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| PATENT ASSIGNMENT COVER SHEET |
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 Stylesheet Version v1.2

EPAS ID: PAT7359130

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|------------------------------|----------------|
| SUBMISSION TYPE: | NEW ASSIGNMENT |
| NATURE OF CONVEYANCE: | ASSIGNMENT |

CONVEYING PARTY DATA

| Name | Execution Date |
|-------------------------|----------------|
| ARAMCO SERVICES COMPANY | 01/10/2022 |

RECEIVING PARTY DATA

| | |
|------------------------|--|
| Name: | SAUDI ARAMCO UPSTREAM TECHNOLOGY COMPANY |
| Street Address: | 1 EASTERN AVENUE |
| City: | DHAHRAN |
| State/Country: | SAUDI ARABIA |
| Postal Code: | 31311 |

PROPERTY NUMBERS Total: 45

| Property Type | Number |
|---------------------|----------|
| Application Number: | 17369149 |
| Application Number: | 17466192 |
| Application Number: | 17494387 |
| Application Number: | 17522437 |
| Application Number: | 17522445 |
| Application Number: | 17454176 |
| Application Number: | 17454181 |
| Application Number: | 17394813 |
| Application Number: | 17496608 |
| Application Number: | 63277022 |
| Application Number: | 17522145 |
| Application Number: | 17453285 |
| Application Number: | 17453290 |
| Application Number: | 17550267 |
| Application Number: | 17550631 |
| Application Number: | 17540013 |
| Application Number: | 17539900 |
| Application Number: | 17457215 |
| Application Number: | 17517195 |
| Application Number: | 63239014 |

PATENT

| Property Type | Number |
|---------------------|----------|
| Application Number: | 17513510 |
| Application Number: | 17547627 |
| Application Number: | 17549743 |
| Application Number: | 17551959 |
| Application Number: | 17547112 |
| Application Number: | 17643989 |
| Application Number: | 17548752 |
| Application Number: | 17550069 |
| Application Number: | 17549267 |
| Application Number: | 17551051 |
| Application Number: | 17550653 |
| Application Number: | 17550638 |
| Application Number: | 17643252 |
| Application Number: | 17643931 |
| Application Number: | 17548837 |
| Application Number: | 17548858 |
| Application Number: | 17549062 |
| Application Number: | 17543348 |
| Application Number: | 17551031 |
| Application Number: | 17551913 |
| Application Number: | 17553229 |
| Application Number: | 17643983 |
| Application Number: | 17644641 |
| Application Number: | 63289308 |
| Application Number: | 17550302 |

CORRESPONDENCE DATA

Fax Number: (877)769-7945
Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

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Email: larsen-herman@fr.com, apsi@fr.com
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Address Line 2: P.O.BOX 1022
Address Line 4: MINNEAPOLIS, MINNESOTA 55440-1022

| | |
|--------------------------------|---------------------------|
| ATTORNEY DOCKET NUMBER: | 38136-0001001 |
| NAME OF SUBMITTER: | KIMBERLEY LARSON-HERMAN |
| SIGNATURE: | /Kimberley Larson-Herman/ |

| | |
|---------------------|------------|
| DATE SIGNED: | 06/01/2022 |
|---------------------|------------|

Total Attachments: 9

- source=Q1 2022 quarterly appendix - ASC to SAUTC - FULLY SIGNED & initialed#page1.tif
- source=Q1 2022 quarterly appendix - ASC to SAUTC - FULLY SIGNED & initialed#page2.tif
- source=Q1 2022 quarterly appendix - ASC to SAUTC - FULLY SIGNED & initialed#page3.tif
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- source=Q1 2022 quarterly appendix - ASC to SAUTC - FULLY SIGNED & initialed#page9.tif

ASSIGNMENT

This PATENT ASSIGNMENT (“ASSIGNMENT”), dated as of January 10, 2022 (“Effective Date”), is made and entered into by and between ARAMCO SERVICES COMPANY (“ASC” or “ASSIGNOR”), a Corporation organized and existing under the laws of Texas and having a place of business at 1200 Smith Street Two Allen Building Houston TX 77002 USA, and SAUDI ARAMCO UPSTREAM TECHNOLOGY COMPANY (“SAUTC” or “ASSIGNEE”), a Corporation organized and existing under the laws of Saudi Arabia and having a place of business at 1 Eastern Avenue Dhahran Saudi Arabia 31311.

WHEREAS, ASC is the sole owner of certain patent applications mentioned in Appendix A (“the Patent Applications”); and

WHEREAS, ASC is willing and able to sell, convey, assign, and transfer, to SAUTC on the Effective Date of this ASSIGNMENT, all right, title, and interest, worldwide, in the Patent Applications; and

WHEREAS, SAUTC is desirous of acquiring the Patent Applications, including all right, title, and interest in the Patent Applications in exchange for mutually agreed upon consideration.

NOW, THEREFORE, in consideration of the mutual covenants contained herein and other good and valuable consideration, the sufficiency of which is hereby acknowledged, the parties agree as follows:

1. CONVEYANCE OF THE PATENT APPLICATIONS

a. ASC does hereby sell, assign and transfer to SAUTC, its successors, assigns and other legal representatives, and SAUTC does hereby accept, the entire right, title and interest, worldwide, in and to the Patent Applications, including, without limitation, the rights: (i) to file and prosecute, in its own name wherever so permitted by law or in the name of SAUTC wherever necessary, patent applications, including corresponding and continuing applications, reissues, re-examinations, certificates of invention, and the like, based on any of the Patent Applications; (ii) to claim priority to any of the Patent Applications pursuant to the International Convention for the Protection of Industrial Property, the Patent Cooperation Treaty, the European Patent Convention, and all other treaties of like purposes; and (iii) to protect and enforce any of the foregoing, including, without limitation, all rights to income, royalties, damages and payments now due or hereafter due or payable in respect thereto, and all rights of recovery and of legal action for past or future infringements and of interference proceedings and reexaminations involving any of the foregoing. ASC acknowledges receipt of fair and adequate consideration for this Assignment.

b. ASC shall, when requested by SAUTC and at no cost to ASC, (i) execute or cause to be executed all rightful oaths, assignments, and powers of attorney to SAUTC or to agents and legal representatives of SAUTC, and all other papers necessary and proper to carry out the intent and purpose of this Assignment, (ii) execute all papers necessary in connection with the Patent Applications, and any continuing, divisional, reissue, reexamination or other

corresponding application thereof or post-grant proceeding relating thereto and to execute any separate assignment in connection with any such application as SAUTC may deem necessary or expedient; and (iii) perform all affirmative acts that may be necessary to obtain a grant of a valid patent to SAUTC on any of the inventions claimed or disclosed in the Patent Applications.

c. ASC agrees that SAUTC may, at its discretion, record this Assignment with the United States Patent Office or a Patent Office in any other jurisdiction.

2. **REPRESENTATIONS AND WARRANTIES**

a. ASC represents that it is the owner of the Patent Applications, and of all foreign and domestic patents, patent applications, including continuation-in-part applications, reissues, re-examinations, certificates of invention, and the like that derive priority from, or claim the benefit of the filing date of, the Patent Applications and of all new and useful inventions and improvements that are disclosed in the Patent Applications.

3. **PARAGRAPH HEADINGS**

The paragraph headings are inserted only for purpose of reference. Such captions shall not affect the scope, meaning or intent of the provisions of this Assignment nor shall such headings otherwise be given any legal effect.

4. **ASSIGNMENT BINDING**

This Assignment shall bind the heirs, releases, personal representatives, successors and assigns of the Parties to this Assignment and inure to the benefit of their agents, directors, officers, employees, attorneys, successors and assigns, except as specifically excluded herein.

5. **ENTIRE AGREEMENT**

This Assignment contains the entire agreement between the Parties hereto and constitutes the complete, final and exclusive embodiment of their agreement with respect to the subject matters covered in this Assignment. All prior or contemporaneous agreements, understandings, representations, duties, obligations, and statements, oral or written, are merged into, terminated and/or superseded by this Assignment.

6. **COUNTERPARTS**

This Assignment may be executed in two or more counterparts. Facsimile signatures and electronic signatures shall be acceptable as original signatures.

7. **SEVERABILITY**

In the event that for any reason, one or more of the provisions of this Assignment or their application to any person or company, is held to be invalid, illegal, or unenforceable in any respect or to any extent, such provisions will, nevertheless remain valid, legal, and enforceable in all other respects and to such extent as may be permissible. In addition, any such invalidity, illegality, or unenforceability will not affect any other provision herein, but this Assignment will be construed as if such invalid, illegal, or unenforceable provision had never been contained herein.

8. **AUTHORITY TO ENTER INTO ASSIGNMENT**

The persons signing this Assignment each warrant and represent that they are duly authorized, with full authority to bind the Parties, and that no signature of any other person or entity is necessary to bind the Parties.

[ASSIGNMENT CONTINUES ON SIGNATURE PAGE]

ASC hereby executes this Assignment.

Assignor: Aramco Services Company

Signature: *B. Horton*

Date: JAN. 10, 2022
B. Horton

Name: BOBBY J. HORTON

Title: General Counsel & Corp. Secretary

SAUTC hereby acknowledges and accepts the foregoing assignment.

Assignee: Saudi Aramco Upstream Technology Company

Signature: 

Date: 3/24/22

Name: ASHRAF ALTAHINI

Title: CEO SAUTC

APPENDIX A

| Country | Application No. | Filing Date | Title | Attorney Docket No. | Client Reference No. |
|---------------|-----------------|-------------|--|---------------------|-------------------------|
| United States | 17/369,149 | 7/7/2021 | DIVERTING AGENTS FOR WELL STIMULATION | 38136-1193001 | SA71409/ASC0520-US01-P |
| United States | 17/466,192 | 9/3/2021 | INJECTING MULTIPLE TRACER TAG FLUIDS INTO A WELLBORE | 38136-1205001 | SA71423/ASC0493-US01-P |
| United States | 17/494,387 | 10/5/2021 | HYDRAULIC FRACTURING IN HYDROCARBON-BEARING RESERVOIRS | 38136-1385001 | SA71645/ASC0291-US03-P |
| United States | 17/522,437 | 11/9/2021 | MULTIFUNCTIONAL FLUORESCENT TAGS FOR SUBTERRANEAN APPLICATIONS | 38136-1498001 | SA71649/ASC0578 |
| United States | 17/522,445 | 11/9/2021 | MULTIFUNCTIONAL POLYSACCHARIDE-BASED MUD LOGGING BARCODE TRACERS | 38136-1499001 | SA71650/ASC0579 |
| United States | 17/454,176 | 11/9/2021 | MULTIFUNCTIONAL MAGNETIC TAGS FOR MUD LOGGING | 38136-1500001 | SA71651/ASC0580 |
| United States | 17/454,181 | 11/9/2021 | MULTIFUNCTIONAL FLUORESCENT POLYMER-CLAY COMPOSITE TRACERS | 38136-1501001 | SA71652/ASC0581 |
| United States | 17/394,813 | 8/5/2021 | SEMI-PERMANENT DOWNHOLE SENSOR TOOL | 38136-1521001 | SA71792/ASC0568 |
| United States | 17/496,608 | 10/7/2021 | WATER-SOLUBLE GRAPHENE OXIDE NANOSHEET ASSISTED HIGH TEMPERATURE FRACTURING FLUID | 38136-1537001 | SA71809/ASC0618-US01-NP |
| United States | 63/277,022 | 11/8/2021 | DETERMINING MULTIPHASE FLUID FLOW PROPERTIES | 38136-1539P01 | SA71811/ASC0613-US01-P |
| United States | 17/522,145 | 11/9/2021 | INTEGRATION OF UPHOLES WITH INVERSION-BASED VELOCITY MODELING | 38136-1543001 | SA71817 |
| United States | 17/453,285 | 11/2/2021 | MICRO-ELECTROMECHANICAL SYSTEM (MEMS) INTERFEROMETER FOR FT-MIR SPECTROSCOPY | 38136-1578001 | SA71859/ASC0608-US01-P |
| United States | 17/453,290 | 11/2/2021 | MINIATURE FT-MIR USING A MEMS INTERFEROMETER WITH A METASURFACE EMITTER AND DETECTOR | 38136-1579001 | SA71860/ASC0620-US01-P |
| United States | 17/550,267 | 12/14/2021 | MINIATURE FT-MIR USING A MEMS INTERFEROMETER WITH A METASURFACE EMITTER AND DETECTOR | 38136-1579002 | SA72095/ASC0620-US01-P |
| United States | 17/550,631 | 12/14/2021 | 3D-PRINTED POLYROTAXANE ADDITIVES AND COMPOSITIONS | 38136-1587001 | SA71812/ASC0610-US01-P |

Attorney Docket No. 38136-0001001
Assignment from Aramco Services Company to Saudi Aramco Upstream Technology Company
Q1-2022

| Country | Application No. | Filing Date | Title | Attorney Docket No. | Client Reference No. |
|---------------|-----------------|-------------|---|---------------------|-------------------------|
| United States | 17/540,013 | 12/1/2021 | DETERMINING ROCK PROPERTIES | 38136-1588001 | SA71870/ASC0640-US01 |
| United States | 17/539,900 | 12/1/2021 | ENRICHMENT AND PURIFICATION OF SPECIFIC COMPOUNDS FROM HYDROCARBON RESERVOIR PRODUCED WATER USING MIXED-MODE SOLID PHASE EXTRACTION | 38136-1589001 | SA71871/ASC0634-US01-NP |
| United States | 17/457,215 | 12/1/2021 | HYDROCARBON PHASE BEHAVIOR MODELING FOR COMPOSITIONAL RESERVOIR SIMULATION | 38136-1590001 | SA71872/ASC0631-US01-NP |
| United States | 17/517,195 | 11/2/2021 | REAL TIME MAXIMUM HORIZONTAL STRESS CALIBRATION BASED ON PREDICTED CALIPER LOG WHILE DRILLING | 38136-1625001 | SA71910 |
| United States | 63/239,014 | 8/31/2021 | QUANTITATIVE HYDRAULIC FRACTURING SURVEILLANCE FROM FIBER OPTIC SENSING USING MACHINE LEARNING | 38136-1628P01 | SA71914-ASC0648 |
| United States | 17/513,510 | 10/28/2021 | MEMBRANES OF GLASSY POLYMER BLENDS WITH PEG-CROSSLINKED INTRINSIC MICROPOROUS POLYMERS FOR GAS SEPARATIONS | 38136-1643001 | SA71930-ASC0574 |
| United States | 17/547,627 | 12/10/2021 | SELECTIVELY PREDICTING BREAKDOWN PRESSURES AND FRACTURING SUBTERRANEAN FORMATIONS | 38136-1685001 | ASC0652 |
| United States | 17/549,743 | 12/13/2021 | MULTI-MODAL AND MULTI-DIMENSIONAL GEOLOGICAL CORE PROPERTY PREDICTION USING UNIFIED MACHINE LEARNING MODELING | 38136-1686001 | ASC0658 |
| United States | 17/551,959 | 12/15/2021 | MACHINE-LEARNING BASED RIG-SITE ON-DEMAND DRILLING MUD CHARACTERIZATION, PROPERTY PREDICTION, AND OPTIMIZATION | 38136-1688001 | SA71976/ASC0679 |
| United States | 17/547,112 | 12/9/2021 | MANAGING TRAINING WELLS FOR TARGET WELLS IN MACHINE LEARNING | 38136-1689001 | SA71979/ASC0686 |
| United States | 17/643,989 | 12/13/2021 | SIMULATING SPATIAL CONTEXT OF A DATASET | 38136-1691001 | ASC660 |

Attorney Docket No. 38136-0001001
Assignment from Aramco Services Company to Saudi Aramco Upstream Technology Company
Q1-2022

| Country | Application No. | Filing Date | Title | Attorney Docket No. | Client Reference No. |
|---------------|-----------------|-------------|--|---------------------|----------------------|
| United States | 17/548,752 | 12/13/2021 | ATTENUATED ACID FORMULATIONS FOR ACID STIMULATION | 38136-1692001 | ASC0653 |
| United States | 17/550,069 | 12/14/2021 | MEMBRANES CONTAINING CROWN ETHER-CONTAINING POLYMERS | 38136-1693001 | ASC0656 |
| United States | 17/549,267 | 12/13/2021 | SOURCE PRODUCTIVITY ASSAY INTEGRATING PYROLYSIS DATA AND X-RAY DIFFRACTION DATA | 38136-1694001 | ASC0657 |
| United States | 17/551,051 | 12/14/2021 | CEMENTING A WELLBORE USING A DIRECT INK PRINTING | 38136-1695001 | ASC0668 |
| United States | 17/550,653 | 12/14/2021 | SHAPE MEMORY BEHAVIOR OF EPOXY/SLIDING-RING POLYMER COMPOSITES | 38136-1697001 | SA71972/ASC0669 |
| United States | 17/550,638 | 12/14/2021 | EPOXY COMPOSITIONS CONTAINING POLYROTAXANE ADDITIVES HAVING IMPROVED IMPACT STRENGTH | 38136-1698001 | SA71973/ASC0670 |
| United States | 17/643,252 | 12/8/2021 | FLUID LOSS CONTROL ADDITIVE | 38136-1700001 | SA71980/ASC0687 |
| United States | 17/643,931 | 12/13/2021 | MANIPULATING HYDROPHILICITY AND HYDROPHOBICITY OF CONVENTIONAL DYE MOLECULES FOR TRACER APPLICATIONS | 38136-1701001 | SA71981/ASC0693 |
| United States | 17/548,837 | 12/13/2021 | MANIPULATING HYDROPHILICITY OF CONVENTIONAL DYE MOLECULES FOR WATER TRACER APPLICATIONS | 38136-1702001 | SA71982/ASC0694 |
| United States | 17/548,858 | 12/13/2021 | METHOD OF MANIPULATING HYDROPHILICITY AND HYDROPHOBICITY OF CONVENTIONAL DYE MOLECULES FOR PARTITION TRACER APPLICATIONS | 38136-1703001 | SA71983/ASC0695 |
| United States | 17/549,062 | 12/13/2021 | METHOD AND MATERIALS FOR EXTRACTION OF OIL-SOLUBLE ORGANIC MOLECULAR TRACERS FROM OIL PHASES | 38136-1704001 | SA71984/ASC0700 |
| United States | 17/543,348 | 12/6/2021 | AN INDENTATION METHOD TO MEASURE MULTIPLE ROCK PROPERTIES | 38136-1706001 | ASC0661 |

Attorney Docket No. 38136-0001001
Assignment from Aramco Services Company to Saudi Aramco Upstream Technology Company
Q1-2022

| Country | Application No. | Filing Date | Title | Attorney Docket No. | Client Reference No. |
|---------------|-----------------|-------------|--|---------------------|----------------------|
| United States | 17/551,031 | 12/14/2021 | FLUID FLOW SENSOR USING DRIVER AND REFERENCE ELECTROMECHANICAL RESONATORS | 38136-1707001 | ASC0662 |
| United States | 17/551,913 | 12/15/2021 | REGISTERING FIBER POSITION TO WELL DEPTH IN A WELLBORE | 38136-1708001 | ASC0664 |
| United States | 17/553,229 | 12/16/2021 | DETERMINING FLUID PROPERTIES | 38136-1709001 | ASC0665 |
| United States | 17/643,983 | 12/13/2021 | DETERMINING PARTITION COEFFICIENTS OF TRACER ANALYTES | 38136-1710001 | ASC0667 |
| United States | 17/644,641 | 12/16/2021 | DETERMINING OIL AND WATER PRODUCTION RATES IN MULTIPLE PRODUCTION ZONES FROM A SINGLE PRODUCTION WELL | 38136-1711001 | SA71975/ASC0675 |
| United States | 63/289,308 | 12/14/2021 | A NEGATIVE CARBON CITY GRID FOR CAPTURE AND SEQUESTRATION OF CARBON DIOXIDE IN SUBTERRANEAN FORMATIONS | 38136-1712P01 | SA71985/ASC0697 |
| United States | 17/550,302 | 12/14/2021 | SEQUESTRATION OF CARBON DIOXIDE IN ORGANIC-RICH GEOLOGICAL FORMATIONS | 38136-1713001 | SA71986/ASC0698 |