KNOWLES**
v.	§	**JURY TRIAL DEMANDED**
OCEANEERING INTERNATIONAL, INC., AND CHRISTOPHER MANCINI, INDIVIDUALLY	§	
Defendants.	§	

MEMORANDUM IN SUPPORT OF PLAINTIFF'S OPPOSED MOTION FOR LEAVE UNDER F.R.C.P. 19 TO JOIN AN INDISPENSABLE PARTY AND FILE PLAINTIFF'S FIFTH AMENDED COMPLAINT

I. INTRODUCTION

Plaintiff Wright's Well Control Services, LLC ("Plaintiff" or "WWCS") files this Opposed Motion for Leave to Add a Party and File Plaintiff's Fifth Amended Complaint[1] to request leave of this Court to join David Wright, individually as a Plaintiff, in this litigation which already includes claims for all past damages for patent infringement. Because of a recently discovered clerical error, David Wright is the owner of the right to sue for damages for the infringement of the '725 Patent prior to the assignment of the patent to WWCS. To assign the right to sue for past damages a patent assignment must expressly include language that assigns

[1] Exhibit 1, (Plaintiff's Fifth Amended Complaint). Pursuant to Local Rule 7.6, Plaintiff has attached its Fifth Amended Complaint to this Motion. Because Plaintiff's Fifth Amended Complaint contains exhibits which are confidential and/or contain trade secrets and other proprietary, commercial information, Plaintiff has also attached its Ex Parte Motion and Incorporated Memorandum for Leave to File Additional Exhibits under Seal in Support of Wright's Well Control Services, LLC's Fifth Amended Complaint to this Motion.

that right. The assignment to WWCS does not expressly assign the right to recover for past damages to WWCS. Defendant Oceaneering International, Inc. ("Oceaneering" or "Defendant"), has challenged Plaintiff's standing to bring suit for past infringement damages on the ground that the original patentees of Patent No. 8,413,725 (the "'725 Patent") did not expressly assign to Plaintiff in writing the right to past infringement damages. If leave is not granted, David right will have to file a separate lawsuit seeking these damages in a case involving largely the same issues as this case. For this reason, Plaintiff requests leave of this Court to amend the complaint to add David Wright as a Plaintiff. In support of this Motion, WWCS would show the following.

II. BACKGROUND AND FACTS

1. On April 9, 2013, the United States Patent and Trademark Office ("USPTO") issued the '725 Patent to David C. Wright and Jeffery W. Dufrene.[2]

2. U.S. Patent No. 8,413,725 entitled "SUBSEA FLUID SEPARATOR," concerns liquid/gas separators used in a subsea environment.

3. On February 11th, 2015 David Wright assigned his rights in the '725 Patent to WWCS.[3] On May 12th, 2015, Jeffrey Dufrene assigned his rights in the ''725 Patent to WWCS.[4]

4. Based on a recently discovered technical and clerical error, the assignments of the '725 Patent did not expressly assign past infringement damages to WWCS.[5]

5. Before this error was recognized, WWCS filed suit against Oceaneering on May 21st, 2015.[6] WWCS asserted a claim of past infringement damages in its Original Complaint.[7]

[2] Exhibit 2, ('725 Patent).
[3] Exhibit 3, ('725 Patent Assignments).
[4] Id.
[5] Id.
[6] D.E. #1, (Original Complaint).
[7] Id. at 28.

6. On September 28th, 2017, Oceaneering expressly argued for the first time that David Wright and Jeffrey Dufrene failed to expressly assign the right to sue for past infringement damages to WWCS.[8] This was also the first time WWCS recognized the clerical error in the assignments.

7. Jeffrey Dufrene, the co-inventor of the '725 Patent, has assigned his right to past damages to David Wright.[9]

8. Adding David Wright, individually, cures the clerical error in the previous assignments, allows for the full adjudication and recovery of damages, and will not in any way surprise or prejudice Oceaneering, nor will it cause any delay in the trial of this cause.

9. Adding David Wright, individually, also prevents the need for separate parallel litigation involving the same factual and legal issues but with damages arising from a different time period.

III. LEGAL STANDARD

"Subdivision (a) of Rule 19 categorizes those persons whose joinder is desirable from the standpoint of complete adjudication and elimination of relitigation. If there are no procedural or jurisdictional bars to joining such a party, Rule 19 requires that they be joined." *Schutten v. Shell Oil Company*, 421 F.2d 869, 873 (5th Cir. 1970). Specifically, Rule 19 (a) requires joinder if:

> (1) in the person's absence complete relief cannot be accorded among those already parties, or (2) the person claims an interest relating to the subject of the action and is so situated that the disposition of the action in the person's absence may (i) as a practical matter impair or impede the person's ability to protect that interest or (ii) leave any of the persons already parties subject to a substantial risk of incurring double, multiple, or otherwise inconsistent obligations by reasons of the claimed interest.

[8] D.E. #266-1 at 66, (Oceaneering International, Inc.'s Memorandum in Support of its Motion for Partial Summary Judgment).
[9] Exhibit 4, (Assignment on Rights).

"[W]hen an initial appraisal of the facts indicates that a possibly necessary party is absent, the burden of disputing this initial appraisal falls on the party who opposes joinder." *Pulitzer-Polster v. Pulitzer*, 784 F.2d 1305, 1309 (5th Cir. 1986) (citation omitted).

IV. ARGUMENT AND AUTHORITIES

A. This Court has Discretion to Add David Wright as a Party

When a Plaintiff does not own the rights to sue for past infringement damages, the original patentee who does own the rights may be joined to the lawsuit to cure any defect in standing. *See Hockerson-Halbertstadt, Inc. v. Nike, Inc.*, 779 F. Supp. 49 (E.D. La. 1991). Therefore, this Court has the discretion to add David Wright as a Plaintiff in order to cure the defect in standing related to past infringement.

Under Federal Rule of Civil Procedure 15(a), pleadings may be amended by leave of court. *See* Fed.R.Civ.P. 15(a). "In deciding whether to grant leave to file an amended pleading, the district court may consider such factors as undue delay, bad faith or dilatory motive on the part of the movant, repeated failure to cure deficiencies by amendments previously allowed, undue prejudice to the opposing party, and futility of amendment." *Wimm v. Jack Eckerd Corp.*, 3 F.3d 137, 139 (5th Cir. 1993). In this particular case, WWCS had not recognized the indispensability of David Wright until receipt of Oceaneering's Memorandum in Support of its Motion for Partial Summary Judgment (Doc. 266-1).[10] WWCS has been litigating with Defendant since May 21st, 2015. Not once since then has Defendant specifically argued that the

[10] D.E. #266-1 at 66, (Oceaneering International, Inc.'s Memorandum in Support of its Motion for Partial Summary Judgment) (Oceaneering argues in footnote 158 that the assignments to WWCS do not grant WWCS the right to sue for past damages and thus WWCS cannot sue for damages prior to the date of the assignments).

assignments to WWCS did not include the right to sue for past infringement damages.[11] WWCS was surprised by the standing claims raised by Defendant in their recent Motion for Summary Judgment, causing a review of the assignments. In order to resolve this issue timely, WWCS proposes amending the complaint before the close of discovery and more than four months before trial. Further, the claims already exist in the suit and the case has been proceeding based on discovery of all past damages. The only difference in the case will be adding a new Plaintiff. Thus, Defendants cannot claim that WWCS has unreasonably delayed in filing this Motion to amend which seeks to add David Wright as a Plaintiff to ensure that his claim for past infringement damages remains protected.

B. David Wright has a Constitutional Right to Sue for Past Infringement Damages

The addition of David Wright as an indispensable party will not prejudice Defendant in any manner. All of the claims asserted based on the additional party are identical to those set out in the Fourth Amended Complaint. In fact, the claim for past infringement damages was asserted in the Original Complaint filed over two years ago. Thus, Defendant has had notice of the claim for over two years. The Proposed Fifth Amended Complaint adds David Wright as an individual plaintiff and adds allegations to support his interest in this action. Because Defendant has not claimed a standing issue until recently, either it was not aware of the standing issue or it was planning to wait until the eve of trial to assert a standing issue. In either event, Defendant cannot be prejudiced by this amendment.

[11] Defendant's Answer to Plaintiff's Fourth Amended Complaint does contain as its Eighteenth Defense, a generic, boilerplate assertion of failure to join one or more indispensable parties. D.E. # 161 at 38. Unaware of the defect in the assignments, Plaintiff and David Wright reviewed this one of a litany of defenses as boilerplate and not as notice of the defective assignments.

Plaintiff also does not seek to join this additional party for purposes of delay or harassment, but so that the issues in this lawsuit may be fully and finally adjudicated in one proceeding in which all interested parties have the opportunity to participate. Under these circumstance, Rule 15(a) requires the court to "freely give leave when justice so requires." However, the circumstances surrounding this Motion go beyond "good cause" to amend; should the Court deny this Motion, David Wright may have to bring a completely separate lawsuit and also may be deprived of a constitutional right to sue for past infringement damages without due process of the law. *See* 42 U.S.C. § 1983. Both WWCS and David Wright will be prejudiced should the Court deny this Motion because without an amendment to add the proper party to sue for past damages, the rights to recover past damages may be extinguished upon trial of this case. David Wright may lose his right to recover past damages because of a clerical error that neither Oceaneering nor WWCS discovered until Oceaneering submitted the Memorandum in Support of its Motion for Partial Summary Judgment (Doc. 266-1). If Oceaneering did discover the error earlier, it must have purposely postponed notifying WWCS of its discovery until the eve of trial in order to blindside WWCS and avoid liability for past damages. David Wright must be added as a Plaintiff so that justice can be done. Should this Motion be denied David Wright will be forced to file a separate lawsuit, an efficient use of the precious time and resources of this Court. This separate lawsuit would have nearly identical claim construction, discovery, and arguments making it more efficient to have just one lawsuit.

C. David Wright has Standing

It is well settled law that there are three requirements to invoke constitutional standing.

> First, the plaintiff must have suffered an "injury in fact" – an invasion of a legally protected interest which is (a) concrete and particularized, and (b) "actual or imminent, not 'conjectural' or hypothetical. Second, there must be a causal

> connection between the injury and the conduct complained of – the injury has to be "fairly . . . trace[able] to the challenged action of the defendant, and not . . . the result [of] the independent action of some third party not before the court." Third, it must be "likely," as opposed to merely "speculative," that the injury will be "redressed by a favorable decision."

Lujan v. Defs. of Wildlife, 504 U.S. 555, 560-61, 112 S. Ct. 2130, 2136 (1992) (internal citations omitted). David Wright is one of two original patent owners who assigned the '725 Patent to WWCS prior to the commencement of this action. After receiving a recent assignment from Jeffrey Dufrene[12], Wright is now the sole owner of the right to sue for past damages prior to the earlier assignments to WWCS.

By virtue of his ownership of the right to sue for past infringement damages, David Wright has a concrete, actual injury in fact for damages incurred from the infringement of the '725 Patent after its issuance and before the original assignments to WWCS. David Wright seeks redress for this injury. This injury is also traceable to Oceaneering's actions of selling services using its Flowline Remediation System and the facts and circumstances of the claims are nearly identical to the present suit. This is more than sufficient basis for standing to permit David Wright to maintain a cause of action for past infringement damages against Defendant.

D. David Wright is an Indispensable Party

When a necessary and indispensable party is missing from a lawsuit, it is the Plaintiff's responsibility to take action to cure the defect. *Hockerson-Halbertstadt, Inc. v. Nike, Inc.*, 779 F. Supp. at 53-54. WWCS seeks past infringement damages as asserted in the Original Complaint. Because of the clerical error in the original assignments, WWCS may not be entitled to past infringement damages prior to the effective date of the assignments. In order to exercise the right to past infringement damages prior to the effective date of the assignment, and fully adjudicate

[12] Exhibit 4, (Assignment on Rights).

the infringement of the '725 Patent, David Wright must be joined as a Plaintiff to the lawsuit. Thus, David Wright is an indispensable party for the claim of past infringement damages in this lawsuit.

E. CONCLUSION

For the above stated reasons, Wright's Well Control Services, LLC, respectfully requests this Court grant it leave to add David Wright as an additional Plaintiff and to file its Fifth Amended Complaint.

DATED: December 8th, 2017

RESPECTFULLY SUBMITTED

/S/ ***TERRY B. JOSEPH***

WILLIAMS LAW GROUP, LLC
Conrad S.P. Williams, III (#14499)
Meredith R. Durham (#33112)
909 Poydras Street, Suite 1625
New Orleans, LA 70112
TEL: (985) 876-7595
FAX: (985) 876-7594
duke@williamslawgroup.org
Meredith@williamslawgroup.org

and

Guy E. Matthews (*pro hac vice*)
Texas Bar No. 13207000
Terry B. Joseph (*pro hac vice*)
Texas Bar No. 11029500
John D. Holman (*pro hac vice*)
Texas Bar No. 24082232
David M. Lodholz (*pro hac vice*)
Texas Bar No. 24070158
MATTHEWS, LAWSON, MCCUTCHEON, & JOSEPH, PLLC
2000 Bering Drive, Suite 700
Houston, Texas 77057
TEL: (713) 355-4200

FAX: (713) 355-9689
gmatthews@matthewsfirm.com
tjoseph@matthewsfirm.com
jholman@matthewsfirm.com
dlodholz@matthewsfirm.com

and

James Parkerson Roy (La. 11511)
Elwood C. Stevens, Jr. (La. 12459)
John P. Roy (La. 32048)
DOMENGEAUX WRIGHT ROY & EDWARDS LLC
556 Jefferson Street, 5th Floor
Lafayette, LA 70501
Telephone: 337-233-3033
Facsimile: 337-232-8213
jimr@wrightroy.com
elwoods@wrightroy.com
johnr@wrightroy.com

ATTORNEYS FOR PLAINTIFF
WRIGHT'S WELL CONTROL SERVICES, LLC

CERTIFICATE OF SERVICE

I hereby certify that the foregoing document has been filed on this 8th day of December, 2017, pursuant to the electronic filing requirements of the United States District Court for the Eastern District of Louisiana, which provide for service on counsel of record in accordance with the electronic filing protocols in place.

/s/ Terry B. Joseph

jimr@wrightroy.com
elwoods@wrightroy.com
johnr@wrightroy.com

ATTORNEYS FOR PLAINTIFF
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CERTIFICATE OF SERVICE

I hereby certify that the foregoing document has been filed on this 8th day of December, 2017, pursuant to the electronic filing requirements of the United States District Court for the Eastern District of Louisiana, which provide for service on counsel of record in accordance with the electronic filing protocols in place.

/s/ Terry B. Joseph

EXHIBIT 1

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF LOUISIANA
NEW ORLEANS DIVISION

WRIGHT'S WELL CONTROL SERVICES, LLC, AND DAVID WRIGHT	§	**CIVIL ACTION NO. 2:15-CV-1720**
	§	**JUDGE SARAH VANCE**
Plaintiffs,	§	**MAGISTRATE JUDGE KNOWLES**
v.	§	**JURY TRIAL DEMANDED**
OCEANEERING INTERNATIONAL, INC., AND CHRISTOPHER MANCINI, INDIVIDUALLY	§	
Defendants.	§	

PLAINTIFFS' FIFTH AMENDED COMPLAINT

COME NOW, Plaintiffs Wright's Well Control Services, LLC ("WWCS") and David Wright ("Wright") (collectively, "Plaintiffs"), who file this their Fifth Amended Complaint against Defendant Oceaneering International, Inc., ("Oceaneering") ("Oceaneering" or "Defendant").

Parties

1. Plaintiff Wright's Well Control Services, LLC is an entity formed under the laws of the State of Louisiana with its principal place of business located at 6072 Candice Lane, Lake Charles, LA 70615. WWCS owns all rights and interest in U.S. Patent No. 8,413,725 ("the '725 Patent"). A copy of the '725 Patent is attached hereto as Exhibit A. WWCS also owns all rights and interest in U.S. Patent No. 9,435,185 ("the '185 Patent"). A copy of the '185 Patent is attached hereto as Exhibit Y.

2. Plaintiff David Wright is an individual resident of Houston, Texas. Wright assigned his rights and interest in and to the '725 Patent to WWCS on February 11, 2015, and owns the right to sue for damages for infringement of such patent prior to the assignment date.

3. Defendant Oceaneering International, Inc. is an entity formed under the laws of the State of Delaware with its principal place of business located at 11911 FM 529, Houston, Texas 77041. Oceaneering is licensed to do and is doing business in the State of Louisiana and has previously been served with process and made an appearance.

Jurisdiction and Venue

4. This is an action for patent infringement arising under the laws of the United States, 35 U.S.C. § 101, et seq., and particularly 35 U.S.C. §§ 271-287.

5. This is also an action for breach of confidential relationship, breach of contract, common law misappropriation, misappropriation of trade secrets, tortious interference with prospective business relations, fraudulent inducement, business disparagement, and unfair competition under the laws of the State of Texas and Texas common law. This is also an action for misappropriation of trade secrets under laws of the State of Louisiana.

6. This Court has exclusive subject matter jurisdiction over this action under 28 U.S.C. §§ 1331 and 1338(a) based upon Plaintiffs' cause of action for infringement of the '725 Patent. This Court also has jurisdiction because at some of the Defendant's activities have taken place aboard a U.S. flagged vessel.

7. This Court has supplemental jurisdiction over Plaintiffs' remaining claims under 28 U.S.C. § 1367, as they form part of the same case or controversy.

8. Defendant is subject to personal jurisdiction in this Court because it has conducted and continues to conduct business in the Eastern District of Louisiana. Specifically, Oceaneering maintains places of business at 201 Saint Charles Ave, Suite 2500, New Orleans, LA 70170 and 227 Clendenning Road, Houma, LA 70363 (Terrebonne Parish), and lists Bayou Vista, Houma, and New Orleans, Louisiana as "US Operational Bases" (see www.oceaneering.com/contact/locations/). Further, Defendant's infringing and tortious activity continues to take place in this jurisdiction and off the coast of New Orleans.

9. Venue is proper in this district under 28 U.S.C. §§ 1391 and 1400(b).

Facts

WWCS' HYDRATE REMEDIATION SYSTEM

10. David C. Wright ("Wright") founded Wright's Well Control Services, LLC in 2006 with the goal of providing safe, cost-effective and innovative oil and gas well service solutions. Wright has over 29 years of experience in the oil and gas industry, and has spent much of his career developing new and improved oil and gas tools. WWCS is well-known for its problem solving capabilities and has become a leader amongst its competition for subsea and deep water solutions.

11. At the center of WWCS' technological innovations is its ability to remove or remediate hydrate formations within a pipeline or umbilical, particularly in subsea, deep-water applications. WWCS was the first to design, develop, manufacture, and successfully use a system having a subsea separator and pump for hydrate remediation in deep-water application.

12. A "hydrate" occurs when water becomes mixed with the oil and/or gas within a pipeline at certain pressures and temperatures. The pressure and temperatures in deep water cause hydrates to consolidate. In turn the pipeline "ices up" or forms "hydrate plugs." In

addition, asphaltenes and paraffin can form blockages along with the hydrate plugs, or separately.

13. The hydrate blockages result in a loss of production and therefore, revenue. WWCS was the first to design, develop, manufacture, and successfully use a subsea separator and pump system for hydrate remediation in deep-water applications.

14. To find a solution for this problem, WWCS spent eighteen months and a great amount of financial and personnel resources, researching, testing, and developing a system for preventing and removing hydrates: the Wright's Hydrate Remediation System ("Remediation System"). *See* Exhibit B, Article from Offshore Magazine on WWCS' Remediation system titled, "New hydrate skid offers deepwater remediation option," describing the system generally.

15. Prior to WWCS' Remediation System, remediation (or removal) of hydrates was time-consuming, expensive, and dangerous depending on the location and extent of the blockage. In many cases removal of the hydrates was just not possible. In many instances, companies simply left the hydrate and figured out a more costly way to try and work around it or abandoned the pipeline to the extent possible. Methods existed to remove hydrates in small diameter umbilicals and similar equipment but those methods were not suitable for large diameter pipelines or in deep-water applications. WWCS' Remediation System provides a safe, cost-effective, and time saving solution to the formation of hydrates in subsea deep-water pipelines.

16. The Remediation System functions by pulling a vacuum on the pipeline. Drawing down the pipeline pressure causes the hydrate to "melt." Once the hydrate starts to melt, the plug will dislodge and begin to move forward which increases the dissolution rate of the hydrates.

17. In developing the WWCS Remediation System the following design considerations that limited existing technology were successfully addressed:

a) Multifunctional and redundant drive system (a system having multiple pumps and motors on a subsea skid for operational redundancies and alternative capabilities);

b) Pump capabilities (hydrocarbons, acid, paraffin, asphaltene & gas);

c) Overcoming hydrostatic pressure (customizable pumps for different pressures that exist at subsea depths);

d) Hydrate issues within the system (prior systems, such as Oceaneering's were unsuccessful because hydrates formed within the actual system trying to rid the pipeline of hydrates);

e) Gas separation issues (gas caused hydrates within the remediation system itself as well as caused problems with the pump performance);

f) ROV friendly (an ROV is a remotely operated vehicle and is the preferred method of controlling and operating subsea equipment; easy ROV access to the controls on the system is required);

g) Cost effectiveness;

h) Environmentally safe; and,

i) Multi-service vessel deployable & recoverable (compatible with different vessels).

18. WWCS also identified and overcame the following challenges in order to conduct effective remediation operations in deep-water applications:

a) A gas separation system was needed. Without a gas separator new hydrates formed in Oceaneering's remediation equipment's subsea-to-surface return lines making it ineffective and costly. WWCS' system does not allow the formation of hydrates;

b) Design a pumping system with higher displacement rates. The higher discharge rate was needed as we discharged over 378,000 gallons of fluid on the ATP job. Oceaneering's pump used on the ATP job was limited to a discharge rate of 1 to 2 GPM. WWCS' pump has a discharge rate of 84 GPM.

c) Mitigate the effects of gas during the suction phase of operations. The pump used on the ATP job by Oceaneering would shut down when high concentrations of gas were processed and pumped, and would implode on itself.

d) Achieve a higher flow and pressure capacity for subsea pumping – the current technology was limited to a porch-mounted pumping system which was limited to its ROV's hydraulic energy of 8 to 10 GPM for turning the motor and pump assembly; and

e) The need for higher hydrate inhibitor rates and multiple chemical injection points – the previously used assembly by Oceaneering did not have strategically placed access points to mitigate/eliminate the re-emergence of hydrates within the pumping system. WWCS injects methanol at locations in and around the separator, specifically the gas outlet to prevent hydrates from forming within the gas line.

19. The Remediation System may also include an injection system capable of adding multiple chemicals such as xylene, along with other hydrate inhibitors.

WWCS USED REASONABLE MEANS TO PROTECT ITS INFORMATION

20. WWCS performed all reasonable acts to keep its trade secrets confidential, including, but not limited to: (i) requiring any individual accessing the information to sign a nondisclosure agreement; (ii) allowing employees of WWCS access to the trade secrets only to the extent required to perform their jobs; (iii) password protecting all WWCS computers, specifically those containing drawings; (iv) limited access to certain files on the server containing the trade secrets; (v) requiring all individuals to sign in and out to account for all persons entering the facility; (vi) keeping the Remediation System behind gates at all times; and (vii) requiring visiting customers to watch an orientation video before passing the front desk.

21. Furthermore, WWCS does not sell its hydrate Remediation System, preventing anyone or entity from reverse engineering it. The only third parties able to access the system are subject to confidentiality and nondisclosure agreements.

OCEANEERING'S THEFT OF WWCS' HYDRATE REMEDIATION SYSTEM

22. In 2008, ATP Oil & Gas Corp. ("ATP") approached WWCS to review a hydrate remediation system that Oceaneering had unsuccessfully attempted to use to remove hydrates from a pipeline for ATP.

23. ATP contacted WWCS after several failed attempts by Oceaneering to remove the hydrates. WWCS solved ATP's hydrate problem using the WWCS Remediation System.

24. After 18 months of development, on December 11, 2009, WWCS and Oceaneering entered into a Reciprocal Nondisclosure of Confidential & Proprietary Information Agreement ("NDA") for the purpose of completing the ATP job and future hydrate remediation jobs. A copy of the NDA is attached hereto as Exhibit C. WWCS and Oceaneering each executed the NDA, WWCS delivered the fully executed NDA to Oceaneering, and it is a legally binding document. The NDA's intent was to protect confidential, proprietary and/or trade secret information disclosed by WWCS to Oceaneering regarding WWCS' Hydrate Remediation System.

25. WWCS and Oceaneering agreed, *inter alia*, that:

> Neither party shall divulge or use any proprietary information disclosed to it hereunder by the other party for any purpose not connected with the effort contemplated by the Agreement. (¶ 4);
>
> Disclosing Party shall own all right, title and interest (including patent rights, copyrights, trade secret rights, trademark rights and all other intellectual and industrial property rights of any sort throughout the world relating to any and all inventions (whether or not patentable), works of authorship, designs, know-how, ideas and information conceived or reduced to practice, in whole or in part, by disclosing party during the term of this Agreement that relate to the subject matter of, or arise out of, or in connection with Disclosing Party's services or projects, or any Proprietary Information. The Agreement is not to be construed as a work made for hire. Except for the limited use rights set forth herein, this agreement does not grant, assign or transfer to the Receiving Party a license (expressly, by implication, estoppel or otherwise) under, or any rights of ownership in, the

> confidential information, any invention, any patent, trademark, copyright, or application therefor, or any trade secret now or hereafter owned or controlled by Disclosing Party. (¶ 7) (emphasis added);

26. Oceaneering (the Receiving Party) knew or should have known its duties and obligations under the NDA. Oceaneering (the Receiving Party) agreed that breaching the NDA could be remedied, in part, by injunctive relief.

27. Under the protection of the NDA, the Texas and Louisiana Trade Secret Act, Texas common law, and its confidential relationship with Oceaneering, WWCS disclosed certain trade secret and confidential information to Oceaneering regarding the Remediation System, specifically information relating to the subsea separator and pump. WWCS also disclosed to Oceaneering that a working hydrate remediation system would require at least the following: a subsea separator, larger coiled tubing, and a subsea pump that is capable of creating a vacuum to efficiently bring the pressure in the pipeline down. Oceaneering could not have obtained this information otherwise.

28. At the time ATP approached WWCS, Oceaneering did not have a working hydrate remediation system for deep-water applications.

29. In order to work properly, the system was required to have several things that Oceaneering did not know about or use and that WWCS figured out during its 18 month development process. WWCS disclosed these items to ATP and Oceaneering, including:

a) The need for larger coiled tubing was needed for the Remediation System – Oceaneering used a 1 3/4" coiled tubing, which is subject to more frequent formation of hydrates itself due to the size of the inner diameter of the tubing. WWCS provided 2 3/8" coiled tubing to reduce or eliminate the formation of hydrates within the Remediation System due to the much larger inner diameter and flow passage;

b) The need for a subsea separator to keep the gas from flowing through the pump and system and shutting it down – a subsea separator is required for the Remediation System to perform, because when gas is introduced into the system, the gas and fluid mixture would cause the subsea pump to greatly reducing its pumping ability, or in many cases cause the entire system to implode.;

c) Changes to Oceaneering's Emergency Quick Disconnects ("EQD") to make them functional;

d) How to incorporate chemical injections within the system to prevent hydrates from forming in the system itself; and,

e) The need for a subsea hydraulic pump that is capable of creating a vacuum.

30. In addition, WWCS disclosed specific know-how and trade secrets pertaining to how these particular components must be connected, aligned, deployed, and operated in order for the remediation system to successfully remove hydrates. Without WWCS' know-how and trade secrets regarding the design, development, alignment, deployment, and operation of all the equipment necessary to build a functional hydrate remediation system, Oceaneering would not have had the knowledge required to build their remediation system.

31. The trade secret and confidential information provided to Oceaneering by WWCS under the NDA and its confidential relationship with Oceaneering included, at least, (i) schematics, or drawings, of the system and separator, (ii) all necessary testing for each component of the system, (iii) material certifications for the materials used to construct the system, (iv) all necessary drawings to show how the system connects to the wellhead or pipeline, as well as how each component must be connected and arranged, and (v) all engineering relating to the separator, pump, and pad eyes used for lifting the system safely. All of this information and material are trade secrets owned by WWCS and protected under the NDA. A copy of certain confidential information disclosed to Oceaneering under the NDA as "confidential and

proprietary information" is being filed concurrently herewith under seal as Exhibits D, E, F, G, and H. Exhibit D contains confidential drawings and schematics of the hydrate remediation skid; Exhibit E contains confidential material certifications for the hydrate remediation skid; Exhibit F contains confidential certifications and engineering information on the subsea pump used with the hydrate remediation system; Exhibit G contains a study of the complete Hydrate Remediation System completed by Keystone Engineering; and Exhibit H contains confidential information relating to the engineering of the pad eyes and lifting capability and requirements for the hydrate remediation skid. WWCS also provided Oceaneering with additional information verbally, such as in meetings and in the field while on Oceaneering's vessels.

32. The incorporation of a subsea separator in the remediation system is required for the system to perform. Without a subsea separator, when gas is introduced into the system, the gas and fluid mixture causes a significant reduction in the pumping ability of the subsea pump, or in many cases causes the pump to implode. Oceaneering did not possess this knowledge prior to obtaining it from WWCS.

33. The WWCS Remediation System successfully cleared the hydrates in ATP's pipeline. A copy of a presentation created by James C. Wells of ATP on the success of the remediation job is attached hereto as Exhibit I. The presentation highlights the fact that Oceaneering did not have a working deep water hydrate remediation system and that WWCS designed and built a hydrate remediation system including a subsea separator and pump to complete the ATP job.

34. After successfully completing the ATP job, WWCS and Oceaneering worked together on a hydrate remediation project for Marubeni Oil and Gas, with WWCS providing its

Remediation System. A copy of the Project Overview for the Marubeni Harrier Pipeline Remediation Project is attached hereto as Exhibit J, and is being filed under seal. The Project Overview details how integral WWCS and its Remediation System were to the hydrate remediation projects. The purpose of the Marubeni Harrier Pipeline Remediation Project was to remove hydrate formation in the Harrier Pipeline. Marubeni contacted WWCS because it was aware of WWCS' system's successful removal of hydrates on the ATP job.

35. During the Marubeni job, Oceaneering acknowledged that the WWCS Remediation System was WWCS' own "design and concept," and that WWCS' "design and concept" would be proven by the success of the ATP job – which was successful as described above and shown in Exhibit I. Exhibit J at 1.1.1.1.

36. Shortly after the success of the Marubeni project, WWCS and Oceaneering performed one more project together. Williams Oil & Gas ("Williams") called WWCS for a hydrate remediation job. Williams had already contracted with Oceaneering, but Oceaneering experienced the same issues in its previous failed attempts to remediate hydrates and was unable to perform the job without WWCS. Oceaneering was again the vessel used on the Williams job.

37. For the Williams job, WWCS's pump was in for rebuild when the job started and Williams wanted quick action. WWCS agreed for the first time to modify its subsea separator to connect with Oceaneering's pumps, which were ready and available immediately. Oceaneering participated in and was privy to all the access points, connections, and methods used in modifying the various system components to its pumps. WWCS provided Oceaneering with the necessary confidential and trade secret information, schematics, lay-outs, and engineering to show how WWCS modified its subsea separator and other equipment to be connected to

Oceaneering's skid, specifically their pump. Oceaneering did not have this information prior to the Williams job, and had never attempted to connect a subsea separator to their pump.

38. Once Oceaneering had a firsthand look at how its system could work with WWCS' confidential and trade secret information showing how to design, configure, build, and connect a subsea separator and other components such as chemical injection points to their skid, Oceaneering refused to continue to do business with WWCS. Oceaneering had gained all the technology necessary to build its own system, which Oceaneering was attempting to do since entering the NDA with WWCS. *See* Exhibit W, Declaration of Donald Thorne ("Thorne Dec."), at ¶ 10.

39. As WWCS figured out sometime after July 11 2013, Oceaneering began building a subsea separator for its hydrate remediation system while working with WWCS. *Id*. All work WWCS did in connection with an Oceaneering vessel or in any way involving Oceaneering was done under the nondisclosure agreement. *Id*.

40. WWCS used the same hydrate remediation system with the subsea separator and pump proven successful on the ATP and Marubeni jobs to clear the hydrates from the pipeline for Williams.

41. After the Williams job, WWCS performed one more successful hydrate remediation job for ATP. On this job, WWCS used a different company to provide the vessel and Oceaneering was not involved. Despite refusing to work with WWCS, Oceaneering still uses video footage from the 2010 ATP hydrate remediation job performed by WWCS as advertisement for Oceaneering's "success" on remediation projects. A copy of a screen shot of the video, which WWCS discovered after July 11, 2013, is attached hereto as Exhibit K.

42. But for WWCS disclosing the confidential and trade secret information to Oceaneering, Oceaneering would not have the capability or knowledge required to perform hydrate remediation in deep-water applications. *See* Exhibit W at ¶ 14.

WWCS PATENT APPLICATIONS

43. On December 24, 2009, days after executing the NDA with Oceaneering, David Wright ("Wright") and Jeffery Dufrene ("Dufrene") filed U.S. Provisional Application No. 61/290,168 to protect WWCS' Hydrate Remediation System, including specifically the subsea separator and the use of preventative chemical injections within the remediation system to prevent hydrates from forming.

44. On December 24, 2010, Wright and Dufrene filed two U.S. non-provisional patent applications claiming priority to the provisional application filed on December 24, 2009. Each application was directed to specific aspects of the Remediation System:

f) U.S. Patent Application No. 12/978,486, now issued as U.S. Patent No. 8,413,725, describes and claims, inter alia, the subsea sea separator used in WWCS' Remediation System. See Exhibit A.

g) U.S. Patent Application No. 12/978,448 ("the '448 application"), now issued as U.S. Patent No. 9,435,185 (the '185 Patent"), describes aspects of the entire hydrate remediation system and method of use, specifically a method of removing hydrates and other blockages from pipelines. A copy of the '185 Patent is attached hereto as Exhibit Y.

45. Wright and Dufrene assigned all rights and interest in the '185 Patent to WWCS. WWCS is the owner of the '185 Patent.

46. Wright and Dufrene did not expressly assign all rights to damages for past damages to WWCS in 2015. On December 5, 2017, Dufrene expressly assigned all of his rights to sue for past damages to Wright. Wright is currently the owner of all rights to sue for past

damages between patent issuance and May 12, 2015. WWCS is the owner of all remaining rights and interests in the '725 Patent.

47. WWCS provided Oceaneering a copy of each application as "proprietary information" under the NDA more than a year prior to any publication of the information included in the applications. Upon information and belief, Oceaneering used this confidential information in building its remediation system, which it then used to bid against WWCS for hydrate remediation jobs. WWCS also maintains information that is not disclosed in the above filings, which includes specific details regarding the design, development, alignment, deployment, and operation of all the equipment that is beyond the necessary information to enable one of ordinary skill in the art to build a functional hydrate remediation system.

48. WWCS also marked all its equipment with "patent pending" while working with Oceaneering to put them and all other companies on notice of WWCS' pursuit of patent protection on the separator and remediation system.

OCEANEERING'S INTERFERENCE WITH THE BP THUNDER HORSE PROJECT

49. In early 2012, WWCS and BP, PLC ("BP") began discussing a multi-million dollar contract for supplying a subsea separator and pump system to perform a hydrate remediation job. The project was the Thunder Horse Restriction Project (the "THR Project"). Through an explicitly confidential relationship, WWCS provided all requested information regarding the WWCS Remediation System to BP over the course of nearly a year.

50. The bidding process on the THR Project continued in earnest in 2012 and into 2013 and in July 2013 BP ultimately awarded the THR Project to Oceaneering, which submitted a bid using WWCS' confidential and trade secret information. Oceaneering used the WWCS

designs, specifications, configurations, calculations, and drawings to bid for and receive hydrate remediation jobs. See Exhibit V, July 11, 2013 Letter of Regret regarding the THR Project bid.

51. Prior to receiving notice that WWCS was not awarded the THR Project in July 2013 and undertaking to figure out who did, WWCS did not even know Oceaneering was bidding on the subsea remediation portion of the THR Project. Even after some period of time investigating to learn that Oceaneering won the bid, WWCS was not immediately aware of the methods and techniques Oceaneering detailed in the bid process or was using thousands of feet below the surface. Oceaneering also identifies several other possible methods for remediation of a hydrate in its literature and, as a result, without some level of investigation, there was no way for WWCS to immediately become aware of the misappropriation and breach of the NDA. The remediation system is utilized on Oceaneering's private boats and in several thousand feet deep in the sea. There is virtually no way to discover the methods and techniques actually being used by Oceaneering until Oceaneering decides to release that information.

52. Only after a considerable investigation that did not even start until July 2013 did WWCS discover that Oceaneering was utilizing WWCS's very own information and trade secrets to bid on, obtain, and perform jobs in competition with it.

53. But for WWCS' confidential and trade secret information, Oceaneering would not have a workable subsea separator and pump system for deep-water use, and therefore could not have bid against WWCS on the THR Project.

54. Oceaneering had actual knowledge of the '725 Patent and knew or should have known that Oceaneering infringed the '725 Patent when it used a copy of the subsea separator built by WWCS.

55. Oceaneering also knew or should have known that its bid on the THR Project, disclosure of the information necessary to be awarded the project, and attempted performance of the project constituted multiple breaches of the existing NDA, as well as the confidential relationship between WWCS and Oceaneering.

OCEANEERING'S CONTINUED USE OF CONFIDENTIAL INFORMATION

56. Oceaneering has, and continues to use confidential and trade secret information provided to Oceaneering by WWCS during their confidential relationship.

57. Oceaneering has not performed any jobs "contemplated by the [NDA]" since 2011. After the Williams job in 2011, the NDA obligated Oceaneering to cease using any and all confidential and trade secret information provided by WWCS under the NDA.

58. Oceaneering did not stop using the information, but rather used WWCS' own information to build a remediation system to unfairly compete with WWCS and also used the WWCS designs, specifications, configurations, calculations, and drawings to bid for and receive hydrate remediation jobs. *See* Exhibit M, showing Oceaneering using WWCS' confidential information on a job in February 2012. Oceaneering has also used various schematics in its presentations allegedly depicting Oceaneering's "Flowline Remediation System," which is what Oceaneering calls its hydrate remediation system that utilizes a pump and subsea separator for remediation in deep-water application. During its post July 2013 investigation, WWCS discovered that Oceaneering was potentially developing drawings based on WWCS's information as early as March 1, 2010, only a few months after entering into the NDA. In fact, Oceaneering's goal in entering the NDA and doing business with WWCS was "to gain all the technology it could from WWCS regarding its hydrate remediation system." *See* Exhibit W, Thorne Dec. at ¶ 5. Oceaneering entered the NDA knowing it would never be performed and

knowing that no information would ever be kept confidential. *Id*. at ¶ 12. WWCS would not have entered into the NDA had it known of Oceaneering's scheme and plan at the time. The main purpose of the NDA was, in fact, for WWCS to protect the information it provided to Oceaneering.

59. Upon information and belief, WWCS discovered after July 2013 that Oceaneering began bidding on, and being awarded, hydrate remediation projects during, or shortly after, the working relationship with WWCS ended. *See* Exhibit N, Oceaneering's Oilfield Projects Group Project Track Record showing Oceaneering performing multiple hydrate remediation jobs using WWCS' technology between the time it terminated the business relationship with WWCS and February 2012.

60. In addition to the THR Project, WWCS discovered after July 2013 that Oceaneering has bid against WWCS for hydrate remediation jobs for at least the following companies: BP, Plc, ENI US Operating Co., Inc. (3 jobs), Marubeni Oil & Gas USA, Inc., Deep Gulf Energy, Inc., and Murphy Oil Corp. Oceaneering not only received the work at the exclusion of WWCS, but did so using WWCS' own technology against it. But for misappropriating WWCS' technology, Oceaneering could not have bid on these projects, and those projects would have been awarded to WWCS. *See* Exhibit W, Thorne Dec. at ¶ 14.

OCEANEERING'S THEFT AND MISAPPROPRIATION THROUGH FILING PATENT APPLICATIONS

61. Oceaneering and its employee, Christopher Mancini, also misappropriated WWCS' confidential information to file multiple provisional patent applications containing the information provided to Oceaneering by WWCS. These applications used and disclosed WWCS' confidential information protected by the NDA and the confidential relationship between WWCS and Oceaneering.

62. Mancini falsely and fraudulently named himself as an inventor on each of the applications filed. Oceaneering is vicariously liable for all acts described herein by Mancini because Mancini misappropriated WWCS' confidential information in the course and scope of his employment with Oceaneering.

63. Oceaneering filed these patent applications in violation of at least Paragraph 7 of the NDA, which requires that ownership of any invention developed or disclosed during the period of the NDA shall remain with the Disclosing Party, WWCS. Oceaneering further breached the confidential relationship between WWCS and Oceaneering by filing the patent application containing the confidential information. Wright is at least a co-inventor, if not the sole inventor and, as a result, owner of all patent applications filed by Oceaneering and Mancini describing and claiming aspects of the Remediation System disclosed to Oceaneering by WWCS.

64. On April 29, 2013, Oceaneering filed an additional provisional application with the USPTO containing even more information obtained from WWCS under the NDA. A copy of U.S. Patent Application No. 61/817,245 is attached hereto as Exhibit O. Mancini is named as an inventor.

65. From that April 29, 2013 provisional patent application, Oceaneering filed four (4) non-provisional patent applications now pending before the USPTO. All four applications have since been made publicly available. A copy of U.S. Publication Nos. 2014/0318790, 2014/0318789, 2014/0318791, and 2014/0318798 are attached hereto as Exhibits P, Q, R, and S, respectively.

66. All four non-provisional patent applications contain the same specification, or description, of the subject matter.

67. The patent applications contain confidential information provided by WWCS under the NDA.

68. On February 7, 2014, Oceaneering filed another provisional application for a subsea hydraulic pump using the information provided by WWCS. A copy of U.S. Provisional Application No. 61/762,743 is attached hereto as Exhibit T. WWCS disclosed to Oceaneering the need for a subsea hydraulic pump, including all necessary information and know-how required to build and run the pump with a hydrate remediation system.

69. Mancini directly communicated with WWCS during the period of the NDA. Mancini received all confidential information provided to Oceaneering by WWCS. Mancini stole this information, fraudulently claimed inventorship on the above referenced patent applications, and has now disclosed to the public what was otherwise confidential information. Oceaneering is vicariously liable for his action.

70. Also on February 7, 2014, Oceaneering and Mancini filed a non-provisional patent application that is now pending before the United States Patent and Trademark Office ("USPTO"). A copy of U.S. Application No. 14/175,543 ("the '543 App") is attached hereto as Exhibit U. This application also contains confidential information owned by WWCS. As of August 14, 2014, this application has been published as U.S. Publication No. 2014/0224498. In filing the patent application, Mancini has used and published certain of WWCS' confidential information regarding the subsea hydraulic pump obtained under the NDA, specifically with respect to its purpose and operation in connection with a hydrate remediation system. Despite

receiving a Notice of Allowance for all claims of the '543 App, Defendants abandoned the application rather than receive an issued patent. Upon information and belief, abandoning the application was to prevent a challenge to the inventorship of the subject matter in the claims to be issued.

71. Wright is at a least the co-inventor, if not the sole inventor, of the subject matter described in the patent applications filed by Oceaneering and is the sole owner of those inventions.

72. Oceaneering, including specifically Mancini, improperly used and has now made publicly available certain of WWCS confidential information by filing the five, now published, non-provisional patent applications. The publicly disclosed information was of significant value to WWCS and its operations as a leader in deep water intervention, specifically hydrate remediation.

73. Upon information and belief, Oceaneering knew or should have known about Mancini's actions and either willfully ignored, or further aided and encouraged, Mancini in the theft and misappropriation of WWCS' confidential and trade secret information.

74. Oceaneering agreed that all confidential information disclosed by WWCS during the NDA period belongs solely to WWCS, including specifically all patent rights. Oceaneering violated the NDA and filed patent applications on the confidential information provided by WWCS to Oceaneering under the NDA.

75. Upon information and belief, Oceaneering intentionally solicited information from WWCS with specific intent to steal, and did steal, inventions, confidential and trade secret information, and WWCS' right to obtain a patent on their rightfully owned inventions.

DEFENDANT FRAUDULENTLY INDUCED WWCS INTO EXECUTING THE NDA

76. Upon information and belief, Oceaneering fraudulently induced WWCS into executing the NDA for the sole purpose of obtaining the information necessary to design, develop, build, and operate a successful hydrate remediation system. Oceaneering never intended to keep the proprietary information received from WWCS confidential. *See* Exhibit W, Thorne Dec. at ¶ 12.

77. Oceaneering began collecting technical information and specifications of the system and operation of WWCS' Remediation System on the first day of the first job performed with WWCS – mere weeks after executing the NDA. *See* Exhibit W, Thorne Dec. at ¶ 6. Specifically, Oceaneering had an employee, Fernando Hernandez, on site during the performance of the ATP job creating a daily report on the Remediation System. *See* Exhibit X, DTS Field Service Report. Mr. Hernandez made daily reports to Oceaneering's DTS division (the division that was tasked with building a hydrate remediation system for Oceaneering) on the specifics of how WWCS' Remediation System was mobilized, connected, and operated. *Id*. WWCS was not given this report during its business relationship with Oceaneering. The identified purpose of the Oceaneering internal Hernandez report was to "[i]ntegrate Gas separator with WWCS skid for hydrate removal." *Id*. at p. 1. The only reason for Oceaneering to be wrongfully taking this information on the integration of the gas separator with WWCS skid for hydrate removal was to build its own system. This information was WWCS' confidential and proprietary information and should not have been wrongfully taken, much less secretly.

78. The Hernandez report was an internal Oceaneering report created to learn the specifics of WWCS' Remediation System while attempting to duplicate WWCS' system. *Id*. The existence of this then secret report shows that Oceaneering never intended to keep WWCS'

proprietary information confidential, or be bound by the NDA. Relaying this information back to DTS on daily to incorporate into Oceaneering's attempt to build its hydrate remediation system is a breach of the NDA – showing that Oceaneering began breaching the NDA from day one of the first project.

79. James McAllister, an Oceaneering employee at the time of the ATP job, also made regular reports on the specifics of the operation of WWCS' Remediation System, including how the system was mobilized, connected, and operated, during at least the ATP job. *See* Exhibit W, Thorne Dec. at ¶ 7. Mr. McAllister reported WWCS' proprietary information he received to Andy Henderson, Oceaneering management, as well as Clyde Hewlett, Oceaneering's Senior Vice President of Subsea Products at the time. *Id*. Oceaneering management gave the task of building the first separator to Wayne Huddleston, but did not inform Mr. Huddleston at what parameters the separator would be operating. *Id*. at ¶ 9. DTS continued to receive information about WWCS' Remediation System until it was able to copy the system. *Id*. at ¶ 10. Oceaneering's information gathering and attempts to build a hydrate remediation system began before the first ATP project was even completed. *Id*. at ¶ 6.

80. On information and belief, Oceaneering's unwritten corporate policy, based at least in part on oral directives from Oceaneering's Deepwater Technical Solutions Manager to the Operations Manager of the Mobile Offshore Production Systems Division ("MOPS"), was to use technology from smaller companies, and if a dispute did occur, legal fees alone would bankrupt them in court if the company chose to sue Oceaneering. *Id*. ¶ 15. Oceaneering's actions in this case are representative of such a policy and indicative of Oceaneering's overall intent, scheme, and course of conduct in defrauding WWCS.

81. Upon information and belief, the facts set forth above show Oceaneering fraudulently induced WWCS into executing the NDA for the sole purpose of obtaining sufficient information on WWCS' Remediation System to copy it and build a remediation system for itself.

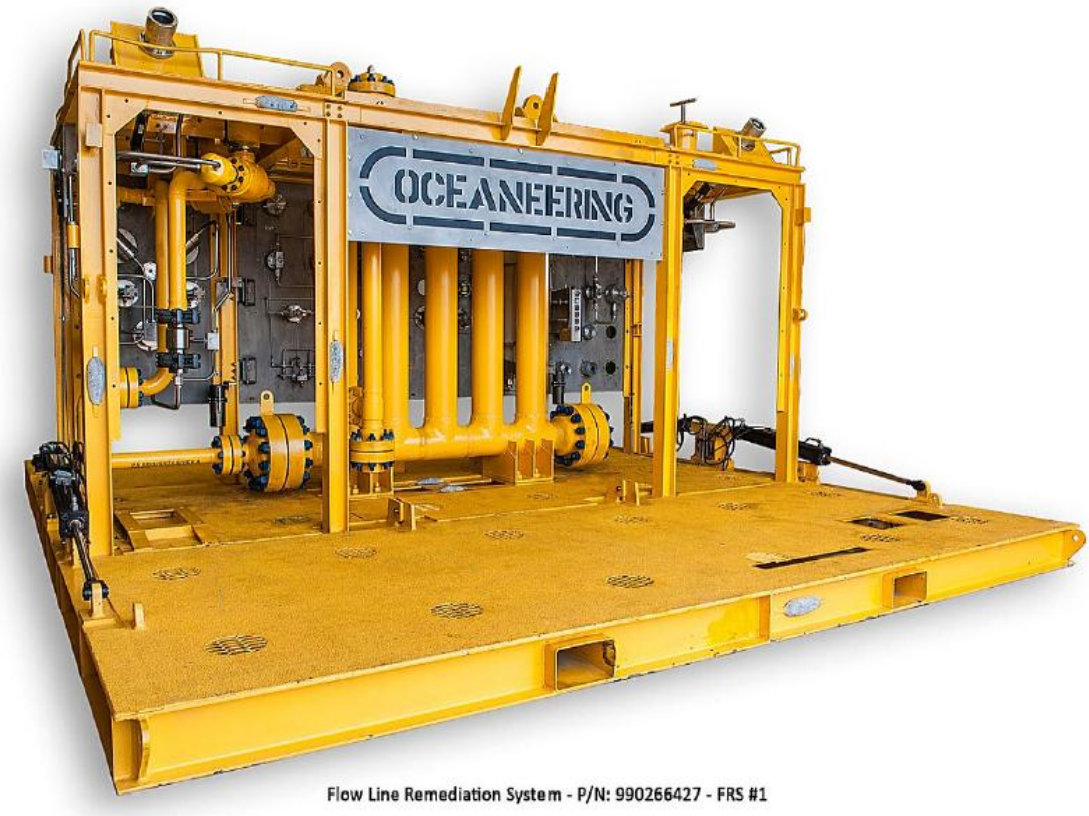
OCEANEERING'S DIRECT AND INDIRECT INFRINGEMENT OF WWCS' PATENTS

82. Oceaneering has, and continues to, directly infringe at least Claims 1, 14, and 18 of the '725 Patent, either literally or under the doctrine of equivalents. A representative claim of the '725 Patent is as follows:

> 1. A subsea separator, comprising:
>
> a housing having an inlet for receiving a fluid mixture,
>
> a non-gaseous fluid outlet located along the housing at a point lower than the inlet, and
>
> a gas outlet located along the housing at a point higher than the inlet;
>
> baffle type members located within the housing for acting on fluid entering the housing; and
>
> ball valve assembly located within the housing and in communication with the gas outlet for preventing non-gaseous fluid from exiting the housing through the gas outlet, the ball valve assembly being operationally configured to open and seal the gas outlet based on the volume of non-gaseous fluid within the separator;
>
> wherein the separator is operationally configured to operate under vacuum.

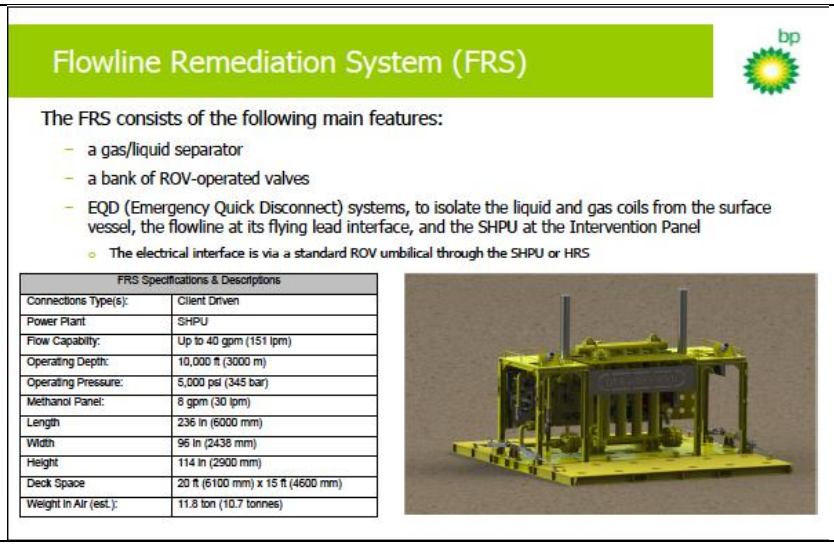
83. Each and every limitation of at least claims 1, 14, and 18 of the '725 Patent are present either literally or under the doctrine of equivalents in Oceaneering's Flowline Remediation System shown below, including a subsea separator, baffle-type members within a

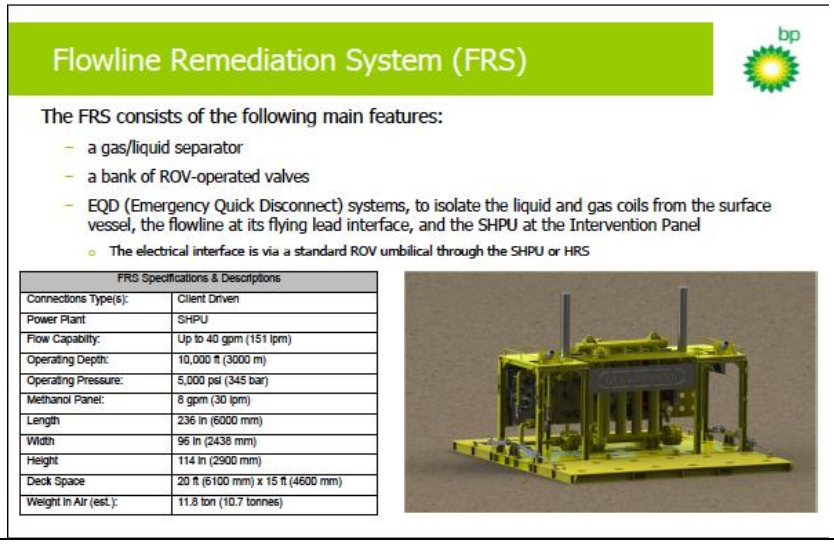
housing, and a ball-valve assembly, or an equivalent thereto, for preventing liquids from exiting the housing.



84. The following chart identifies each limitation of Claims 1, 14, and 18 of the '725 Patent in Oceaneering's Flowline Remediation System.

Claim 1:	Description
A subsea separator, comprising:	Oceaneering's Flowline Remediation System is designed around a skid-mounted subsea separator. *See e.g.*, Exhibit M at p. 10-11. *See also* Exhibit AA, Thunder Horse Project Brochure, at p. 43.

	
a housing having an inlet for receiving a fluid mixture,	The separator of the Flowline Remediation System includes a separator inlet. Exhibit M at p. 10-11.
a non-gaseous fluid outlet located along the housing at a point lower than the inlet, and	The separator of the Flowline Remediation System includes a non-gaseous fluid outlet at a point lower than the inlet. *Id.*
a gas outlet located along the housing at a point higher than the inlet;	The separator of the Flowline Remediation System includes a gas outlet at a point higher than the inlet. *Id.*
baffle type members located within the housing for acting on fluid entering the housing; and	Baffle type members, or their equivalents, located within the separator housing act on the fluid entering the housing. *Id.*
ball valve assembly located within the housing and in communication with the gas outlet for preventing non-gaseous fluid from exiting the housing through the gas outlet,	The separator includes a ball valve assembly in connection with the gas outlet for preventing non-gaseous fluid from exiting the housing through the gas outlet within the housing and fluidly connected to the gas outlet. *Id.* Alternatively, Oceaneering's ball valve assembly is equivalent to the claimed ball valve assembly.
the ball valve assembly being operationally configured to open and seal the gas outlet based on the volume of non-gaseous fluid within the separator;	The ball valve assembly operates in connection with the gas outlet to open the gas outlet and seal the gas outlet based on the volume of non-gaseous fluid within the separator. *Id.*
wherein the separator is operationally configured to operate under vacuum.	The Flowline Remediation System is configured to operate under vacuum, depressurizing the pipeline system. *Id.*

Claim 14:	Description
A deep water separator for separating gas from a liquid/gas mixture comprising:	Oceaneering's Flowline Remediation System includes a separator for separating gas from a liquid/gas mixture at a maximum water depth of 10,000 FSW. *See, e.g.*, Exhibit M at p. 11 and 13. *See also* Exhibit AA, Thunder Horse Project Brochure, at p. 43. 
a cylindrical housing having a substantially uniform wall thickness;	The separator of the Flowline Remediation System includes a cylindrical housing having a substantially uniform wall thickness. Exhibit M at p. 10-11.
a first end cap for sealing the housing at a first end and	The separator includes a first end cap for sealing the housing at a first end. *Id*. at p. 10-11 and 13.
a second end cap for sealing the periphery of the housing at a second end,	The separator includes a second end cap for sealing the housing at a second end. *Id*. at p. 10-11, and 13.
the second end cap having a gas outlet there through;	The second end cap has a gas outlet. *Id*.
a fluid inlet located along the housing for receiving a liquid/gas mixture there through;	The separator includes a fluid inlet located along the housing for receiving a liquid/gas mixture. *Id.*
a non-gaseous fluid outlet located along the housing at a point lower than the fluid inlet,	The separator includes a non-gaseous fluid outlet located along the housing at a point lower than the fluid inlet. *Id.*
the non-gaseous fluid outlet being effective for	The non-gaseous fluid outlet discharges non-gaseous fluid. *Id.*

discharging non-gaseous fluid there through;	
baffle type members having outer edges extending from the inner surface of the housing to a point within the housing,	The separator includes baffle type members, or their equivalents, with outer edges that extend from the inner surface of the housing to a point within the housing. *Id.*
the outer edges of the baffle type members being located between the fluid inlet and the non-gaseous fluid outlet;	The outer edges of the baffle type or equivalent members are located between the fluid inlet and the non-gaseous fluid outlet. *Id.*
and a ball valve assembly located within the housing and fluidly connected to the gas outlet,	The separator includes a ball valve assembly within the housing and fluidly connected to the gas outlet. *Id.* Alternatively, Oceaneering's ball valve assembly is equivalent to the claimed ball valve assembly.
the ball valve assembly being operationally configured to open and seal the gas outlet based on the volume of non-gaseous fluid within the separator.	The ball valve assembly is operationally configured to open and seal the gas outlet based on volume of non-gaseous fluid in the separator. *Id.*
Claim 18:	Description
A method of separating gas from a liquid/gas mixture in a subsea environment at an external hydrostatic pressure up to about 463 bar (about 6708 psi), comprising:	The Flowline Remediation System is used to perform a method of separating gas from a liquid/gas mixture in a subsea environment where the external hydrostatic pressure may be up to about 463 bar (about 6708 psi). *See, e.g.*, Exhibit M at p. 10-11 and 13. A video showing Oceaneering's Flowline Remediation System separating gas from a liquid/gas mixture in a subsea environment can be found at https://www.youtube.com/watch?v=aAL0GDbgk1s&sns=em (last viewed on August 19, 2016)
providing a separator including a housing having an inlet for receiving a liquid/gas mixture,	The separator includes a fluid inlet for receiving a liquid/gas mixture. *Id.*
a non-gaseous fluid outlet located along the housing at a point lower than the inlet,	The separator includes a non-gaseous fluid outlet along the housing at a point lower than the inlet. *Id.*

and a gas outlet located along the housing at a point higher than the inlet;	The separator includes a gas outlet along the housing at a point higher than the inlet. *Id.*
baffle type members having outer edges extending from the inner surface of the housing to a point within the housing lower than the inlet and above the non-gaseous fluid outlet for acting on the liquid/gas mixture entering the housing;	The separator includes baffle type members with outer edges that extend from the inner surface of the housing to a point within the housing lower than the inlet and above the non-gaseous fluid outlet. The baffles act on the liquid/gas mixture entering the housing. *Id.*
and a ball valve assembly located within the housing and in communication with the gas outlet for preventing non-gaseous fluid from exiting the housing through the gas outlet,	The separator includes a ball valve assembly within the housing and in communication with the gas outlet for preventing non-gaseous fluid from exiting the housing through the gas outlet. *Id.* Alternatively, Oceaneering's ball valve assembly is equivalent to the claimed ball valve assembly.
the ball valve assembly being operationally configured to open and seal the gas outlet based on the volume of non-gaseous fluid within the separator;	The ball valve assembly is operationally configured to be in communication with the gas outlet to prevent non-gaseous fluid from exiting the housing through the gas outlet. *Id.*
wherein the separator is operationally configured to operate under vacuum;	The Flowline Remediation System is configured to operate under vacuum, depressurizing the pipeline system. *Id.*
installing the separator subsea to a depth producing an external hydrostatic pressure up to about 463 bar (about 6708 psi):	The Flowline Remediation System is installed on the ocean floor at depths up to 10,000 FSW, producing hydrostatic pressure up to about 6708 psi. Exhibit AA at p. 43.
fluidly connecting the separator to (1) a fluid source containing a liquid/gas mixture and (2) a pump;	Use of the Flowline Remediation System includes fluidly connecting the separator to (1) a fluid source containing a liquid/gas mixture and (2) a pump. Exhibit M at p. 10-11 and 13.
and receiving a fluid/gas	The separator receives a fluid/gas mixture from the fluid source,

mixture from the fluid source wherein the fluid/gas mixture contacts the baffle type members to separate gas out of the fluid/gas mixture.	and the fluid/gas mixture then contacts the baffle type (or equivalent) members within the separator to separate gas out of the fluid/gas mixture. *Id*.

85. The above claim chart is in no way limiting to the amount of materials available to show that each and every limitation of at least Claims 1, 14, and 18 of the '725 Patent is present in Oceaneering's Flowline Remediation System, either literally of under the doctrine of equivalents. Specifically, the above chart omits all material and information designated as Confidential or Highly Confidential by Defendant, including technical drawings, job files, emails, and any other material supporting the presence of each limitation found in the claims of the '725 Patent. In addition, the above chart lacks any analysis or opinion on the material or information from an expert. Plaintiffs reserve the right to utilize additional material and information, including expert opinions, in determining Plaintiffs' final infringement contentions.

86. Oceaneering has, and continues to, directly infringe at least Claims 4 and 9 of the '185 Patent, either literally or under the doctrine of equivalents. A representative claim of the '185 Patent is as follows:

> 4. A method for hydrate remediation and fluid recovery from a subsea location, the method comprising the steps of:
>
> providing a pump in fluid connection with a separator, wherein the pump and the separator are connected with a first fluid conduit and are located in a subsea environment;
>
> connecting the separator to a subsea fluid source using a pipeline conduit, wherein the subsea fluid source consists of a pipeline, a pipeline end termination, a

producing well, a pipeline and a pipeline end termination, or a pipeline and a producing well,

wherein the subsea fluid source contains a fluid comprising a blockage;

actuating the pump to decrease pressure in at least the separator and the pipeline conduit to act on or remove the blockage in the fluid to result in flow or increased flow of the fluid from the subsea fluid source through the pipeline conduit into the separator;

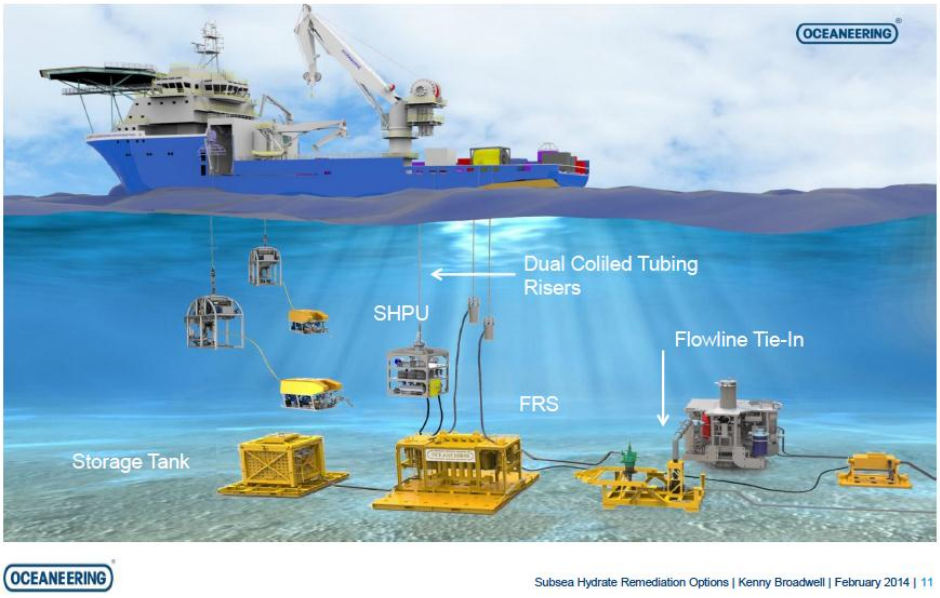
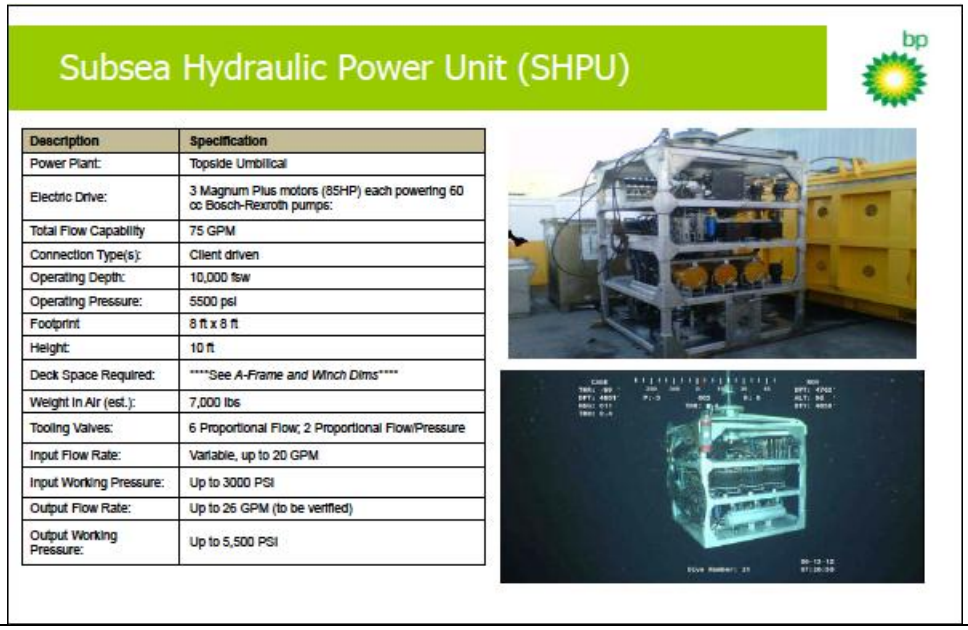
separating the fluid into a gas and a liquid with the separator; and

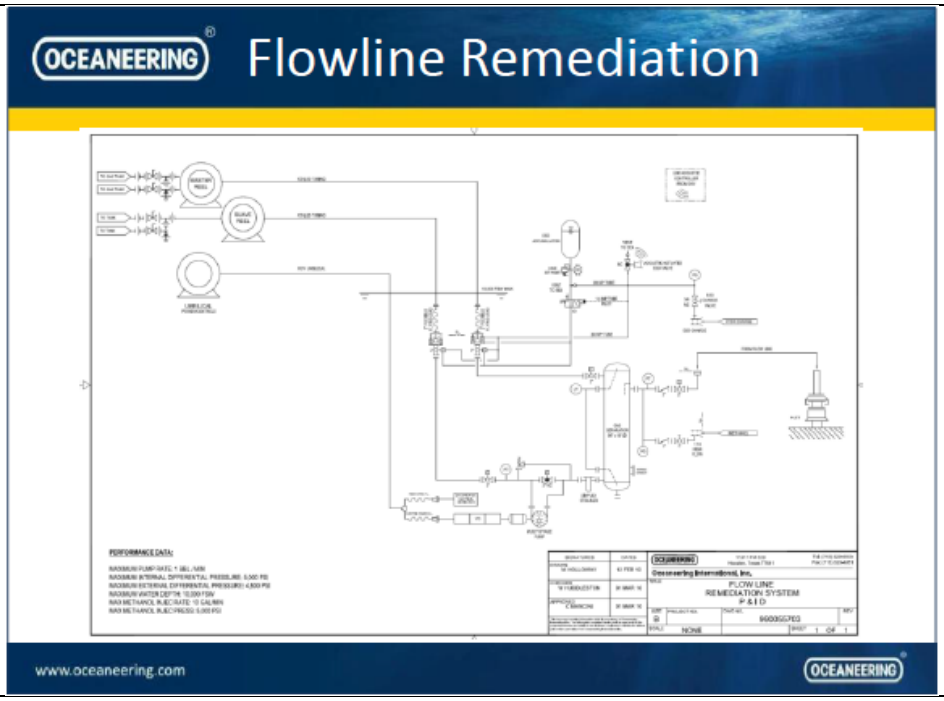
pumping the liquid with the pump through a second fluid conduit to a water surface.

87. Each and every limitation of at least claims 4 and 9 of the '185 Patent are present either literally or under the doctrine of equivalents in Oceaneering's method of using its Flowline Remediation System. In addition to the Flowline Remediation System separator shown above in paragraph 82, Oceaneering uses a Subsea Hydraulic Power Unit (SHPU) (which contains a pump system) to remove hydrates. The SHPU is depicted below.

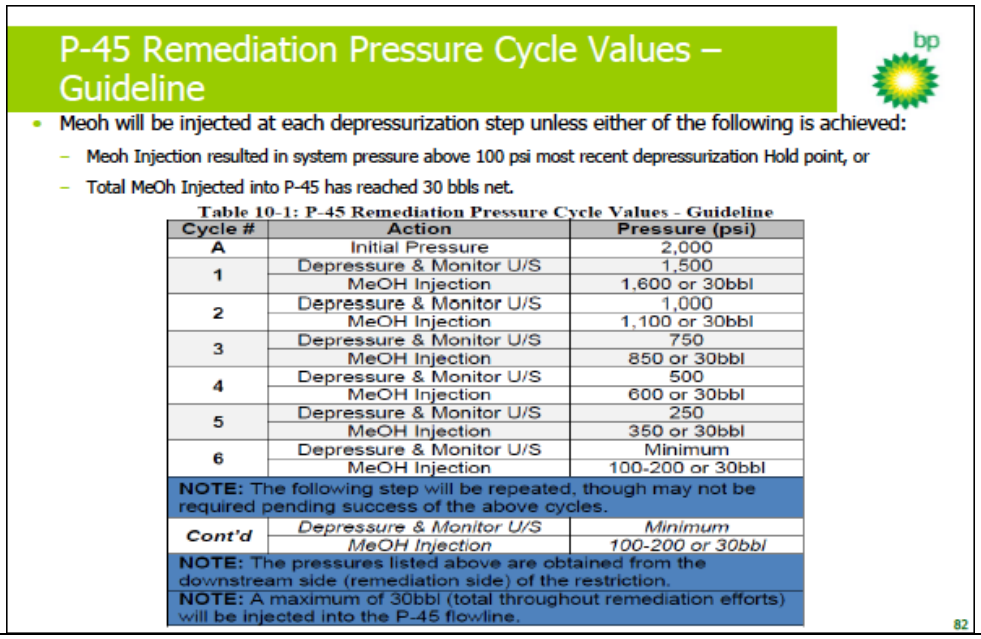
88. The following chart identifies each limitation of Claims 4 and 9 of the '185 Patent in Oceaneering's use of its Flowline Remediation System.

Claim 4	Description
A method for hydrate remediation and fluid recovery from a subsea location, the method comprising the steps of:	Oceaneering documentation discloses a method for hydrate remediation and fluid recovery from a subsea location. *See, e.g.*, Exhibit M, Oceaneering Brochure ("Brochure") at p. 2-17. Specifically, the Brochure discloses a method for hydrate remediation by depressurization of the pipeline. *See Id.* at p. 5 ("The Method," listing depressurization as included in the method). In addition, a video showing Oceaneering's Flowline Remediation System separating gas from a liquid/gas mixture in a subsea environment can be found at https://www.youtube.com/watch?v=aAL0GDbgk1s&sns=em (last viewed on January 16, 2017). *See also* Exhibit BB, Excerpt from Oceaneering's Catalog (below).  The Flowline Remediation System (FRS) allows for hydrate remediation of large volume flowlines on the seabed via mudmat based equipment. The system includes subsea separation capabilities and features an Emergency Quick Disconnect (EQD). A standalone Subsea Hydraulic Power Unit (SHPU) evacuates the flowline, which reduces the flowline pressure to below the hydrate formation pressure. The FRS is Multi-Service Vessel (MSV) deployed.
providing a pump in fluid connection with a separator, wherein the pump and the separator	Oceaneering Brochure discloses a pump in fluid connection with a separator. *See* Exhibit M at p. 11. *See also* Exhibit Z, 2014 OII Brochure at p. 12 (depicted below).

are connected with a first fluid conduit and are located in a subsea environment;	 *See also* Exhibit AA at p. 46 (below). 
connecting the separator to a subsea fluid source using a pipeline conduit, wherein the subsea fluid	Oceaneering Brochure discloses the step of connecting the separator to a fluid source with a pipeline end termination through a pipeline conduit. Exhibit M at p. 12. Specifically, the below Oceaneering schematic depicts the separator connected to a pipeline end termination (PLET).

source consists of a pipeline, a pipeline end termination, a producing well, a pipeline and a pipeline end termination, or a pipeline and a producing well,	
wherein the subsea fluid source contains a fluid comprising a blockage;	The Brochure discusses remediating fluids containing a blockage of hydrates. *Id*. at p. 4.
actuating the pump to decrease pressure in at least the separator and the pipeline conduit to act on or remove the blockage in the fluid to result in flow or increased flow of the fluid from the subsea fluid source through the pipeline conduit into the separator;	Oceaneering Brochure discloses the step of actuating the pump to decrease pressure in the separator and in the pipeline to act on or remove the hydrate(s) to result in flow or increased flow of the fluid from the subsea pipeline. *Id*. at p. 14-15. The Brochure discusses a hydrate remediation skid to reduce pressure in a subsea system and to remove hydrates. *Id*. at p. 4, 5, and 9. Specifically, the Brochure discloses a duplex pump as the method of depressurizing the separator and pipeline. *Id*. *See also* Exhibit AA at p. 13, slide titled, "P45/T41 Remediation Scope and Methodology" describing in general how Oceaneering's Flowline Remediation System was used on the project. – **GOAL: To clear restrictions in the P-45 & T-41 (hydrate/asphaltene) blockages. We will attempt to complete this by use of a single sided depressurization method. By reducing pressure on the manifold side of the suspected hydrate this should allow the pressure on the downstream side of the blockage to reduce to the point of allowing liberation of gasses contained within the hydrate.** – A subsea pump (SHPU) will be used in conjunction with a subsea separator (FRS) to **depressurize the flowlines** through an intervention connector assembly (ICA) installed on Slot 17 and installed backup ICA on Slot 18 of the DC41W manifold in an attempt **to remove the blockages.**
separating the fluid	Oceaneering Brochure discloses separating the fluid into a gas and a liquid

into a gas and a liquid with the separator; and	with the separator. Exhibit M at p. 10-11.
pumping the liquid with the pump through a second fluid conduit to a water surface.	Oceaneering Brochure discloses pumping the liquid with the pump through a second fluid conduit to a water surface. *Id*.
Claim 9	Description
A method for acting on or removing a blockage from a pipeline fluid in a subsea environment, the method comprising the steps of:	Oceaneering documentation discloses a method for acting on or removing a blockage from a pipeline in a subsea environment. *See*, *e.g.*, Exhibit M, Oceaneering Brochure ("Brochure") at p. 2-17. Specifically, the Brochure discloses a method for hydrate remediation by depressurization of the pipeline. *See Id*. at p. 5. ("The Method," listing depressurization as included in the method). In addition, a video showing Oceaneering's Flowline Remediation System separating gas from a liquid/gas mixture in a subsea environment can be found at https://www.youtube.com/watch?v=aAL0GDbgk1s&sns=em (last viewed on January 16, 2017).
positioning a fluid pump and a separator in the subsea environment, wherein the fluid pump and the separator are connected by a first fluid conduit;	Oceaneering Brochure discloses a step for positioning a fluid pump and a separator in a subsea environment, wherein the fluid pump and the separator are connected by a first fluid conduit. *Id*. at p. 11.
connecting the separator to a pipeline comprising the pipeline fluid containing the blockage;	Oceaneering Brochure discloses connecting the separator to the pipeline containing the blockage. *Id*. at p. 4, 5, and 9.
actuating the fluid pump to decrease pressure in at least the separator and	Oceaneering Brochure discloses actuating the fluid pump to decrease pressure in at least the separator and the pipeline. *Id*. The Brochure discusses a hydrate remediation skid to reduce pressure in a

the pipeline, thereby:	subsea system and to remove hydrates. *Id.* Specifically, the Brochure discloses a duplex pump as the method of depressurizing the separator and pipeline. *Id.* *See also* Exhibit AA at p. 83 (below).  P-45 Remediation Pressure Cycle Values – Guideline bp • Meoh will be injected at each depressurization step unless either of the following is achieved: – Meoh Injection resulted in system pressure above 100 psi most recent depressurization Hold point, or – Total MeOh Injected into P-45 has reached 30 bbls net. Table 10-1: P-45 Remediation Pressure Cycle Values - Guideline Cycle # / Action / Pressure (psi) A / Initial Pressure / 2,000 1 / Depressure & Monitor U/S / 1,500 MeOH Injection / 1,600 or 30bbl 2 / Depressure & Monitor U/S / 1,000 MeOH Injection / 1,100 or 30bbl 3 / Depressure & Monitor U/S / 750 MeOH Injection / 850 or 30bbl 4 / Depressure & Monitor U/S / 500 MeOH Injection / 600 or 30bbl 5 / Depressure & Monitor U/S / 250 MeOH Injection / 350 or 30bbl 6 / Depressure & Monitor U/S / Minimum MeOH Injection / 100-200 or 30bbl NOTE: The following step will be repeated, though may not be required pending success of the above cycles. Cont'd / Depressure & Monitor U/S / Minimum MeOH Injection / 100-200 or 30bbl NOTE: The pressures listed above are obtained from the downstream side (remediation side) of the restriction. NOTE: A maximum of 30bbl (total throughout remediation efforts) will be injected into the P-45 flowline. 82
acting on or removing the blockage to result in flow or increased flow of the pipeline fluid; and	Oceaneering Brochure discloses acting on or removing the blockage to result in flow or increased flow of the pipeline fluid. The Brochure discusses a hydrate remediation skid to reduce pressure in a subsea system and to remove hydrates. Exhibit M at p. 4, 5, and 9.
communicating the pipeline fluid having the blockage acted on or removed through the separator to separate the pipeline fluid into liquid and gas; and	Oceaneering Brochure discloses communicating the pipeline fluid having the blockage acted on or removed through the separator to separate the pipeline fluid into liquid and gas. *Id.* at p. 4, 5, 9, and 11.
pumping the liquid with the fluid pump through a second conduit.	Oceaneering Brochure discloses pumping the liquid with the fluid pump through a second conduit. *Id.* at p. 4, 5, 9, and 11.

89. The above claim chart is in no way limiting to the amount of materials available to show that each and every limitation of at least Claims 4 and 9 of the '185 Patent is present in Oceaneering's use of its Flowline Remediation System, either literally of under the doctrine of equivalents. Specifically, the above chart omits all material and information designated as Confidential or Highly Confidential by Defendant, including technical drawings, job files, emails, and any other material supporting the presence of each limitation found in the claims of the '185 Patent. In addition, the above chart lacks any analysis or opinion on the material or information from an expert. Plaintiffs reserve the right to utilize additional material and information, including expert opinions, in determining Plaintiffs' final infringement contentions.

Causes of Action

COUNT I - PATENT INFRINGEMENT[1]

90. Plaintiffs re-allege, as if fully set forth herein, each allegation contained in the previous paragraphs.

91. As specifically set forth in paragraphs 81-84 above, Oceaneering has, and continues to, directly infringe at least Claims 1, 14, and 18 of the '725 Patent by making, using, selling, or offering for sale systems and methods covered by the claimed inventions of the '725 Patent. Specifically, Oceaneering is making, using, selling, or offering for sale a hydrate remediation system containing a subsea separator covered by one or more claims of the '725 Patent.

[1] WWCS's claim for infringement of the '185 Patent was dismissed by this Court's Order [Doc. 260] on Defendant's motion summary judgment, but the order is interlocutory and thus not final. Plaintiffs' claims for infringement of the '725 Patent remain.

92. In addition to, or alternatively, Oceaneering has, and continues to, indirectly infringe at least Claims 1, 14, and 18 of the ’725 Patent by inducing or contributing to the manufacture, use, sale, or offer for sale of the claimed inventions of the ’725 Patent by Oceaneering’s customers or potential customers in Texas, Louisiana, or elsewhere in the United States, such as BP, Plc, ENI US Operating Co., Inc., Marubeni Oil & Gas USA, Inc., Deep Gulf Energy, Inc., Shell E&P, Newfield, W & T Offshore, and Murphy Oil Corp., one or more of which have directly infringed the ’725 Patent. Oceaneering’s customers purchased, operated, or sought for purchase or lease the hydrate Remediation System supplied or offered by Oceaneering.

93. Plaintiffs reserve the right to assert each and every claim of the ‘725 Patent, including the dependent claims not specifically addressed in the above claim chart. As discovery is ongoing, Plaintiffs are presently seeking additional information relating to all claims of the ‘725 Patent.

94. On information and belief, Oceaneering’s subsea separator has no substantial non-infringing uses or was supplied or provided by Oceaneering with knowledge that the same was made, adapted, configured, used or to be used so as to infringe the ’725 Patent.

95. Furthermore, as specifically set forth in paragraphs 85-88 above, Oceaneering has, and continues to, directly infringe at least Claims 4 and 9 of the ’185 Patent by making, using, selling, or offering for sale systems and methods covered by the claimed inventions of the ’185 Patent. Oceaneering is performing and/or offering performance of the remediation method covered by one or more claims of the ’185 Patent. Specifically, Oceaneering has offered to use

its Flowline Remediation System, performing each and every step of at least Claims 4 and 9, on a hydrate remediation job for at least W & T Offshore since September 6, 2016.

96. In addition to, or alternatively, Oceaneering has, and continues to, indirectly infringe at least Claims 4 and 9 of the ’185 Patent by inducing or contributing to the manufacture, use, sale, or offer for sale equipment for use with the claimed inventions of the ’185 Patent by Oceaneering’s customers or potential customers in Texas, Louisiana, or elsewhere in the United States, such as BP, Plc, ENI US Operating Co., Inc., Marubeni Oil & Gas USA, Inc., Deep Gulf Energy, Inc., Shell E&P, Newfield, W & T Offshore, and Murphy Oil Corp., one or more of which have directly infringed the ’185 Patent. Oceaneering’s customers purchased, operated, or sought for purchase or lease the hydrate Remediation System supplied or offered by Oceaneering to practice the claims of the ‘185 Patent.

97. WWCS reserves the right to assert each and every claim of the ‘185 Patent, including the dependent claims not specifically addressed in the above claim chart. As discovery is ongoing, WWCS is presently seeking additional information relating to all claims of the ‘185 Patent.

98. Upon information and belief, Oceaneering’s infringing activities have been willful, and this is an exceptional case.

99. As a result of Oceaneering’s infringing activities in direct competition with WWCS, Plaintiffs have suffered irreparable damages, detriment, and harm for which a monetary award is an insufficient remedy. WWCS and Wright are entitled to recovery from Defendant for its infringement of the ‘725 Patent; and WWCS is entitled to recovery from Defendant for its infringement of the ‘185 Patent. Additionally, as a result of the willful and deliberate nature of

Oceaneering's infringing activities, Plaintiffs are entitled to enhanced damages and are entitled to recover attorneys' fees and costs. 28 U.S.C. §§ 284-285.

COUNT II - TEXAS COMMON LAW MISAPPROPRIATION[2]

100. WWCS re-alleges, as if fully set forth herein, each allegation contained in the previous paragraphs.

101. WWCS spent extensive time, labor, skill, and money to design, develop, and build the Remediation System. Defendant has used WWCS's Remediation System in competition with WWCS, thereby getting a "free ride" because Defendant is not burdened with the development expense incurred by WWCS.

102. Defendant's "free ride" on WWCS's extensive time, labor, skill, and money has caused a commercial damage to WWCS in the form of lost projects awarded to Defendant.

103. As a result of Defendant's misappropriation, WWCS has suffered irreparable injury, detriment, and harm for which a monetary award is an insufficient remedy.

COUNT III - TEXAS COMMON LAW MISAPPROPRIATION OF TRADE SECRETS[3]

104. WWCS re-alleges, as if fully set forth herein, each allegation contained in the previous paragraphs. Defendant is liable to WWCS for common law misappropriation of trade secrets for all acts occurring prior to September 1, 2013.

105. As fully described above, WWCS owns certain trade secrets relating to a subsea separator, its use with chemical injections for hydrate prevention, and other trade secrets relating to the entire Hydrate Remediation System as a whole. Oceaneering used that trade secret

[2] This claim was dismissed by this Court's Order [Doc. 258] on Defendant's motion for summary judgment, but the order is interlocutory and thus not final.
[3] This claim was dismissed by this Court's Order [Doc. 258] on Defendant's motion for summary judgment, but the order is interlocutory and thus not final.

information in violation of a confidential and contractual relationship with WWCS. WWCS has suffered, and continues to suffer injury as a result of Oceaneering's misappropriation of WWCS's trade secrets.

106. As a result of Defendant's misappropriation of WWCS's trade secrets, WWCS has suffered and continues to suffer irreparable injury, detriment, and harm for which a monetary award is an insufficient remedy.

COUNT IV - LOUISIANA STATUTORY MISAPPROPRIATION OF TRADE SECRETS[4]

107. WWCS re-alleges, as if fully set forth herein, each allegation contained in the previous paragraphs.

108. Oceaneering is liable for misappropriation of WWCS's trade secrets under the Louisiana Uniform Trade Secret Act, particularly LA.REV.STAT. § 51:1431.

109. Oceaneering acquired trade secret information related to WWCS's Remediation System, specifically all know-how related to designing, developing, deploying, and operating the Remediation System, including the use of a subsea separator, subsea hydraulic pump, and chemical injections for hydrate prevention, obtained through a confidential relationship with WWCS as evidenced by the signed NDA between the parties.

110. Certain information and know-how regarding the design, development, deployment, and operation of WWCS's Remediation System are entitled to trade secret protection under Louisiana law. WWCS researched, designed, and developed the Remediation System at great expense. The particulars of a WWCS Remediation System are not generally known outside of WWCS and are not available to the general public. The design advantages of a

[4] This claim was dismissed by this Court's Order [Doc. 258] on Defendant's motion for summary judgment, but the order is interlocutory and thus not final.

WWCS Remediation System give WWCS a considerable competitive advantage over its peers who do not have access to WWCS's confidential and trade secret information. WWCS has taken reasonable steps to protect both the design of a WWCS Remediation System and the WWCS Remediation System itself, as well as other confidential and proprietary information, from disclosure to competitors, including, but not limited to, requiring the signing of a Non-Disclosure Agreement prior to disclosure of such protected information.

111. Oceaneering has misappropriated WWCS's trade secrets to build certain components of its hydrate remediation system. But for WWCS's trade secrets, Oceaneering would not have been able to build its system.

112. As a result of Oceaneering's misappropriation, WWCS has suffered irreparable injury, detriment, and harm for which a monetary award is an insufficient remedy. In addition to equitable damages, WWCS is entitled to recover actual and consequential damages, including all losses suffered by WWCS and unjust enrichment (disgorgement) acquired by Defendant, exemplary damages, pre- and post-judgment interest, and costs. WWCSalso seeks injunctive relief to restrain Oceaneering from continued use of information gained through misappropriation.

COUNT V - BREACH OF CONTRACT – DECEMBER 2009 NON-DISCLOSURE AGREEMENT

113. WWCS re-alleges, as if fully set forth herein, each allegation contained in the previous paragraphs.

114. Oceaneering entered into a Non-Disclosure Agreement with WWCS to maintain the confidentiality of WWCS's Remediation System and method of operation. Oceaneering agreed that it would not use the information for its own benefit without obtaining permission

from WWCS. WWCS was not asked for, nor did they grant, any permission to Oceaneering to continue using WWCS's Remediation System.

115. WWCS breached the agreement with WWCS to maintain the confidentiality of its information. Oceaneering breached the agreement not to use that information for its own benefit without obtaining permission from WWCS.

116. WWCS performed all conditions precedent to enforcement of the agreement.

117. As a result of Oceaneerings's breach of contract, WWCS has suffered and continues to suffer irreparable injury, detriment, and harm for which a monetary award is an insufficient remedy.

COUNT VI - BREACH OF CONFIDENTIAL RELATIONSHIP[5]

118. WWCS re-alleges, as if fully set forth herein, each allegation contained in the previous paragraphs.

119. WWCS entered a confidential relationship with Oceaneering, as evidenced by the Non-Disclosure Agreement. As a result of this confidential relationship, WWCS provided information about WWCS's hydrate remediation system and method of use. Both parties understood and agreed that the information was to be kept confidential.

120. Oceaneering has taken WWCS's trade secrets and confidential information and, based upon information and belief, begun to manufacture and use a hydrate remediation system to directly compete with WWCS.

121. On information and belief, based on the review of the Oceaneering website, knowledge of the system, and information from a former Oceaneering employee, as well as other

[5] This claim was dismissed by this Court's Order [Doc. 258] on Defendant's motion for summary judgment, but the order is interlocutory and thus not final.

materials, Oceaneering designed, developed and built its hydrate remediation system based on information, know-how, drawings, and/or test results disclosed by WWCS to Oceaneering.

122. As a result of Oceaneering's breach of confidential relationship, WWCS has suffered and continues to suffer irreparable injury, detriment, and harm for which a monetary award is an insufficient remedy.

COUNT VII - TORTIOUS INTERFERENCE WITH PROSPECTIVE BUSINESS RELATIONS

123. WWCS re-alleges, as if fully set forth herein, each allegation contained in the previous paragraphs.

124. As described above, WWCS spent enormous amounts of time and resources preparing for the Thunder Horse Project for BP. Until Oceaneering's interference, BP had all but awarded the project to WWCS. WWCS was reasonable in believing that they would have entered into a contractual business relationship with BP.

125. Oceaneering intentionally interfered with the prospective relationship between WWCS and BP. Oceaneering's interference was a violation of its duty of confidentiality and of its contract (NDA). Oceaneering's interference with the prospective business relationship between WWCS and BP proximately caused WWCS to lose at least one hydrate remediation project. WWCS suffered actual loss due to Oceaneering's interference.

126. Oceaneering is liable for the damages caused by its intentional interference with the prospective business relationship between WWCS and BP.

127. Upon information and belief, Oceaneering has made knowingly false statements to additional companies while in the process of bidding against WWCS, furthering Oceaneering's interference with WWCS's prospective business relationships.

128. As a result of Oceaneering's tortious interference with WWCS's prospective business relations, WWCS has suffered and continues to suffer irreparable injury, detriment, and harm for which a monetary award is an insufficient remedy.

COUNT VIII - FRAUDULENT INDUCEMENT

129. WWCS re-alleges, as if fully set forth herein, each allegation contained in the previous paragraphs.

130. By executing the NDA, Oceaneering represented to WWCS that it would keep certain trade secret and proprietary information confidential. As described in detail above, Oceaneering made this material representation knowing it was false and intended for WWCS to act on it. It was reasonable for WWCS to do so, as it was a part of the express agreement. Relying on Oceaneering's intentional misrepresentation, WWCS entered into a contract believing that it would be disclosing information under a duty of confidentiality. WWCS would not have entered into the contract had it known Oceaneering did not intend to bind itself to the terms and therefore reasonably relied on Oceaneering's statements. Oceaneering's acts post-execution of the NDA indicate that not only did it not keep the information confidential, but that it never intended to keep the information confidential. WWCS was damaged was a result of the fraud.

COUNT IX - BUSINESS DISPARAGEMENT[6]

131. WWCS re-alleges, as if fully set forth herein, each allegation contained in the previous paragraphs.

[6] This claim was dismissed by this Court's Order [Doc. 258] on Defendant's motion for summary judgment, but the order is interlocutory and thus not final.

132. Oceaneering published knowingly false information about WWCS at least to BP and to others after WWCS lost the THR Project to BP in July 2013. This publication of information was done with malice, without privilege, and caused WWCS to suffer injury by economic loss.

133. Specifically, upon information and belief, Christopher Mancini of Oceaneering made certain statements to BP while WWCS was bidding on a hydrate remediation job. Mancini made knowingly false representations that the WWCS Remediation System does not work, despite Mancini being present at multiple successful remediation jobs perform by WWCS. Mancini's representation intended to cast doubt on the efficacy of the Plaintiff's Remediation System, and the false representation did cast doubt once that information was published to at least BP. Oceaneering is vicariously liable for Mancini's statements.

134. Oceaneering is liable for disparaging representations made against the quality and efficacy of the WWCS Remediation System, which caused actual damages to WWCS.

COUNT X - UNFAIR COMPETITION[7]

135. WWCS re-alleges, as if fully set forth herein, each allegation contained in the previous paragraphs.

136. Defendant's actions are contrary to honest dealing and honest practice in industrial and commercial matters such that Defendant's actions give rise to a civil cause of action.

137. With knowledge of Defendant's contractual obligation to keep confidential certain information and trade secrets disclosed by WWCS, Defendant acted to eliminate the

[7] This claim was dismissed by this Court's Order [Doc. 258] on Defendant's motion for summary judgment, but the order is interlocutory and thus not final.

possibility of fair competition with WWCS by stealing, misappropriating, using, and publishing WWCS's competitive advantage in the market of hydrate remediation. Defendant's actions require WWCS to compete against itself and its own technology, thus preventing any real possibility of fair competition. But for Defendant's theft and misappropriation of WWCS's confidential and trade secret information, Defendant would not be able to compete with WWCS in the deep-water hydrate remediation market.

138. Defendant also tortiously interfered with WWCS's business relations by making false statements to third parties about WWCS's hydrate remediation abilities. Specifically, Oceaneering employee Christopher Mancini made a statement to BP that WWCS's remediation system did not work – a statement Mancini knew to be false at the time the statement was made. Upon information and belief, Mancini's statement was meant to induce, and did induce, BP into making a decision not to award WWCS a hydrate remediation job.

139. Furthermore, Oceaneering's improper use of WWCS's confidential or proprietary information gave it a head start in the relatively new market by avoiding the time and resources WWCS was required to spend did to develop its own remediation system. Oceaneering's head start has caused injury to WWCS.

140. As a result of Oceaneering's unfair competition, WWCS has suffered irreparable injury, detriment, and harm for which a monetary award is an insufficient remedy.

COUNT XI - EXEMPLARY DAMAGES

141. WWCS re-alleges, as if fully set forth herein, each allegation contained in the previous paragraphs.

142. The misappropriation of trade secrets[8], fraud, theft and other conduct referenced herein was outrageous, malicious, and morally culpable conduct. Oceaneering is therefore liable for exemplary damages as a result of its conduct.

COUNT XII - APPLICATION FOR INJUNCTIVE RELIEF

143. WWCS re-alleges, as if fully set forth herein, each allegation contained in the previous paragraphs.

144. Because of Defendant's actions, WWCS has suffered irreparable injury for which a monetary award alone is insufficient to remedy.

145. WWCS requests, following a hearing on the issue, that this Court issue a preliminary injunction against Oceaneering preliminarily enjoining it from using, disclosing, or publishing any trade secrets and/or confidential information obtained from Wright's Well Control Services or David Wright under the Reciprocal Nondisclosure of Confidential & Proprietary Information Agreement, and specifically enjoining Defendant from the activities underlying any cause of action set forth in Counts I - X, above.

146. Oceaneering specifically agreed that "money damages might not be a sufficient remedy for any breach by it of this [NDA], and that in addition to all other remedies, the Disclosing Party [Plaintiff] shall be entitled to seek specific performance and injunctive or other equitable relief as a remedy for any such breach." *See* Exhibit C.

147. WWCS has suffered injury in losing its advantage over the competition through the unlawful disclosure and use of its confidential and trade secret information by Oceaneering– an injury that is irreparable. A monetary award alone is insufficient to remedy the damage caused

[8] This claim was dismissed by this Court's Order [Doc. 258] on Defendant's motion for summary judgment, but the order is interlocutory and thus not final.

by Defendant's acts. In addition, WWCS is likely to succeed on the merits of the above claims given the blatant and egregious nature of the theft and continued use of confidential and trade secret information.

148. But for a preliminary injunction against Oceaneering's use of the WWCS's hydrate remediation system, including a subsea separator and pump designed and developed by WWCS, WWCS will continue to suffer irreparable injury, as WWCS is forced to bid against itself and its own inventions on future hydrate remediation projects.

149. Accordingly, WWCS requests the Court to set its request for Preliminary Injunction for a hearing and its request for a Permanent Injunction for a full trial on the merits and, after the trial or appropriate motion, issue a preliminary and permanent injunction against Defendants as requested herein.

COUNT XIII - ATTORNEYS' FEES

150. Plaintiffs re-allege, as if fully set forth herein, each allegation contained in the previous paragraphs.

151. Plaintiffs are entitled to an award of attorneys' fees pursuant to Tex. Civ. Practice and Remedies Code § 38.001 *et seq.* and/or 35 U.S.C. § 285.

Plea in Avoidance

152. To the extent Defendant asserts a defense of statute of limitations, Plaintiffs incorporate all facts set out above by reference and specifically plead that the defense is not viable because of the application of the discovery rule. Plaintiffs did not know or have any reason to know of any tortious or illegal or breaching conduct set out above until at least July 11, 2013. Plaintiffs could not have known of the conduct until at least July 11, 2013.

Jury Demand

153. Pursuant to Fed. R. Civ. P. 38, Plaintiffs demand a trial by jury of all issues in this action that are so triable.

Prayer for Relief

WHEREFORE, Plaintiffs Wright's Well Control Service, LLC and David Wright respectfully request that this Court enter judgment against Defendant Oceaneering International, Inc., granting Plaintiffs the following relief:

a) a preliminary and a permanent injunction enjoining Oceaneering and its agents, employees, and representatives from using, disclosing, or publishing any and all trade secrets and confidential information obtained from Wright's Well Control Services under the Reciprocal Nondisclosure of Confidential & Proprietary Information Agreement, and from manufacturing, using, selling, or offering for sale any device or products embodying any such confidential or trade secret information;

b) a finding that the '725 Patent has been and continues to be infringed by Defendant;

c) a finding that the '185 Patent has been and continues to be infringed by Defendant;

d) a finding that Defendant's patent infringement has been and continues to be willful;

e) a finding that Defendant has misappropriated WWCS's efforts and investment in designing, developing, and building the remediation system under Texas Common Law;

f) a finding that Defendant has have misappropriated WWCS's trade secrets under Texas Common Law;

g) a finding that Defendant has misappropriated WWCS's trade secrets under Louisiana Uniform Trade Secret Act;

h) a finding that Defendant has breached the 2009 Reciprocal Nondisclosure of Confidential & Proprietary Information Agreement;

i) a finding that Defendant has breached its confidential relationship with WWCS;

j) a finding that Defendant tortiously interfered with WWCS's prospective business relations;

k) a finding that Defendant fraudulently induced WWCS into executing the Reciprocal Nondisclosure of Confidential & Proprietary Information Agreement;

l) a finding that Defendant disparaged WWCS's business to third parties;

m) a finding that Defendant has engaged and continues to engage in unfair competition;

n) actual damages, both past and future;

o) exemplary damages;

p) treble damages due to Defendant's willful actions, pursuant to 35 U.S.C. § 284;

q) attorneys' fees pursuant to Tex. Civ. Practice and Remedies Code § 38.001 et seq. and/or 35 U.S.C. § 285;

r) all pre-judgment and post-judgment interest and costs including, but not limited to, all experts fees, deposition costs, and premiums for bond for preliminary injunction; and

s) all other relief, at law and equity, to which they may be entitled.

DATED: December 8, 2017

RESPECTFULLY SUBMITTED

/s/ TERRY JOSEPH

WILLIAMS LAW GROUP, LLC
Conrad S.P. Williams, III (#14499)
Meredith R. Durham (#33112)
909 Poydras Street, Suite 1625
New Orleans, LA 70112
TEL: (985) 876-7595
FAX: (985) 876-7594
duke@williamslawgroup.org
Meredith@williamslawgroup.org

and

Guy E. Matthews (*pro hac vice*)
Texas Bar No. 13207000
Terry B. Joseph (*pro hac vice*)

Texas Bar No. 11029500
John D. Holman (*pro hac vice*)
Texas Bar No. 24082232
David M. Lodholz (*pro hac vice*)
Texas Bar No. 24070158
MATTHEWS, LAWSON, MCCUTCHEON, & JOSEPH, PLLC
2000 Bering Drive, Suite 700
Houston, Texas 77057
TEL: (713) 355-4200
FAX: (713) 355-9689
gmatthews@matthewsfirm.com
tjoseph@matthewsfirm.com
jholman@matthewsfirm.com
dlodholz@matthewsfirm.com

and

James Parkerson Roy (La. 11511)
Elwood C. Stevens, Jr. (La. 12459)
John P. Roy (La. 32048)
DOMENGEAUX WRIGHT ROY & EDWARDS LLC
556 Jefferson Street, 5th Floor
Lafayette, LA 70501
Telephone: 337-233-3033
Facsimile: 337-232-8213
jimr@wrightroy.com
elwoods@wrightroy.com
johnr@wrightroy.com

ATTORNEYS FOR PLAINTIFF
WRIGHT'S WELL CONTROL SERVICES, LLC

CERTIFICATE OF SERVICE

I hereby certify that the foregoing document has been filed on this 8th day of December, 2017, pursuant to the electronic filing requirements of the United States District Court for the Eastern District of Louisiana, which provide for service on counsel of record in accordance with the electronic filing protocols in place.

/s/ Terry Joseph

EXHIBIT 2

US008413725B2

(12) **United States Patent**
Wright et al.

(10) **Patent No.: US 8,413,725 B2**
(45) **Date of Patent: Apr. 9, 2013**

(54) **SUBSEA FLUID SEPARATOR**

(76) Inventors: **David C Wright**, Humble, TX (US); **Jeffery Wilbert Dufrene**, Thibodaux, LA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 134 days.

(21) Appl. No.: **12/978,486**

(22) Filed: **Dec. 24, 2010**

(65) **Prior Publication Data**

US 2011/0155384 A1 Jun. 30, 2011

Related U.S. Application Data

(60) Provisional application No. 61/290,168, filed on Dec. 24, 2009.

(51) **Int. Cl.**
E21B 7/12 (2006.01)

(52) **U.S. Cl.** **166/357**; 166/105.1; 166/54

(58) **Field of Classification Search** 166/357, 166/386, 316, 328, 332.3, 193, 54, 344, 335
See application file for complete search history.

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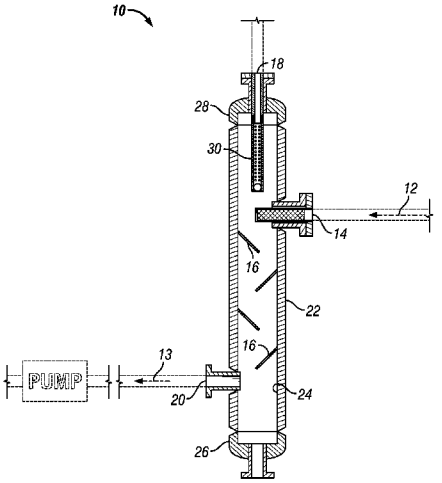
Primary Examiner — Thomas Beach
Assistant Examiner — Aaron Lembo
(74) *Attorney, Agent, or Firm* — The Compton Law Firm, P.C.; Scott D. Compton

(57) **ABSTRACT**

The present application is directed to a subsea separator. The subsea separator suitably comprises (a) a housing having an inlet for receiving a fluid mixture, a non-gaseous fluid outlet located along the housing at a point lower than the inlet, and a gas outlet located along the housing at a point higher than the inlet; (b) a deflector means located within the housing for acting on fluid entering the housing; and (c) a sealing means in communication with the gas outlet for preventing non-gaseous fluid from exiting the housing through the gas outlet, the sealing means being operationally configured to open and seal the gas outlet based on the volume of non-gaseous fluid within the separator; wherein the separator is operationally configured to operate under a differential pressure including a greater external hydrostatic pressure than internal pressure and vice versa.

20 Claims, 4 Drawing Sheets



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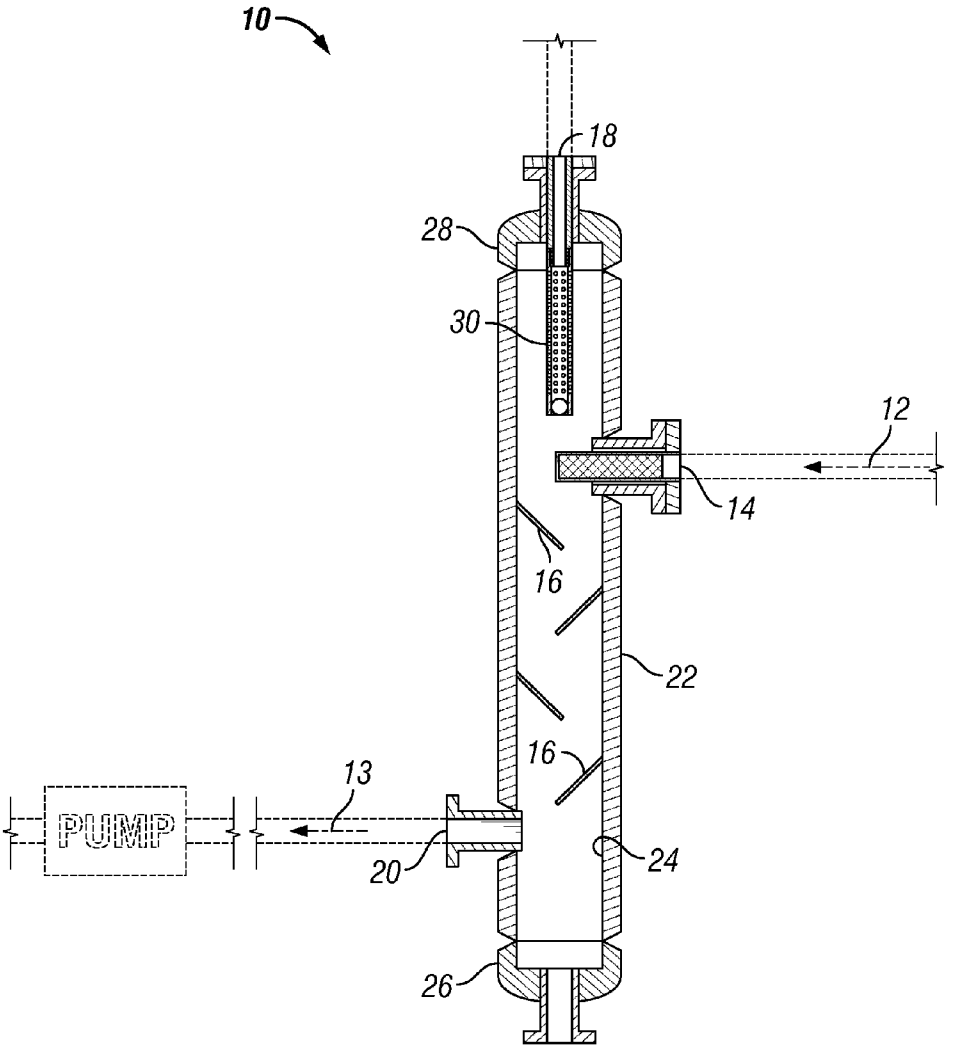

FIG. 1

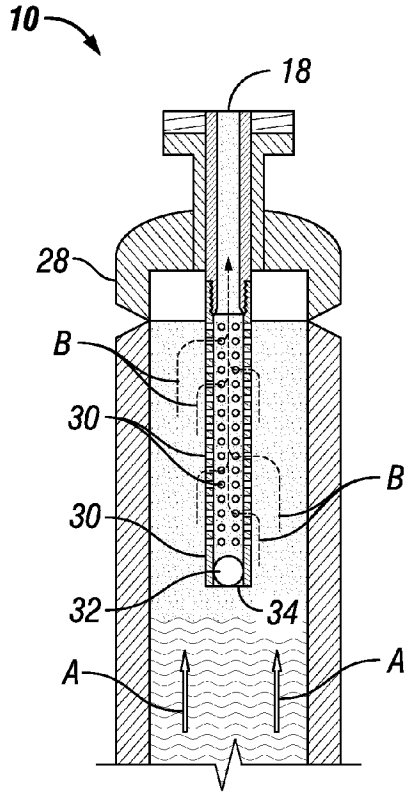

FIG. 2

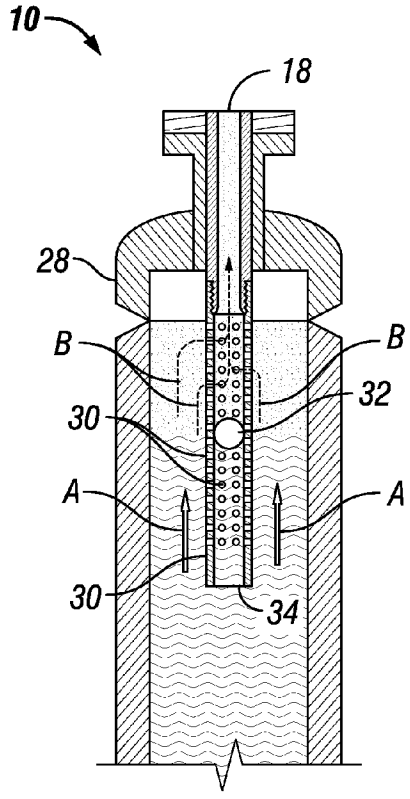

FIG. 3

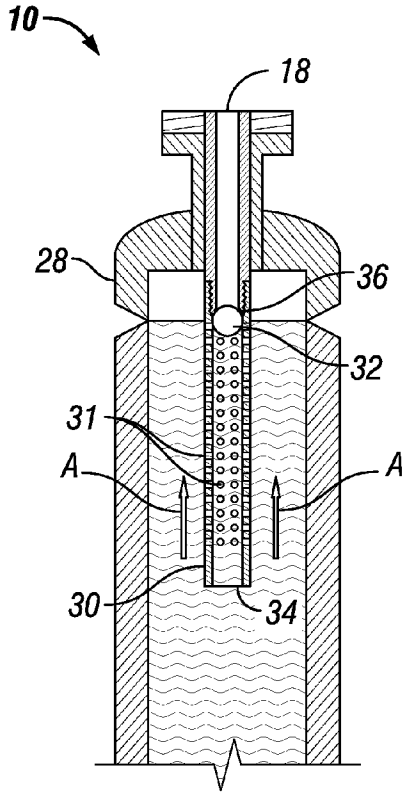

FIG. 4

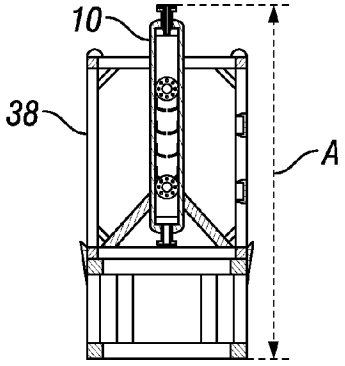

FIG.5

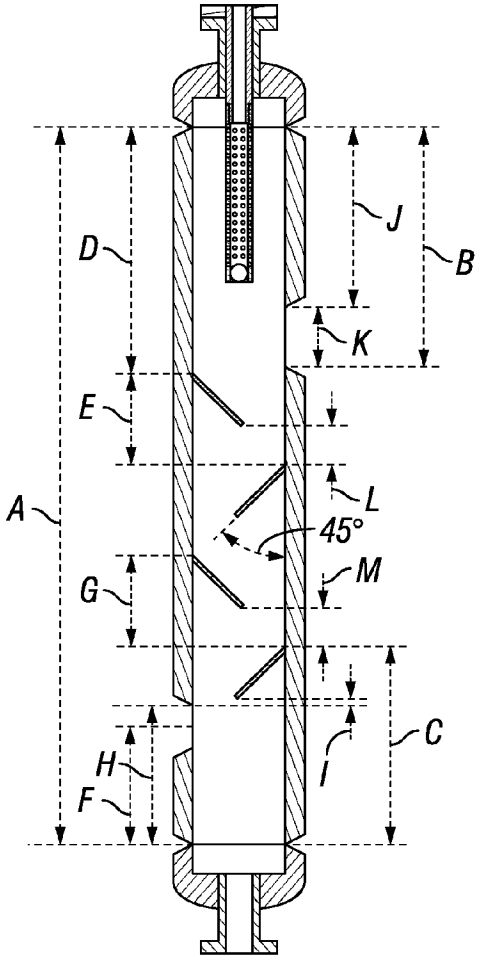

FIG. 6

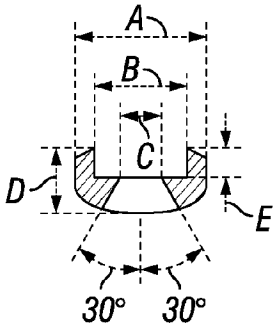

FIG. 8

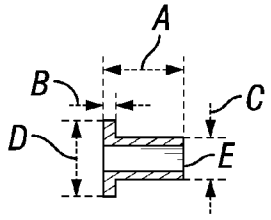

FIG. 9

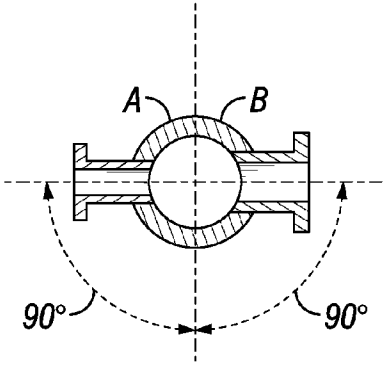

FIG. 7

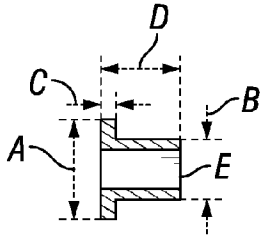

FIG. 10

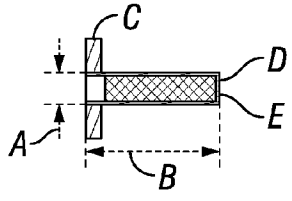

FIG. 11

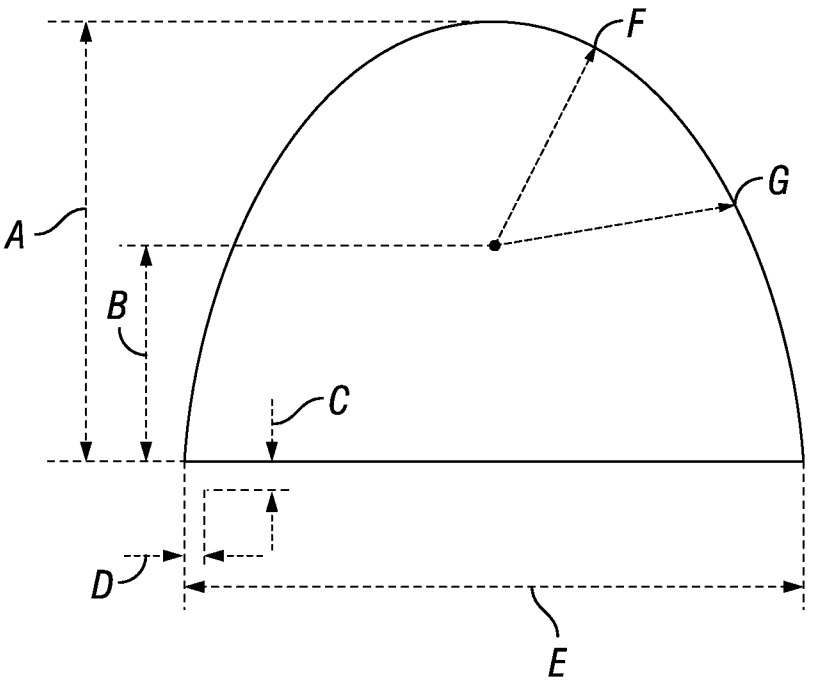

FIG. 12

SUBSEA FLUID SEPARATOR

CROSS-REFERENCE TO RELATED APPLICATIONS

The application is entitled to the benefit of the filing date of the prior-filed provisional application No. 61/290,168, filed on Dec. 24, 2009.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

Not applicable.

FIELD OF THE APPLICATION

The application relates generally to separating fluids in subsea environments.

BACKGROUND

In subsea operations, it may be desirable to separate a fluid mixture into two or more separate fluid streams prior to conveying the fluid streams to the surface or to a subsea locale. A fluid separator operationally configured to separate a fluid mixture into two or more separate fluid streams, including gas and non-gaseous fluid streams, under subsea external hydrostatic pressure is desired.

SUMMARY

The present application is directed to a subsea separator. The subsea separator suitably comprises (a) a housing having an inlet for receiving a fluid mixture, a non-gaseous fluid outlet located along the housing at a point lower than the inlet, and a gas outlet located along the housing at a point higher than the inlet; (b) a deflector means located within the housing for acting on fluid entering the housing; and (c) a sealing means in communication with the gas outlet for preventing non-gaseous fluid from exiting the housing through the gas outlet, the sealing means being operationally configured to open and seal the gas outlet based on the volume of non-gaseous fluid within the separator; wherein the separator is operationally configured to operate under a differential pressure including a greater external hydrostatic pressure than internal pressure and vice versa.

The present application is also directed to a deep water separator for separating gas from a liquid/gas mixture. The separator suitably comprises (a) a cylindrical housing having a substantially uniform wall thickness; (b) a first end cap for sealing the housing at a first end and a second end cap for sealing the periphery of the housing at a second end, the second end cap having a gas outlet there through; (c) a fluid inlet located along the housing for receiving a liquid/gas mixture there through; (d) a non-gaseous fluid outlet located along the housing at a point lower than the fluid inlet, the non-gaseous fluid outlet being effective for discharging non-gaseous fluid there through; (e) a deflector means within the housing, the deflector means being located between the fluid inlet and the non-gaseous fluid outlet; and (f) a ball valve assembly fluidly connected to the gas outlet operationally configured to open and seal the gas outlet based on the volume of non-gaseous fluid within the separator.

The present application is also directed to a method of separating gas from a liquid/gas mixture in a subsea environment at an external hydrostatic pressure up to about 463 bar (about 6708 psi). Suitably, the method comprises the steps of

(a) providing a separator including (1) a housing having an inlet for receiving a liquid/gas mixture, a non-gaseous fluid outlet located along the housing at a point lower than the inlet, and a gas outlet located along the housing at a point higher than the inlet; (2) a deflector means located within the housing at a point lower than the inlet for acting on the liquid/gas mixture entering the housing; and (3) a sealing means in communication with the gas outlet for preventing non-gaseous fluid from exiting the housing through the gas outlet, the sealing means being operationally configured to open and seal the gas outlet based on the volume of non-gaseous fluid within the separator; wherein the separator is operationally configured to operate under a differential pressure including a greater external hydrostatic pressure than internal pressure and vice versa; (b) installing the separator subsea to a depth producing an external hydrostatic pressure up to about 463 bar (about 6708 psi); (c) fluidly connecting the separator to (1) a fluid source containing a liquid/gas mixture and (2) a pump means; and (d) receiving a fluid/gas mixture from the fluid source wherein the fluid/gas mixture contacts the deflector means to separate gas out of the fluid/gas mixture.

BRIEF DESCRIPTION OF THE FIGURES

FIG. **1** illustrates a sectional view of a simplified embodiment of the present separator.

FIG. **2** illustrates a partial sectional view of the separator of FIG. **1** wherein the non-gaseous fluid level is below the valve sealing means and wherein the valve sealing means is in a non-sealed position.

FIG. **3** illustrates a partial sectional view of the separator of FIG. **1** wherein the volume of non-gaseous fluid within the separator is greater than the volume of non-gaseous fluid of FIG. **2**, the valve sealing means being in a non-sealed position.

FIG. **4** illustrates a partial sectional view of the separator of FIG. **1** wherein the valve sealing means is in a sealed position.

FIG. **5** illustrates a side elevational view of the separator attached to a frame.

FIG. **6** illustrates a sectional view of a simplified embodiment of a separator.

FIG. **7** illustrates a top sectional view of the separator of FIG. **6**.

FIG. **8** illustrates a side sectional view of an end cap of the separator of FIG. **6**.

FIG. **9** illustrates a sectional view of the non-gaseous fluid outlet of the separator of FIG. **6**.

FIG. **10** illustrates a sectional view of a fluid inlet of the separator of FIG. **6**.

FIG. **11** illustrates a sectional view of a filter assembly of the fluid inlet of FIG. **10**.

FIG. **12** illustrates a plan view of a deflector means of the separator of FIG. **6**.

BRIEF DESCRIPTION

It has been discovered that a fluid separator may effectively separate a fluid mixture into two or more fluid streams in subsea environments wherein the internal pressure of the separator is less than the external hydrostatic pressure, and vice versa. It has also been discovered that a fluid separator may be installed in deep water or ultra deep water environments and employed to separate gas from liquid/gas fluid streams, the separated gas being discharged via a gas outlet of the separator and non-gaseous fluid being discharged via a separate non-gaseous outlet. In the event the separator fills with non-gaseous fluid, the separator is operationally config-

ured to prevent non-gaseous fluid from exiting the separator through the gas outlet. Heretofore, such a desirable achievement has not been considered possible, and accordingly, the separator and method of this application measure up to the dignity of patentability and therefore represents a patentable concept.

Before describing the invention in detail, it is to be understood that the present separator and method are not limited to particular embodiments. It is also to be understood that the terminology used herein is for the purpose of describing particular embodiments only, and is not intended to be limiting. As used in this specification and the appended claims, the phrase "fluid" refers to flowable gaseous fluids, flowable non-gaseous fluids, and combinations thereof. The term "fresh water" refers to an aqueous solution having a relatively low concentration of dissolved salts. The terms "install," "installation," and the like refer to submersing the separator to a desired depth whereby the separator is releasably attached to fluid conduits for receiving and discharging fluid. The phrase "deep water" includes subsea depths from about 914 m to about 2286 m (about 3,000 feet to about 7,500 feet). The phrase "ultra deep water" includes subsea depths of about 2286 m or more (about 7,500 feet or more).

In one aspect, the application provides a subsea separator operationally configured to separate gas from a liquid/gas mixture and discharge gases and liquids separately.

In another aspect, the application provides a subsea separator operationally configured to separate gas from non-gaseous fluid prior to the gas and non-gaseous fluid being conveyed toward the surface.

In another aspect, the application provides a subsea separator in fluid communication with a subsea pump, the separator being operationally configured to discharge substantially gas-free fluids to the pump.

In another aspect, the application provides a subsea separator in fluid communication with a subsea pump, the separator being operationally configured to prevent the discharge of non-gaseous fluid via a gas outlet of the separator.

In another aspect, the application provides a subsea separator including a cylindrical housing constructed from metal alloy, the housing having a substantially uniform wall thickness.

In another aspect, the application provides a subsea separator including a cylindrical housing constructed from carbon steel, the housing having a substantially uniform wall thickness of about 7.62 cm (3.0 inches) or more.

In another aspect, the application provides a subsea separator qualified for depths of about 2195 meters (about 7200 feet) according to standards established by the American Petroleum Institute ("API").

In another aspect, the application provides a means of acting on a target fluid mixture in a subsea environment to separate gas from the target fluid prior to conveying the separated fluids to one or more surface or subsea locales.

In another aspect, the application provides a subsea separator having a sealing means operationally configured to seal the separator according to the volume of non-gaseous fluid within the separator.

In another aspect, the application provides a separator that may be fabricated to operate at subsea depths up to about 4572 meters (about 15,000 feet) and/or an external hydrostatic pressure of about 463 bar (about 6708 psi).

In another aspect, the application provides a separator for separating gas from a liquid/gas mixture, the separator being operational at subsea depths up to about 4572 meters (about 15,000 feet) and/or an external hydrostatic pressure of about 463 bar (about 6708 psi).

In another aspect, the application provides a subsea fluid separator that may be built to scale.

In another aspect, the application provides a subsea separator that may be tethered to a surface vessel. Alternatively, the subsea separator may be tethered to one or more land based objects.

In another aspect, the application provides a subsea fluid separator that meets all required American Petroleum Institute ("A.P.I.") tolerances. In another aspect, the fluid separator may have greater tolerances than the corresponding A.P.I. tolerances.

In another aspect, the application provides a fluid separator operationally configured for deep water or ultra deep water operation, the separator having any number of fluid inlets and fluid outlets as desired.

In another aspect, the application provides a subsea fluid separator including an internal pressure ranging from vacuum up to about 690 bar (about 10000 psi) during use.

In another aspect, the application provides a subsea fluid separator operationally configured to receive a liquid/gas mixture and discharge gas-free fluid there from.

In another aspect, the application provides a deep water or ultra deep water fluid separator defined by a cylindrical housing constructed from a metal alloy, the housing wall comprising a thickness of about fifteen percent or more of the outer diameter of the housing.

In another aspect, the application provides a subsea fluid separator defined by a cylindrical housing and end caps having a rounded outer surface.

Discussion of the System and Method

To better understand the novelty of the subsea fluid separator and method of use thereof, reference is hereafter made to the accompanying drawings. With reference to FIG. **1**, a simplified illustration of the present subsea fluid separator assembly **10** (hereafter "separator") is provided. In general, the separator **10** is operationally configured to receive a fluid stream (represented by arrow **12**) at inlet **14** wherein the fluid stream **12** suitably contacts a deflector means **16** within the separator **10**, the deflector means **16** being operationally configured to promote the separation of gas out from the fluid stream **12**. Suitably, the separator **10** is oriented in a manner effective for separated gas to rise within the separator **10** for venting through a gas outlet **18**. Non-gaseous fluids are suitably discharged via non-gaseous outlet **20**.

For subsea operations, the separator **10** suitably lies in fluid connection with a pump means or vacuum forming device via the non-gaseous outlet **20**. In one example, the separator **10** may be implemented subsea to remove one or more gases from a fluid stream **12** prior to the fluid stream **12** reaching a pump (exposure to continuous volumes of gas may ultimately damage or otherwise compromise the integrity of a pump). In another example, a suitable separator **10** may be employed subsea for separating gas from other flowable non-gaseous fluids in a fluid stream **12** prior to the non-gaseous fluids being discharged to the surface.

In one implementation, the separator **10** suitably includes a liquid/vapor separator operationally configured to separate multi-phase fluids, for example, hydrocarbon products from associated solids and water. In another implementation, the separator **10** is operationally configured to separate a gas phase from a liquid phase and/or an oil phase from a water phase. Depending on the particular purpose of the separator **10**, e.g., the depth of operation and/or fluid separation requirements, the separator **10** may be built to scale. In one embodiment, the separator **10** may include a gas buster as

understood to persons of ordinary skill in the art of petroleum operations. Although gas busters are typically used to vent out gas in return lines to prevent gas from entering a liquid holding tank, the present separator **10** is operationally configured to operate upstream of a pump to vent out gas from the fluid stream **12** to prevent gas from flowing to the pump.

Suitably, the separator **10** includes a housing defined by an outer surface **22** and an inner surface **24**, the wall thickness of the housing varying as desired. The separator **10** is operationally configured to work off gravity whereby the fluid stream inlet **14** and non-gaseous fluid outlet **20** are located along the housing wall in a manner effective whereby fluid entering the separator **10** flows downward contacting the deflector means **16** in a manner effective to separate gas out of the fluid stream **12**, the gas effectively rising toward the top of the separator **10** for venting through the gas outlet **18** and the non-gaseous fluid continuing to flow downward toward the bottom of the separator **10** wherein the non-gaseous fluid is discharged via outlet **20**. In the event the separator **10** fills with non-gaseous fluid, the separator **10** is suitably fitted with a sealing means operationally configured to prevent non-gaseous fluid from exiting the separator through the gas outlet **18**.

Although the separator **10** is not necessarily limited to a particular design, one suitable separator **10** includes a cylindrical housing defined by (1) a first end cap **26** operationally configured to seal the separator **10** housing at a first end, and (2) a second end cap **28** defined by a gas outlet **18** there through, the second end cap **28** being operationally configured to seal the separator **10** housing at a second end, and vent gas through the gas outlet **18**.

Turning to FIGS. **2-4**, the second end cap **28** is suitably fitted with a sealing means operationally configured to respond to non-gaseous fluid levels within the separator **10**. As shown, the sealing means is provided as a ball valve assembly including a perforated tubular member **30** and a ball **32** contained therein, the ball **32** being movable along the interior of the tubular member **30**. Suitably, the ball valve assembly lies in fluid communication with the gas outlet **18** in a manner effective for gas to vent out of the separator **10** via gas outlet **18** while preventing non-gaseous fluid from exiting there through.

The tubular member **30** suitably includes a closed end **34** for supporting the ball **32** at a resting position therein when the non-gaseous fluid level within the separator **10** is equal to or below the closed end **34**. As shown, the tubular member **30** suitably includes one or more perforations **31** each having a size effective to permit gas and non-gaseous fluid to pass there through. Although the separator **10** and accompanying tubular member **30** may be built to scale, the one or more perforations **31** of the tubular member **30** are suitably arranged along the tubular member **30** in a manner effective to provide uninhibited fluid flow in and out of the tubular member **30**. For example, as non-gaseous fluid within the separator **10** rises (see arrows "A"), gas in the separator **10** is suitably forced through the tubular member **30** and gas outlet **18** (see arrows "B"). Depending on the particular implementation of the separator **10**, the surface area of the tubular member **30** may be less than, equal to, or greater than area of the perforations **31** there through, and may include perforations **31** of various size and shape allowing for desired operation of the ball valve assembly. As shown, the one or more perforations **31** may include substantially round holes. In another embodiment, the one or more perforations **31** may be provided as slits.

With attention to FIG. **3**, the one or more perforations **31** are suitably disposed along the tubular member **30** in a manner effective for non-gaseous fluid to flow in and out of the tubular member **30** in a manner effective for the non-gaseous fluid level within the tubular member **30** to substantially correspond to the non-gaseous fluid level in the surrounding separator **10**. As illustrated, the ball **32** is operationally configured to float upon the non-gaseous fluid in a manner effective for the ball **32** to rise and drop according to the level of non-gaseous fluid within the separator **10**.

Suitably, the ball **32** is constructed from one or more buoyant materials effective to maintain the upper portion of the ball **32** above the surface level of the non-gaseous fluid. In the event the separator **10** becomes substantially full of non-gaseous fluid, the ball **32** is suitably operationally configured to rise within the tubular member **30** to form a seal between the separator **10** and gas outlet **18** at the seat **36**, which is disposed along the periphery of the opening of the gas outlet **18** (see FIG. **4**). As the non-gaseous fluid level within the separator **10** drops, the ball **32** drops from a sealed position at seat **36** opening the gas outlet **18** for further venting of any available gas there through.

Although not limited to a particular material, the tubular member **30** is suitably constructed from one or more metals. In one suitable embodiment, the tubular member **30** is constructed from stainless steel. In another suitable embodiment, the tubular member **30** is constructed from carbon steel.

A suitable ball **32** is constructed from one or more materials effective to withstand an internal fluid pressure up to about 690 bar (about 10000 psi). Suitable ball materials include but are not necessarily limited to one or more metals, plastics, rubbers, composite materials, and combinations thereof providing a ball **32** effective to float on methanol and methanol based solutions. In deep water or ultra deep water operation, a suitable ball **66** may be a solid ball constructed from polytetrafluoroethylene. In another embodiment, a suitable ball **32** may be a solid ball constructed from a thermoplastic. In another embodiment, a ball **66** operationally configured to float on methanol and methanol based solutions may include a solid ball constructed from ultra-high-molecular-weight polyethylene ("UHMW"). For subsea salt water applications, if a ball **32** floats on fresh water, the ball **32** may be implemented for use with a salt water based fluid mixture.

As shown in the simplified illustration of FIG. **1**, the inlet **14**, gas outlet **18**, and non-gaseous fluid outlet **20** are operationally configured to releasably and sealably attach to conduit commonly used in subsea operations. In subsea operations, including deep water and ultra deep water applications, the inlet **14** and non-gaseous outlet **20** are suitably operationally configured to releasably and sealably attach to heavy wall pipe for both (1) delivering a fluid stream **12** to the separator **10** and for (2) delivering a non-gaseous fluid stream **13** to a vessel, pump or vacuum forming device. The gas outlet **18** is suitably operationally configured to releasably and sealably attach to coiled tubing, subsea umbilicals, and combinations thereof suitable for deep water and ultra deep water applications. Suitable conduit for use with coil reels includes coiled tubing as common in petroleum operations. Suitable coiled tubing for connecting to the separator **10** in subsea applications has an outer diameter ranging from about 3.81 cm to about 7.4 cm (about 1.5 inches to about 2.9 inches). In another embodiment, suitable coiled tubing for connecting to the separator **10** in subsea applications includes an outer diameter of about 6.05 cm (about 2.38 inches). In addition, the inlet **14** and outlets **18**, **20** may be provided with emergency high pressure quick disconnects, referred to as "hot stabs" by persons of ordinary skill in the art of subsea pumping operations. In one aspect, suitable emergency quick disconnects may be employed to prevent ambient water ingress into the separator **10**. In another aspect, the emergency quick discon-

nects may be employed to allow the respective conduits to release from each of the inlet **14** and outlets **18**, **20** as desired. The separator **10** may also be fluidly connected to a manifold or like device at the inlet **14**.

With reference to FIG. **5**, the separator **10** may also be housed within a frame **38** that is operationally configured to (1) protect the separator **10** from destructive type impacts, (2) support the separator **10** in a substantially upright position on the sea floor for suitable fluid flow there through, and (3) stack the separator **10** upon another subsea framework or component as desired. Suitably, the frame **38** is provided as a cubical or rectangular type metal framework having a substantially planar bottom surface for stacking purposes or for assisting in maintaining the separator **10** in a substantially upright position during subsea operation. Suitably, the separator **10** is joined to the frame **38** via releasable fasteners such as bolts and the like. In another embodiment, the separator **10** may permanently fixed to the frame **38**, e.g., via welds. In still another embodiment, the separator **10** may be fixed to the frame **38** via a combination of releasable fasteners and welds as desired.

As stated above, a suitable subsea separator **10** may be built to scale. For subsea operations at a depth up to about 2195 meters (about 7200 feet), a suitable separator **10** is provided in the simplified illustrations of FIGS. **5-11**, with correlating dimensional information listed in Table 1 below.

TABLE 1

	Distance	
FIG. 5	A	About 5.3 m (about 17.4 feet)
FIG. 6	A	About 277 cm (about 109 inches)
	B	About 91.7 cm (about 36.1 inches)
	C	About 73.9 cm (about 29.1 inches)
	D	About 96.2 cm (about 37.88 inches)
	E	About 35.1 cm (about 13.81 inches)
	F	About 45.7 cm (about 18 inches)
	G	About 35.1 cm (about 13.81 inches)
	H	About 53.8 cm (about 21.19 inches)
	I	About 2.97 cm (about 1.17 inches)
	J	About 81.3 cm (about 32 inches)
	K	About Ø 23.8 cm (about Ø 9.38 inches)
	L	About 16.2 cm (about 6.38 inches)
	M	About 16.2 cm (about 6.38 inches)
FIG. 7	A	About Ø 50.8 cm (about Ø 20 inches)
	B	About Ø 35.6 cm (about Ø 14 inches)
FIG. 8	A	About Ø 2.0 cm (about Ø 0.79 inches)
	B	About Ø 1.4 cm (about Ø 0.55 inches)
	C	About Ø 16.2 cm (about Ø 6.38 inches)
	D	About 1.0 cm (about 0.39 inches)
	E	About 0.438 cm (about 0.17 inches)
FIG. 9	A	About 30.5 cm (about 12 inches)
	B	About 4.44 cm (about 1.75 inches)
	C	About 15.9 cm (about 6.25 inches)
	D	About 29.2 cm (about 11.5 inches)
	E	About 10.16 cm (about 4.00 inch) ANSI 900# Long Weld Neck Flange
FIG. 10	A	About 38.1 cm (about 15 inches)
	B	About 24.77 cm (about 9.75 inches)
	C	About 5.6 cm (about 2.19 inches)
	D	About 30.5 cm (about 12 inches)
	E	About 15.2 cm (about 6.00 inch) ANSI 900# Long Weld Neck Flange
FIG. 11	A	About 11.43 cm (about 4.5 inches)
	B	About 50.8 cm (about 20 inches)
	C	About 15.2 cm (about 6.00 inch) ANSI 900# Blind Flange
	D	About 10.2 cm (about 4 inches) Pipe
	E	Drill as many holes as possible; each hole about Ø 0.16 cm (about Ø 0.063 inches)

Suitably, the separator **10** described in Table 1 may be constructed from 4130 alloy steel. The end caps **26**, **28**, the inlet **14**, and outlets **18**, **20** are suitably welded to the separator **10** housing along weld joints as illustrated. The inner diameter of the separator **10** is about 35.6 cm (about 14 inches), and the separator **10** has a maximum fluid volume capacity up to about 284 liters (about 75 gallons) at atmospheric pressure. The outer diameter of the separator **10** is about 50.8 cm (about 20 inches).

With reference to FIG. **12**, a suitable deflector means **16** may include a baffle type member or other plate type member extending from the inner surface **24** of the separator **10** and operationally configured to promote separation of gases from non-gaseous fluid as the fluid stream **12** flows toward the bottom of the separator **10**. Each deflector means **16** suitably includes the dimensions as listed in Table 2.

TABLE 2

A	About 24.1 cm (about 9.5 inches)
B	About 11.8 cm (about 4.63 inches)
C	About 1.5 cm (about 0.60 inches)
D	About 1.2 cm (about 0.46 inches)
E	About 34.3 cm (about 13.5 inches)
F	Radius of about 12.4 cm (about 4.88 inches)
G	Radius of about 33.2 cm (about 13.06 inches)

In one embodiment, the deflector means **16** may be constructed from one or more metals. In another embodiment, the deflector means **16** may be constructed from steel alloy. In another embodiment, the deflector means **16** may be constructed from carbon steel plate material that may be riveted, bolted, or welded to the inner surface **24** of the separator **10** housing. In still another embodiment, the deflector means **16** may be constructed from A36 steel as established by the standards organization ASTM International, with headquarters in West Conshohocken, Pa.

The separator **10** of FIGS. **5-12** is operationally configured for use subsea and at an ambient external hydrostatic pressure up to about 463 bar (about 6708 psi). For example, in the Gulf of Mexico, this equates to subsea installation of the separator **10** at a depth up to about 4572 meters (about 15000 feet). Suitably, the separator **10** of FIGS. **5-12** is operationally configured to operate at an internal fluid pressure ranging from vacuum up to about 690 bar (about 10000 psi). Thus, the separator **10** of FIGS. **5-12** is operationally configured to operate under a differential pressure including a greater external hydrostatic pressure on the separator **10** than the internal pressure of the separator **10**, and vice versa. At maximum external hydrostatic pressure and maximum internal pressure, the pressure differential of the separator **10** is about 227 bar (about 3292 psi). Likewise, the separator **10** may operate under vacuum at an ambient external hydrostatic pressure up to about 463 bar (about 6708 psi).

The invention will be better understood with reference to the following non-limiting example, which is illustrative only and not intended to limit the present invention to a particular embodiment.

Example 1

In a first non-limiting example, the separator **10** is installed in the Gulf of Mexico at a depth producing an ambient external hydrostatic pressure of about 126 bar (about 1833 psi). The inlet **14** is fluidly connected to a subsea pipeline end termination wherein the separator **10** is operationally configured to receive fluid from the pipeline and separate gas out from the non-gaseous fluid. The non-gaseous outlet **20** is fluidly connected to a subsea pump providing a vacuum resulting in an internal pressure of the separator **10** of about 3.5 bar (about 50 psi). During separator **10** operation, the

external hydrostatic pressure is about 36.66 times greater than the internal pressure of the separator **10**.

Persons of ordinary skill in the art will recognize that many modifications may be made to the present application without departing from the spirit and scope of the application. The embodiment(s) described herein are meant to be illustrative only and should not be taken as limiting the invention, which is defined in the claims.

We claim:

1. A subsea separator, comprising:

a housing having an inlet for receiving a fluid mixture, a non-gaseous fluid outlet located along the housing at a point lower than the inlet, and a gas outlet located along the housing at a point higher than the inlet;

baffle type members located within the housing for acting on fluid entering the housing; and

ball valve assembly located within the housing and in communication with the gas outlet for preventing non-gaseous fluid from exiting the housing through the gas outlet, the ball valve assembly being operationally configured to open and seal the gas outlet based on the volume of non-gaseous fluid within the separator;

wherein the separator is operationally configured to operate under vacuum.

2. The separator of claim **1** wherein the separator has a pressure differential of about 227 bar (about 3292 psi).

3. The separator of claim **1** wherein the separator is operationally configured to operate at an internal fluid pressure ranging from vacuum up to about 690 bar (about 10000 psi) in a subsea environment including an external hydrostatic pressure up to about 463 bar (about 6708 psi).

4. The separator of claim **2** wherein the separator is operationally configured to operate at an internal fluid pressure ranging from vacuum up to about 690 bar (about 10000 psi).

5. The separator of claim **1** wherein the housing has a substantially uniform wall thickness.

6. The separator of claim **1** wherein the housing is constructed from carbon steel.

7. The separator of claim **1** wherein the ball valve assembly has (1) a perforated tubular member releasably attached at the gas outlet and in fluid communication with the gas outlet, and (2) a ball contained within the tubular member, the ball being operationally configured to (a) float upon the non-gaseous fluid within the separator, and (b) form a seal at the gas outlet effective to seal the second end of the housing.

8. The separator of claim **7** wherein the ball is operationally configured to float on methanol.

9. The separator of claim **7** wherein the ball is a solid ball constructed from ultra-high-molecular-weight polyethylene.

10. The separator of claim **1** wherein the baffle type members include outer edges.

11. The separator of claim **1** further including an external frame attached thereto.

12. The separator of claim **1** wherein the separator is operationally configured to be fluidly connected to a subsea pump via the non-gaseous fluid outlet.

13. The separator of claim **1** wherein the separator includes an elongated cylindrical housing having externally rounded ends.

14. A deep water separator for separating gas from a liquid/gas mixture comprising:

a cylindrical housing having a substantially uniform wall thickness;

a first end cap for sealing the housing at a first end and a second end cap for sealing the periphery of the housing at a second end, the second end cap having a gas outlet there through;

a fluid inlet located along the housing for receiving a liquid/gas mixture there through;

a non-gaseous fluid outlet located along the housing at a point lower than the fluid inlet, the non-gaseous fluid outlet being effective for discharging non-gaseous fluid there through;

baffle type members having outer edges extending from the inner surface of the housing to a point within the housing, the outer edges of the baffle type members being located between the fluid inlet and the non-gaseous fluid outlet; and

a ball valve assembly located within the housing and fluidly connected to the gas outlet, the ball valve assembly being operationally configured to open and seal the gas outlet based on the volume of non-gaseous fluid within the separator.

15. The separator of claim **14** wherein the housing and end caps are constructed from a metal alloy.

16. The separator of claim **14** wherein the separator is operationally configured to operate at an internal fluid pressure ranging from vacuum up to about 690 bar (about 10000 psi) in a subsea environment including an external hydrostatic pressure up to about 463 bar (about 6708 psi).

17. The separator of claim **14** wherein the liquid/gas mixture includes methanol.

18. A method of separating gas from a liquid/gas mixture in a subsea environment at an external hydrostatic pressure up to about 463 bar (about 6708 psi), comprising:

providing a separator including

a housing having an inlet for receiving a liquid/gas mixture, a non-gaseous fluid outlet located along the housing at a point lower than the inlet, and a gas outlet located along the housing at a point higher than the inlet;

baffle type members having outer edges extending from the inner surface of the housing to a point within the housing lower than the inlet and above the non-gaseous fluid outlet for acting on the liquid/gas mixture entering the housing; and

a ball valve assembly located within the housing and in communication with the gas outlet for preventing non-gaseous fluid from exiting the housing through the gas outlet, the ball valve assembly being operationally configured to open and seal the gas outlet based on the volume of non-gaseous fluid within the separator;

wherein the separator is operationally configured to operate under vacuum;

installing the separator subsea to a depth producing an external hydrostatic pressure up to about 463 bar (about 6708 psi):

fluidly connecting the separator to (1) a fluid source containing a liquid/gas mixture and (2) a pump; and

receiving a fluid/gas mixture from the fluid source wherein the fluid/gas mixture contacts the baffle type members to separate gas out of the fluid/gas mixture.

19. The method of claim **18** further including discharging gas past the ball valve assembly through the gas outlet and discharging nongaseous fluid through the non-gaseous fluid outlet.

20. The method of claim **18** wherein the liquid/gas mixture includes methanol.

* * * * *

EXHIBIT 3

Assignment of Rights, Title and Interest in Invention (Multiple inventors; single assignee)	Docket Number WWCS-005

Assignee Information

Name	Wright's Well Control Services, LLC		
Address (line 1)	3303 Cypresswood Drive		
Address (line 2)			
City	Spring	State	TX
Country	US	Postal Code	77388

Title of Invention:

Subsea Technique For Promoting Fluid Flow

This is an Assignment of the following rights, title and interest: (check all that apply):

- [x] United States of America rights, title and interest in the invention
- [x] Foreign rights, title and interest in the invention
- [x] United States Patent Application Serial No. 12/978,448
  Date of Execution: _____ Date of Filing: 12/24/2010
- [ ] United States Provisional Patent Application Serial No. _____
- [ ] United States Patent No(s). _____
- [ ] International (PCT) Patent Application Serial No. _____
- [ ] Other (specify) _____

Inventors (assignors)

Name	Address
David C. Wright	3303 Cypresswood Drive, Spring, TX 77388
Jeffery Wilbert Dufrene	1493 Burma Rd., Thibodaux, LA 70301

WR 1647
EXHIBIT NO. 8
30(B)(6)
K. Donnelly

WWCS001713

Assignment of Rights, Title and Interest in Invention (Multiple inventors; single assignee)	Docket Number WWCS-005

Whereas, we, the above-identified Inventors, have invented certain new and useful improvements in the Invention identified above and described in the above-identified patent application(s) and/or patent(s) (hereinafter referred to as "Invention");

And, whereas we desire to assign our above-identified rights, title and interest in the Invention to the above-identified Assignee;

Now, this indenture witnesseth, that for good and valuable consideration, the receipt whereof is hereby acknowledged;

We hereby assign, sell and transfer our above-identified rights, title and interest in said Invention, said application (s) as identified above, including any divisions, continuations, and continuations-in-part thereof, and in and to any and all Letters Patent of the United States, and countries foreign thereto, which may be granted or have granted for said Invention and in and to any and all reissues and reexaminations thereof, and in and to any and all priority rights, Convention rights, and other benefits accruing or to accrue to us with respect to the filing of applications for patents or securing of patents in the United States and countries foreign thereto, unto said Assignee;

And we hereby authorize and request the Director of the United States Patent and Trademark Office to issue any United States Letters Patent which may issue for said Invention to said Assignee, as assignee of the whole right, title and interest thereto;

And we further agree to sign and execute all neccessary and lawful future documents, including applications for foreign patents, for filing divisions, continuations and continuations-in-part of said application for patent, and/or, for obtaining any reissue or reissues of any Letters Patent which may be granted for my aforesaid Invention, as the Assignee or its Designee(s) may from time to time require and prepare at its own expense.

Inventors' Signatures (if Notarization is desired, do not sign here and proceed to next page)

Name	Signature/Date
David C. Wright	
Jeffery Wilbert Dufrene	

Assignment of Rights, Title and Interest in Invention (Multiple inventors; single assignee)	Docket Number WWCS-005

Notarization
(Although notarization is not neccessary, it will be considered prima facie evidence of execution pursuant to 35 U.S.C. 261.)

Executed this 11th day of February, in the year 2015

at

Signature of Assignor (or of authorized signatory if Assignor is a corporation, partnership or association)

State of Texas

County of Harris

Before me personally appeared David C. Wright who acknowledged the foregoing instrument to be a free act and deed and also represented that he or she is authorized to execute the same this 11th day of February, in the year 2015

TERRY LEE MCCUTCHEON
Notary Public, State of Texas
My Commission Expires
August 14, 2017

(Notary Public)

Executed this 12 day of May, in the year 2015

at

Signature of Assignor (or of authorized signatory if Assignor is a corporation, partnership or association)

State of Louisiana

County of Terrebonne

Before me personally appeared Jeffery Wilbert Dufrene who acknowledged the foregoing instrument to be a free act and deed and also represented that he or she is authorized to execute the same this 12 day of May, in the year 2015

(Notary Public)

Executed this _____ day of _____, in the year _____

at

Signature of Assignor (or of authorized signatory if Assignor is a corporation, partnership or association)

State of _____

County of _____

Before me personally appeared _____ who acknowledged the foregoing instrument to be a free act and deed and also represented that he or she is authorized to execute the same this _____ day of _____, in the year _____

(Notary Public)

WWCS001715

Assignment of Rights, Title and Interest in Invention (Multiple inventors; single assignee)	Docket Number WWCS-006

Assignee Information

Name	Wright's Well Control Services, LLC		
Address (line 1)	3303 Cypresswood Drive		
Address (line 2)			
City	Spring	State	TX
Country	US	Postal Code	77388

Title of Invention:

Subsea Fluid Separator

This is an **Assignment** of the following rights, title and interest: (check all that apply):

- [x] United States of America rights, title and interest in the invention
- [x] Foreign rights, title and interest in the invention
- [ ] United States Patent Application Serial No. _____
  Date of Execution: _____ Date of Filing: _____
- [ ] United States Provisional Patent Application Serial No. _____
- [x] United States Patent No(s). 8,413,725
- [ ] International (PCT) Patent Application Serial No. _____
- [ ] Other (specify) _____

Inventors (assignors)

Name	Address
David C. Wright	3303 Cypresswood Drive, Spring, TX 77388
Jeffery Wilbert Dufrene	1493 Burma Rd., Thibodaux, LA 70301

Assignment of Rights, Title and Interest in Invention (Multiple inventors; single assignee)	Docket Number WWCS-006

Whereas, we, the above-identified Inventors, have invented certain new and useful improvements in the Invention identified above and described in the above-identified patent application(s) and/or patent(s) (hereinafter referred to as "Invention");

And, whereas we desire to assign our above-identified rights, title and interest in the Invention to the above-identified Assignee;

Now, this indenture witnesseth, that for good and valuable consideration, the receipt whereof is hereby acknowledged;

We hereby assign, sell and transfer our above-identified rights, title and interest in said Invention, said application (s) as identified above, including any divisions, continuations, and continuations-in-part thereof, and in and to any and all Letters Patent of the United States, and countries foreign thereto, which may be granted or have granted for said Invention and in and to any and all reissues and reexaminations thereof, and in and to any and all priority rights, Convention rights, and other benefits accruing or to accrue to us with respect to the filing of applications for patents or securing of patents in the United States and countries foreign thereto, unto said Assignee;

And we hereby authorize and request the Director of the United States Patent and Trademark Office to issue any United States Letters Patent which may issue for said Invention to said Assignee, as assignee of the whole right, title and interest thereto;

And we further agree to sign and execute all neccessary and lawful future documents, including applications for foreign patents, for filing divisions, continuations and continuations-in-part of said application for patent, and/or, for obtaining any reissue or reissues of any Letters Patent which may be granted for my aforesaid Invention, as the Assignee or its Designee(s) may from time to time require and prepare at its own expense.

Inventors' Signatures (if Notarization is desired, do not sign here and proceed to next page)

Name	Signature/Date
David C. Wright	
Jeffery Wilbert Dufrene	

EXHIBIT 4

ASSIGNMENT OF RIGHTS

WHEREAS Mr. Jeffery W. Dufrene (hereafter "Dufrene" or "Assignor"), having an address of 1493 Burma Rd., Thibodaux, Louisiana, 70301, USA, is a named inventor and current owner of an undivided interest in all rights related to past infringement of U.S. Patent No. 8,413,725 ("the '725 Patent") occurring between April 9, 2013 and May 12, 2015;

WHEREAS Mr. David C. Wright (hereafter "Wright" or "Assignee"), having an address of 28019 Buena Way, Spring, Texas, 77386, USA, is a named inventor and current owner of an undivided interest in all rights related to past infringement of the '725 Patent occurring between April 9, 2013 and February 11, 2015;

WHEREAS the Assignor desires to assign his undivided interest in and to the past infringement of the '725 Patent to the Assignee.

For good and valuable consideration, including but not limited to legal and other services provided in connection with the preparation and filing of the '725 Patent before the USPTO, and other good and valuable consideration, the receipt of which is hereby acknowledged:

Dufrene hereby assigns his undivided interest in all past infringement of the '725 Patent occurring between April 9, 2013 and May 12, 2015 to Wright, including any and all rights to seek remedy for past infringement, and any other rights in and to the '725 Patent Dufrene retained from his May 12, 2015 assignment to Wright's Well Control Services, LLC.

Assignor and Assignee hereby agree that this Assignment is effective as of May 12, 2015 ("Effective Date").

It is understood and agreed by Assignor and Assignee that upon the execution of this Assignment, as of the Effective Date Assignee will own all rights and interest related to past infringement of the '725 Patent occurring between April 9, 2013 and May 12, 2015, and that Assignor will not retain any rights in and to the '725 Patent.

Executed on this 5th day of December, in the year 2017.

Jeffery W. Dufrene, Assignor — 12/5/17 Date

David C. Wright, Jr., Assignee — Date