

(51) International Patent Classification:
F25J 3/02 (2006.01)(21) International Application Number:
PCT/US2014/061017(22) International Filing Date:
17 October 2014 (17.10.2014)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/912,970 6 December 2013 (06.12.2013) US(71) Applicant (for all designated States except US): **EXXON-MOBIL UPSTREAM RESEARCH COMPANY** [US/US]; Corp-urc-sw359, P.o. Box 2189, Houston, TX 77252-2189 (US).

(72) Inventors; and

(71) Applicants (for US only): **NOTHROP, Paul, Scott** [US/US]; 134 W. Stockbridge Landing, Spring, TX 77382 (US). **VALENCIA, Jaime, A.** [US/US]; 5503 Peace Court, Houston, TX 77041 (US).(74) Agents: **LOBATO, Ryan, L.** et al.; Exxonmobil Upstream Research Company, CORP-URC-SW359, P.O. Box 2189, Houston, TX 77252-2189 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,

HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

(88) Date of publication of the international search report:

23 December 2015

(54) Title: METHOD AND SYSTEM OF DEHYDRATING A FEED STREAM PROCESSED IN A DISTILLATION TOWER

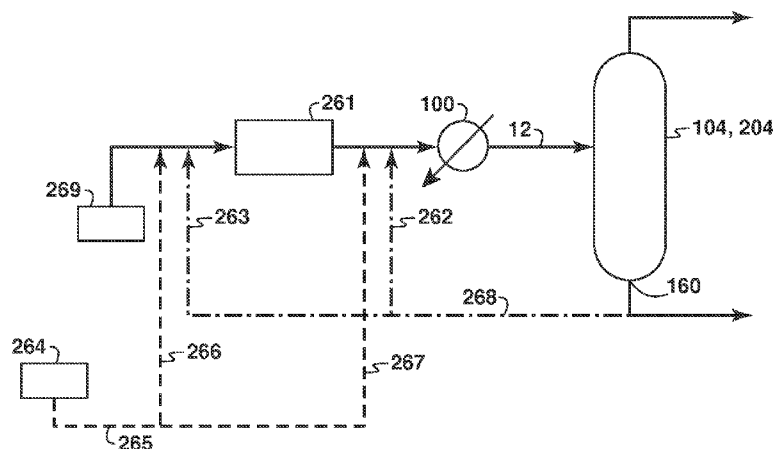


FIG. 5

(57) Abstract: The present disclosure provides a method of dehydrating a feed stream processed in a distillation tower. The method may include (a) introducing a feed stream comprising a first contaminant stream into a distillation tower; (b) forming a solid from the feed stream in a controlled freeze zone section of the distillation tower; (c) feeding a second contaminant stream into the feed stream outside the distillation tower; and (d) removing water from the feed stream with a second contaminant stream by feeding the second contaminant stream.