

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

## PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:  MADER Joachim  BARDEHLE PAGENBERG Partnerschaft mbB. Patentanwälte, Rechtsanwälte Prinzregentenplatz 7, D - 81 675 MÜNCHEN DEUTSCHLAND			
		Date of mailing (day/month/year)	01 February 2019 (01.02.2019)
Applicant's or agent's file reference A150629WO		<b>FOR FURTHER ACTION</b> See paragraph 2 below	
International application No. PCT / IB 2018/059389	International filing date (day/month/year) 28 November 2018 (28.11.2018)	Priority date (day/month/year)	
International Patent Classification (IPC) or both national classification and IPC <b>IPC: E21B 33/06 E21B 47/00</b>			
Applicant ABU DHABI NATIONAL OIL COMPANY			

1. This opinion contains indications relating to the following items:

- Box No. I      Basis of the opinion
- Box No. II      Priority
- Box No. III      Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV      Lack of unity of invention
- Box No. V      Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- Box No. VI      Certain documents cited
- Box No. VII      Certain defects in the international application
- Box No. VIII      Certain observations on the international application

### 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/AT Austrian Patent Office Dresdner Straße 87, A-1200 Vienna Facsimile No. +43 / 1 / 534 24-535	Date of completion of this opinion 23 January 2019 (23.01.2019)	Authorized officer WANKMÜLLER A.  Telephone No. +43 / 1 / 534 24-415
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International application No.

IB 2018/059389

Box No. I

Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of:
  - the international application in the language in which it was filed.
  - a translation of the international application into \_\_\_\_\_ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).
2.  This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a)).
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing filed or furnished:
  - a. (means)
    - on paper
    - in electronic form
  - b. (time)
    - in the international application as filed
    - together with the international application in electronic form
    - subsequently to this Authority for the purposes of search
4.  In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

Box No. V Reasoned statement under 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1 - 13	YES
	Claims	---	NO
Inventive step (IS)	Claims	1 - 13	YES
	Claims	---	NO
Industrial applicability (IA)	Claims	1 - 13	YES
	Claims	---	NO

2. Citations and explanations:

The following documents D1 – D4 as given in the Search Report are referred to in this communication. The numbering will be adhered to in the rest of the procedure:

D1: US 4 018 276 A  
D2: US 4 090 395 A  
D3: US 2005/269079 A1  
D4: US 2008/251251 A1

D1 relates to a blowout preventer test plug for use in pressure testing a blowout preventer, the plug comprising a first body having fluid passage ports positioned therethrough and a second body having fluid passage ports positioned therethrough positioned on a tubular extension below the first body so that when the first and second bodies are moved into mating contact the fluid passage ports are closed and a seal is urged into sealing contact between a tubular extension of the first body and the inner diameter of a wellhead bore in which the plug is positioned.

D2 shows a method and apparatus for testing the pressure integrity of blowout preventers and wellhead casing hanger seals. An annular pressure chamber between the blowout preventer and wellhead casing hanger is formed by closing the blowout preventer on a tubular member having a test plug which seats within and sealingly engages the casing hanger. Pressure sensing means disposed along the length of the tubular member are used to monitor pressure above, below and within the annular chamber. Pressure changes detected by the sensing means are indicative of leakage across the blowout preventer or wellhead casing seal.

D3 shows a method and apparatus for testing a blowout preventer with BOP, wellhead and test plug.

D4 shows a test plug tool for use in testing a pressure integrity of a pressure control stack mounted to a wellhead, including a joint between a casing and a casing support in the wellhead. The test plug tool includes a test plug of an appropriate diameter used to pressure test the pressure control stack as well as a joint between any one of a surface casing and the wellhead, an intermediate casing and an intermediate casing mandrel, and a production casing and a production casing

mandrel. The pressure integrity of the wellhead is ensured at each stage of well drilling and well completion, and safety is improved. Optionally, a backpressure valve permits pressurized fluid that leaks below the test plug tool to flow upwardly through a central bore in a landing tool that is secured to the test plug tool to permit detection of the leak.

None of the cited documents D1 – D4 discloses all essential and characteristic features of the present claims 1 – 13, a Blow-out preventer BOP test spool system, comprising:

- A test spool to be mounted between a wellhead and a blow-out-preventer;
- the test spool having an inner cylindrical hole extending in a vertical direction of the test spool;
- the inner cylindrical hole in vertical direction comprising an upper section and a lower section, wherein the lower section comprises a smaller inner diameter than the inner diameter of the upper section; and
- a test plug, insertable into the inner cylindrical hole of the test spool, the test plug having a cylindrical outer shape with an outer diameter that is smaller than the inner diameter of the upper section and is larger than the inner diameter of the lower section, such that the plug can abut a loading shoulder between the upper and lower section and the plug is not able to move further down within the test spool.

The international application is considered to meet the requirements of novelty and inventive step.

Industrial applicability is given.