

(51) International Patent Classification:
F17C 11/00 (2006.01)(21) International Application Number:
PCT/US2013/038113(22) International Filing Date:
25 April 2013 (25.04.2013)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/638,040 25 April 2012 (25.04.2012) US(71) Applicant: SAUDI ARABIAN OIL COMPANY
[SA/SA]; 1 Eastern Avenue, Dhahran 31311 (SA).(71) Applicant (for AG only): ARAMCO SERVICES COM-
PANY [US/US]; 9009 West Loop South, Houston, TX
77210-4535 (US).(72) Inventors: WANG, Yuguo; P.O. Box 2189, Soudi Ara-
mco, Dhahran 31311 (SA). ERCAN, Cemal; P. O. Box
2893, Saudi Aramco, Dhahran 31311 (SA). AL-HASHIM,
Mohammed, Ghalib; P. O. Box 9502, Saudi Aramco,
Dhahran 31311 (SA). ALKHAWAJAH, Anwar, H.; P. O.
Box 1012, Saudi Aramco, Dhahran 31311 (SA). OTH-
MAN, Rashid, M.; P. O. Box 6558, Saudi Aramco,
Dhahran 31311 (SA).(74) Agent: RHEBERGEN, Constance, Gall; Bracewell & Gi-
uliani LLP, P. O. Box 61389, Houston, TX 77208-1389
(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, IS, JP, KE, KG, KM, KN, KP,
KR, KZ, LA, LC, LK, LR, LS, LT, 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, 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, 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,
ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

(54) Title: ADSORBED NATURAL GAS STORAGE FACILITY

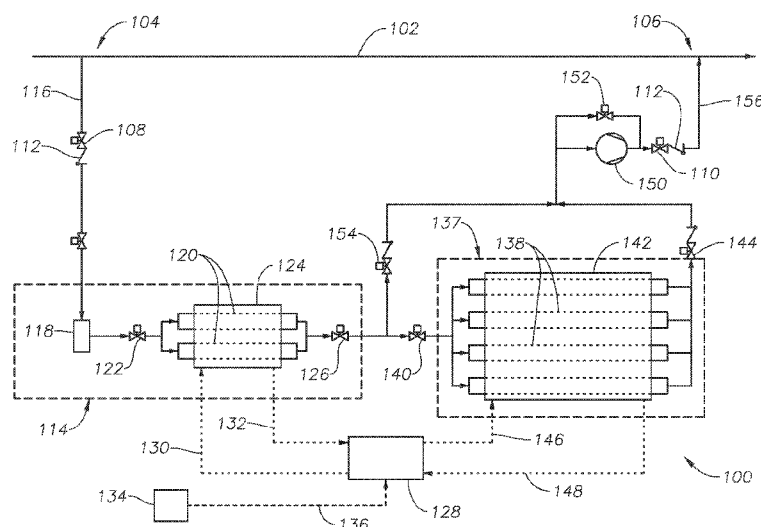


FIG. 1

(57) Abstract: A method of using the natural gas storage facility to reduce the effect of diurnal demand on a natural gas source in-
cludes introducing natural gas into the natural gas storage facility (100), separating the natural gas into a heavy natural gas compo-
nent and a light natural gas component, and retaining the components during a non-peak period of demand. The natural gas storage
facility includes a guard bed system (120) and an adsorption bed system (138). The method also includes releasing the heavy and
light natural gas components, mixing them into a released natural gas component product and introducing it to the natural gas source
during a peak period of demand.