

*** FMC PRIVATE ***

FMC TECHNOLOGIES

REPORT BY: Gomes, Debora

30-SEP-2015

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PART REPORT

| PART DESCRIPTION | | |
|------------------|---|-------------------------|
| PART NUMBER: | | DRAWING NO: |
| P7000048053 | MANIFOLD, ASSY, F/ GAS AND/OR WATER | DU700163669 |
| REVISION: B | INJECTION, 10 KSI, HH, F/ 4 WELLS, PRE- | DRAWING REV: B |
| ECN: 7066179 | SALT MANIFOLD | DWG OWN: RIO AE |
| TYPE: N | STATUS: RELEASED | OWNERSHIP: RIO AE |
| | UOM: EA | WEIGHT: 416674 (189000) |
| | | LBS (KGS) |

| PART DATA | | |
|------------------------|----------------------------------|--------------------|
| PROD SPEC : SEE GWI045 | | QUALITY LVL: PSL 3 |
| MATL CLASS: HH | TEMP RANGE: 35F(2C) TO 180F(82C) | |
| PR# : | GR# : | SRV CLASS: |

| | |
|--------------------------------|----------------------------|
| REVIEWED BY: Pereira, Vitor | REVIEW DATE : 26-JUN-2015 |
| APPROVED BY: Carvalho, Marcelo | APPROVAL DATE: 26-JUN-2015 |

BILL OF MATERIAL

| ITEM | PART NUMBER | DESCRIPTION | DWG NUMBER | UM | QTY | MATERIAL |
|------|-------------|---|---------------|----|-----|----------|
| 1 | P7000062146 | MANIFOLD, GENERAL ARRANGEMENT, F/ GAS AND/OR WATER INJECTION, PRE-SALT MANIFOLD, ASSY ON SUB SUPPLIER | DU700173972 | EA | 1 | |
| 2 | P7000048055 | MANIFOLD, CHEMICAL/HYDRAULIC DISTRIBUTION MODULE, ASSY, PRE-SALT MSIAG | DU700155055 | EA | 1 | |
| 3 | P7000055449 | MANIFOLD, ELECTRICAL DISTRIBUTION MODULE, ASSY, PRE-SALT MSIAG | DU700162339 | EA | 2 | |
| 4 | P7000048257 | MANIFOLD, ELECTRIC CONTROLS PACKAGE, F/ FIELD MANIFOLD PRE SALT PROJECT | DU700155062 | EA | 1 | |
| 5 | P7000059893 | MANIFOLD, CABLE, 3.45 TON WLL/SWL, 1 LEGGED WIRE ROPE, 115.9 IN LENGTH WITH 8 IN TURNBUCKLE - ABNT STANDARD, PRE-SALT MSIAG | DA700165286 | PC | 1 | |
| 6 | P7000048258 | GROUP OF PARTS, NEXT ASSY LEVEL, F/ PRE-SALT MANIFOLD HYDRAULIC DISTRIBUTION - HYDRAULIC FLYING LEADS | DU700151043 | EA | 1 | |
| 7 | P7000064674 | MANIFOLD, SHACKLE, PRE SALT MANIFOLD | DU700184661 | PC | 4 | |
| 8 | 180-700-731 | CABO P/ CONDUTIBILIDADE ELETRICA P/ PROTECAO CATODICA (400MM DE | DS180-700-731 | PC | 4 | |

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BILL OF MATERIAL (Continued)

| ITEM | PART NUMBER | DESCRIPTION | DWG NUMBER | UM | QTY | MATERIAL |
|------|-------------|---|-------------|----|-----|----------|
| 9 | 701-439-007 | COMPRIMENTO) INTERNAL TOOTH LOCK WASHERS, 6.4 MM I.D., 304 / 316 STAINLESS STEEL. | NO-DWG | PC | 12 | |
| 10 | 701-048-168 | HEX HEAD CAP SCREW 3/16 IN - 24UNC-2A X 3/8 IN LG | NO-DWG | PC | 12 | |
| 11 | P7000056614 | CONTINUITY CABLE, LENGTH 1.5 M | DA700151228 | PC | 4 | |
| 12 | 701-233-012 | HELLERMAN CLAMP T250R, NYLON 6.6 | NO-DWG | PC | 16 | |
| 13 | 701-494-003 | GARRA DE CABO Ø1/4 IN, MATERIAL ACO INOX AISI 316 | NO-DWG | PC | 8 | |
| 14 | P7000061962 | MANIFOLD, INSTALLATION ACESSORIES ASSY AT TECH CENTER, PRE-SALT MSIAG | NO-DWG | EA | 1 | |

QUALITY MATRIX: 7QM0000

| | | | |
|--------------|---|----------------|------------------|
| SECTION: 4.3 | REV: B | OWNER: RIO COE | STATUS: RELEASED |
| | ASSEMBLY - NON-MONOGRAMMED | | |
| 3520 | VISUAL EXAMINATION. | | |
| Q00501 | MARK AT LOCATION SHOWN ON DRAWING/SPECIFICATION. | | |
| Q03401 | SERIALIZATION. | | |
| Q00651 | HANDLING, STORAGE AND SHIPPING PROCEDURE. | | |
| NOTE1 | FURNISH DOCUMENTATION REQUIRED BY API 17D, CERTIFICATE OF COMPLIANCE, ASSEMBLY TRACEABILITY AND PRESSURE TEST RECORDS. | | |
| NOTE2 | FOR SSV/USV GATE VALVES ONLY: FURNISH DOCUMENTATION PER API 6A IN COMPLIANCE WITH SSV/USV REQUIREMENTS. | | |
| NOTE3 | FOR NON-STANDARD ASSEMBLIES: ASSEMBLE AND TEST PER PROJECT PROCEDURES, IF APPLICABLE. | | |
| NOTE5 | ADDITIONAL REQUIREMENTS AS LISTED ON THE DBI AND/OR SPC. | | |

ENGINEERING NOTES AND SPECIFICATIONS

MISCELLANEOUS NOTES

NOTE 1: DWG NOTE;
NOTE 2: DWG NOTE;

(continued...)

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ENGINEERING NOTES AND SPECIFICATIONS (Continued)

NOTE 3: DWG NOTE;

NOTE 4: DWG NOTE;

NOTE 5: MARK ACCORDING TO 4067 (BLACK MUNSELL N-1) WHERE INDICATED
(THE BOX SHOWN IN THE DWG IS A REFERENCE AREA, AND THE MARKING
CAN BE DONE OUTSIDE OF IT):
FMC TECHNOLOGIES AND CUSTOMER LOGO
MANIFOLD DE INJECAO DE AGUA E GAS
PROJETO MANIFOLD PRE SAL
NP / REV:
NS:
PCS E ITEM:
PESO:

NOTE 6: THE PAIR OF SHACKLES POSITIONED ON THE BOW SHALL
BE PAINTED IN COLOR GREEN WHERE INDICATED;
THE PAIR OF SHACKLES POSITIONED ON THE STERN SHALL
BE PAINTED IN COLOR RED WHERE INDICATED;

NOTE 7: DWG NOTE;

DOCUMENTS LIST

| DOCUMENT NUMBER | DESCRIPTION | RESTRICTION |
|--------------------------------|--|------------------|
| -----PRODUCTION DOCUMENTS----- | | |
| TST70017287 | TEST PROCEDURE, FACTORY ACCEPTANCE TEST (FAT), SUBSEA - TEMPLATE/MODULE/MANIFOLD, F/ MECHANICAL INTEGRATION TEST, PRE-SALT MANIFOLD, MSIAG | NO-SUPPLIER-LINK |
| TST70017275 | TEST PROCEDURE, FACTORY ACCEPTANCE TEST (FAT), SUBSEA - TEMPLATE/MODULE/MANIFOLD, F/ CATHODIC PROTECTION TEST, F/ PRE-SALT MANIFOLD, MSIAG | NO-SUPPLIER-LINK |
| TST70021180 | TEST PROCEDURE, SYSTEM INTEGRATION TEST (SIT), PROJECT DOCUMENTATION, PETROBRAS PRE-SALT WATER AND GAS INJECTION SUBSEA MANIFOLD (MSIAG) WITH FMC SUBSEA CONTROL MODULE - CONTROLS TEST | NO-SUPPLIER-LINK |
| TST70017290 | TEST PROCEDURE, FACTORY ACCEPTANCE TEST (FAT), SUBSEA - TEMPLATE/MODULE/MANIFOLD, MANIFOLD WEIGHING AND FILLING, PRE-SALT MANIFOLD, MSIAG | NO-SUPPLIER-LINK |

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DOCUMENTS LIST (Continued)

| | | |
|---------------------------------|--|------------------|
| TST70017288 | TEST PROCEDURE, FACTORY ACCEPTANCE TEST (FAT), SUBSEA - TEMPLATE/MODULE/MANIFOLD, F/ PIG TEST, PRE-SALT MANIFOLD, MSIAG | NO-SUPPLIER-LINK |
| LST70021318 | LIST, CHECKLIST, SUBSEA - TEMPLATE/MODULE/MANIFOLD, FINAL INSPECTION, F/ MANIFOLD, PRE-SALT MANIFOLD, MSIAG/MSIA | NO-SUPPLIER-LINK |
| -----ENGINEERING DOCUMENTS----- | | |
| DA700141504 | SUBSEA SYSTEM DRAWING, WATER AND GAS INJECTION MANIFOLD FLOWCHART, PRE SALT MANIFOLD | |
| DA700142633 | SUBSEA CONTROLS DRAWING, HYDRAULIC DISTRIBUTION, PRE-SALT MANIFOLD PROJECT | |
| DA700141386 | SUBSEA CONTROLS ELECTRICAL SCHEMATIC, PRE-SALT MANIFOLD | |

=====END OF PART=====

