

Title (en)
METHOD AND INSTALLATION FOR PRODUCING TREATED NATURAL GAS FROM A C3+ HYDROCARBON-RICH CUT AND ETHANE-RICH STREAM

Title (de)
VERFAHREN UND INSTALLATION ZUR HERSTELLUNG VON BEHANDELTEM ERDGAS AUS EINEM KOHLENWASSERSTOFFREICHEN C3+-SCHNITT UND EINEM ETHANREICHEN STROM

Title (fr)
PROCEDE ET INSTALLATION DE PRODUCTION DE GAZ NATUREL TRAITE , D ' UNE COUPE RICHE EN HYDROCARBURES EN C3 + ET COURANT RICHE EN ETHANE

Publication
EP 1828697 A1 20070905 (FR)

Application
EP 05850537 A 20051219

Priority

- FR 2005003186 W 20051219
- FR 0413751 A 20041222

Abstract (en)

[origin: FR2879729A1] The simultaneous production of treated natural gas (I) from an initial natural gas (II), a fraction (H1) rich in C 3 +> hydrocarbons with and, in some production conditions, a stream (S1) rich in ethane comprises: cooling and condensing (II) partially; separating the cooled natural gas (III) into a liquid stream (S2) and a gas stream (S3); diluting and introducing (S2) into a recuperation column (VI); separating; expanding; cooling and condensing; recovering top and bottom streams; introducing a first reflux stream; and tapping. The simultaneous production of treated natural gas (I), a fraction (H1) rich in C 3 +> hydrocarbons and, in some production conditions, a stream (S1) rich in ethane) from a starting natural gas (II), comprising methane, ethane and C 3 +> hydrocarbons, comprises: (a) cooling and condensing (II) partially; (b) separating the cooled natural gas (III) into a liquid stream (S2) and a gas stream (S3); (c) diluting and introducing (S2) into a recuperation column (VI) of hydrocarbons with C2+ at a first intermediate level (N1); (d) separating (S3) into a stream (S4) feeding the column and a reflux stream (S5); (e) expanding (S4) in a turbine (A1) and introducing it into (VI) at the second intermediate level (N2); (f) cooling and condensing (S5) partially and, after expansion, introducing it into (VI) at a third intermediate level (N3); (g) recovering the top stream (S6) of (VI) to form the treated and recovering the bottom stream (S7) of (VI) to form a liquid stream rich in hydrocarbons with C2+; (h) introducing (S7) at a supply level (P1) of a fractionating column (F1) provided with a top condenser (E1), where (F1) producing a stream (S8) rich in ethane (on top) and (H1) (at the bottom); (i) introducing a first reflux stream (S9) produced in (E1) in reflux in (F1); (j) and tapping (S8) from an intermediate level (P2) of (F1) located above (P1) of (F1). When rates of extraction of ethane lower is than a predetermined threshold, a secondary reflux stream (S10) from (E1) is produced and introduced in reflux at the top of (VI). An independent claim is also included for the installation for the above process, comprising: (i) means of cooling and partial condensation of (II); (ii) means of separation of (III) to (IV) and (S2); (iii) a column (VI) of recuperation of hydrocarbons with C2+; (iv) means of dilution and introduction of (S3) into the column of recuperation, opening into (N1) of (VI); (v) means of separation of (S2) to form a stream supplying (VI) and (S5); (vi) a turbine (A1) for expansion of (S4) and means of introduction of the stream from (A1) to (N2) of (VI); (vii) means of cooling and condensation at least partial of (S5), opening into the means of expansion of the cooled reflux stream; (viii) means of introduction, at (N3) of (VI), cooled reflux stream coming from the means of expansion of the cooled reflux stream; (ix) means recuperation of the top column stream to form (I); (x) means of recuperation of the bottom column stream to form a liquid stream rich in hydrocarbons with C2+; (xi) a fractionating column (F1) provided with a top condenser (E1); (xii) means of introduction of (S7) at (P1) of (F1); (xiii) means of recuperation of (S1), located at the head of (F1), and the means of recuperation of (H1) located at the bottom of (F1); (xiv) and means of introduction of a first reflux stream produced (E1) as reflux in (F1). The means of recuperation of (S1) are at (P2) of (F1) located above (P1) of (F1). The installation comprises means of production, for rates of extraction of ethane from the natural starting gas lower than a predetermined threshold, (S10) coming from (E1) and means of introduction of (S10) into the recuperation column (VI).

IPC 8 full level
F25J 3/00 (2006.01)

CPC (source: EP US)
F25J 3/0209 (2013.01 - EP US); **F25J 3/0233** (2013.01 - EP US); **F25J 3/0238** (2013.01 - EP US); **F25J 3/0242** (2013.01 - EP US); **F25J 2200/04** (2013.01 - EP US); **F25J 2200/72** (2013.01 - EP US); **F25J 2200/74** (2013.01 - EP US); **F25J 2200/78** (2013.01 - EP US); **F25J 2200/90** (2013.01 - EP US); **F25J 2205/04** (2013.01 - EP US); **F25J 2215/62** (2013.01 - EP US); **F25J 2240/02** (2013.01 - EP US); **F25J 2260/02** (2013.01 - EP US); **F25J 2260/20** (2013.01 - EP US); **F25J 2280/02** (2013.01 - EP US); **F25J 2290/12** (2013.01 - EP US)

Citation (search report)
See references of WO 2006070097A1

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)
FR 2879729 A1 20060623; **FR 2879729 B1 20081121**; AT E416352 T1 20081215; AU 2005321162 A1 20060706; AU 2005321162 B2 20100715; BR PI0519380 A2 20090120; BR PI0519380 B1 20180306; CA 2592012 A1 20060706; CA 2592012 C 20131015; CN 100547326 C 20091007; CN 101103239 A 20080109; DE 602005011482 D1 20090115; DK 1828697 T3 20090309; EA 010386 B1 20080829; EA 200701340 A1 20071026; EG 24056 A 20080430; EP 1828697 A1 20070905; EP 1828697 B1 20081203; ES 2318587 T3 20090501; MX 2007007351 A 20070814; MY 145312 A 20120113; PL 1828697 T3 20090630; PT 1828697 E 20090212; US 2006144081 A1 20060706; US 7458232 B2 20081202; WO 2006070097 A1 20060706

DOCDB simple family (application)
FR 0413751 A 20041222; AT 05850537 T 20051219; AU 2005321162 A 20051219; BR PI0519380 A 20051219; CA 2592012 A 20051219; CN 200580047003 A 20051219; DE 602005011482 T 20051219; DK 05850537 T 20051219; EA 200701340 A 20051219; EG 2005120536 A 20051221; EP 05850537 A 20051219; ES 05850537 T 20051219; FR 2005003186 W 20051219; MX 2007007351 A 20051219; MY PI20056083 A 20051221; PL 05850537 T 20051219; PT 05850537 T 20051219; US 31608305 A 20051221