



☐ Column ☐ Cooler ☐ Exchanger ☐ Furnace ☐ Heater ☐ Plate Exchanger ☐ Reboiler ☒ Vessel ☐ Other

Description: 3 PHASE GLYCOL CONTACTOR

PRN No.: A539303

Manufactures Serial No.: 2005740301B

CRN: R-1801.213

Equipment No. (OIP): 158VT001

National Board No.: N/S

Other:

Client., District., LSD., Etc.:

TAQA NORTH
SWALWELL FIELD
01-07-030-24W4M
COMPRESSOR STATION

Tech.: C.H.O.

Date: 07/2013

ITS Job No.: 2341

DWG No.: 005

FACILITY:	SWALWELL FIELD	MANUFACTURER:	ALCO GAS & OIL
LSD:	01-07-030-24W4M- COMPRESSOR STN	DESIGN PRESSURE:	10273 kPa / 1490 psi
ITEM DESC.:	3 PHASE GLYCOL CONTACTOR	DESIGN TEMP.:	66 C / 151 F
EQUIP / OIP#:	158VT001		
PROV. REG. #:	A539303	VESSEL CORROSION ALLOWANCE:	1.59 mm
SERIAL #:	2005740301B		
CRN.:	R1801.213	TOTAL CAUTION / ACTION TML:	12

Item # (005)
TML No.: 2 3"90L I/L B-T

DATE BUILT: 01/2005

AVERAGE THICKNESS MEASURED: 5.36 mm.

MATERIAL:

MINIMUM THICKNESS MEASURED: 5.20 mm.

Pts.	Nom. Thick. mm	CA + Steel Mfg.Tol. mm	Nom. -CA -Toll. mm	B/L Survey Thick. mm	Prev. Survey Thick. mm	Last Survey Thick. mm	Short Term CR mm/yr	Long Term CR mm/yr	Rem. Half Life yr	Future UT Reading mm/yy	Action/Caution Required Item
				01/2005	09/2008	07/2013					
2.01	5.49	0.69	4.80	5.49	6.10	5.40	0.1448	0.0102	2.07	.	CAUTION *
2.02	5.49	0.69	4.80	5.49	6.20	5.40	0.1651	0.0102	1.82	.	CAUTION *
2.03	5.49	0.69	4.80	5.49	6.20	5.40	0.1651	0.0102	1.82	.	CAUTION *
2.04	5.49	0.69	4.80	5.49	6.30	5.20	0.2261	0.0330	0.89	.	CAUTION *
2.05	5.49	0.69	4.80	5.49	6.30	5.40	0.1854	0.0102	1.62	.	CAUTION *

TML No.: 4 UPPER MID SH T-B

DATE BUILT: 01/2005

AVERAGE THICKNESS MEASURED: 21.57 mm.

MATERIAL: SA106-B

MINIMUM THICKNESS MEASURED: 21.40 mm.

Pts.	Nom. Thick. mm	CA + Steel Mfg.Tol. mm	Nom. -CA -Toll. mm	B/L Survey Thick. mm	Prev. Survey Thick. mm	Last Survey Thick. mm	Short Term CR mm/yr	Long Term CR mm/yr	Rem. Half Life yr	Future UT Reading mm/yy	Action/Caution Required Item
				01/2005	09/2008	07/2013					
4.01	21.44	4.27	17.17	21.44	22.50	21.80	0.1448	0.0000	15.99	.	NO
4.02	21.44	4.27	17.17	21.44	22.30	21.80	0.1016	0.0000	22.79	.	NO
4.03	21.44	4.27	17.17	21.44	22.10	21.60	0.1016	0.0000	21.80	.	NO
4.04	21.44	4.27	17.17	21.44	22.00	21.40	0.1219	0.0051	17.35	.	NO
4.05	21.44	4.27	17.17	21.44	21.90	21.40	0.1016	0.0051	20.82	.	NO
4.06	21.44	4.27	17.17	21.44	21.60	21.40	0.0406	0.0051	52.04	.	NO

If Baseline (B/L) Survey Thickness Measurement was not taken at the time of Manufacture, then Nominal Thickness is used as Baseline Thickness. Minimum Thickness is calculated

Design Minimum Thickness = Nom. Thick. - CA - Manufacturing Steel Tolerance.

Manufacturing Tolerance of pipe and forged fittings is + or -12.5% (May or may not apply dependent upon the Client's Owner-User Integrity Management System).

Manufacturing Tolerance of plate is + or - 0.25mm (0.010") (May or may not apply dependent upon the Client's Owner-User Integrity Management System).

(*) and GREEN Represent 25% of the last thickness readings, which have the shortest remaining half life.

BLUE (Caution TML Point) - if Corrosion Rate exceed a 0.250mm / 0.009 in. per yr. or Half Life is less than 15 years.

RED (Action TML Point) - If Remaining Half Life is 0 and Last Survey Thickness is below Nominal-CA-Tolerance Thickness.

CA - Corrosion Allowance, CR - Corrosion Rate (Brown if CR >= 0.500mm/yr.).

Calculated T-Min. Thickness - Using UPIPE Mathematics.

TAQA North

Unit: N-158

FACILITY:	SWALWELL FIELD	MANUFACTURER:	ALCO GAS & OIL
LSD:	01-07-030-24W4M- COMPRESSOR STN	DESIGN PRESSURE:	10273 kPa / 1490 psi
ITEM DESC.:	3 PHASE GLYCOL CONTACTOR	DESIGN TEMP.:	66 C / 151 F
EQUIP / OIP#:	158VT001		
PROV. REG. #:	A539303	VESSEL CORROSION ALLOWANCE:	1.59 mm
SERIAL #:	2005740301B		
CRN.:	R1801.213	TOTAL CAUTION / ACTION TML:	12

Item # (005)

TML No.: 6 MID SH OPP. I/L

DATE BUILT: 01/2005

AVERAGE THICKNESS MEASURED: 21.00 mm.

MATERIAL: SA106-B

MINIMUM THICKNESS MEASURED: 20.60 mm.

Pts.	Nom. Thick. mm	CA + Steel Mfg.Tol. mm	Nom. -CA -Toll. mm	B/L Survey Thick. mm	Prev. Survey Thick. mm	Last Survey Thick. mm	Short Term CR mm/yr	Long Term CR mm/yr	Rem. Half Life yr	Future UT Reading mm/yy	Action/Caution Required Item
				01/2005	09/2008	07/2013					
6.01	21.44	4.27	17.17	21.44	21.20	20.80	0.0813	0.0737	22.33	.	NO
6.02	21.44	4.27	17.17	21.44	21.00	20.60	0.0813	0.0991	17.32	.	NO
6.03	21.44	4.27	17.17	21.44	21.30	20.80	0.1016	0.0737	17.87	.	NO
6.04	21.44	4.27	17.17	21.44	21.20	20.80	0.0813	0.0737	22.33	.	NO
6.05	21.44	4.27	17.17	21.44	21.50	21.00	0.1016	0.0508	18.85	.	NO
6.06	21.44	4.27	17.17	21.44	21.50	22.00	0.0000	0.0000	100.00	.	NO

TML No.: 8 LOWER MID SH T-B

DATE BUILT: 01/2005

AVERAGE THICKNESS MEASURED: 22.40 mm.

MATERIAL: SA106-B

MINIMUM THICKNESS MEASURED: 22.40 mm.

Pts.	Nom. Thick. mm	CA + Steel Mfg.Tol. mm	Nom. -CA -Toll. mm	B/L Survey Thick. mm	Prev. Survey Thick. mm	Last Survey Thick. mm	Short Term CR mm/yr	Long Term CR mm/yr	Rem. Half Life yr	Future UT Reading mm/yy	Action/Caution Required Item
				01/2005	09/2008	07/2013					
8.01	21.44	4.27	17.17	21.44	22.80	22.40	0.0813	0.0000	32.18	.	NO
8.02	21.44	4.27	17.17	21.44	22.90	22.40	0.1016	0.0000	25.74	.	NO
8.03	21.44	4.27	17.17	21.44	22.90	22.40	0.1016	0.0000	25.74	.	NO
8.04	21.44	4.27	17.17	21.44	22.80	22.40	0.0813	0.0000	32.18	.	NO
8.05	21.44	4.27	17.17	21.44	22.90	22.40	0.1016	0.0000	25.74	.	NO
8.06	21.44	4.27	17.17	21.44	22.80	22.40	0.0813	0.0000	32.18	.	NO

If Baseline (B/L) Survey Thickness Measurement was not taken at the time of Manufacture, then Nominal Thickness is used as Baseline Thickness. Minimum Thickness is calculated

Design Minimum Thickness = Nom. Thick. - CA - Manufacturing Steel Tolerance.

Manufacturing Tolerance of pipe and forged fittings is + or -12.5% (May or may not apply dependent upon the Client's Owner-User Integrity Management System).

Manufacturing Tolerance of plate is + or - 0.25mm (0.010") (May or may not apply dependent upon the Client's Owner-User Integrity Management System).

(*) and GREEN Represent 25% of the last thickness readings, which have the shortest remaining half life.

BLUE (Caution TML Point) - if Corrosion Rate exceed a 0.250mm / 0.009 in. per yr. or Half Life is less than 15 years.

RED (Action TML Point) - If Remaining Half Life is 0 and Last Survey Thickness is below Nominal-CA-Tolerance Thickness.

CA - Corrosion Allowance, CR - Corrosion Rate (Brown if CR >= 0.500mm/yr.).

Calculated T-Min. Thickness - Using UPipe Mathematics.

TAQA North

Unit: N-158

FACILITY:	SWALWELL FIELD	MANUFACTURER:	ALCO GAS & OIL
LSD:	01-07-030-24W4M- COMPRESSOR STN	DESIGN PRESSURE:	10273 kPa / 1490 psi
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EQUIP / OIP#:	158VT001		
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SERIAL #:	2005740301B		
CRN.:	R1801.213	TOTAL CAUTION / ACTION TML:	12

Item # (005)

TML No.: 10 BTM SH @ L/L T-B

DATE BUILT: 01/2005

AVERAGE THICKNESS MEASURED: 22.23 mm.

MATERIAL: SA106-B

MINIMUM THICKNESS MEASURED: 22.00 mm.

Pts.	Nom. Thick. mm	CA + Steel Mfg.Tol. mm	Nom. -CA -Toll. mm	B/L Survey Thick. mm	Prev. Survey Thick. mm	Last Survey Thick. mm	Short Term CR mm/yr	Long Term CR mm/yr	Rem. Half Life yr	Future UT Reading mm/yy	Action/Caution Required Item
				01/2005	09/2008	07/2013					
10.01	21.44	4.27	17.17	21.44	22.80	22.40	0.0813	0.0000	32.18	.	NO
10.02	21.44	4.27	17.17	21.44	22.70	22.40	0.0610	0.0000	42.90	.	NO
10.03	21.44	4.27	17.17	21.44	22.60	22.20	0.0813	0.0000	30.94	.	NO
10.04	21.44	4.27	17.17	21.44	22.60	22.20	0.0813	0.0000	30.94	.	NO
10.05	21.44	4.27	17.17	21.44	22.60	22.00	0.1219	0.0000	19.81	.	NO
10.06	21.44	4.27	17.17	21.44	22.70	22.20	0.1016	0.0000	24.76	.	NO

TML No.: 12 BTM HD T-B

DATE BUILT: 01/2005

AVERAGE THICKNESS MEASURED: 21.83 mm.

MATERIAL: SA516-70

MINIMUM THICKNESS MEASURED: 21.60 mm.

Pts.	Nom. Thick. mm	CA + Steel Mfg.Tol. mm	Nom. -CA -Toll. mm	B/L Survey Thick. mm	Prev. Survey Thick. mm	Last Survey Thick. mm	Short Term CR mm/yr	Long Term CR mm/yr	Rem. Half Life yr	Future UT Reading mm/yy	Action/Caution Required Item
				01/2005	09/2008	07/2013					
12.01	20.40	1.84	18.56	20.40	23.00	22.20	0.1651	0.0000	11.03	.	CAUTION
12.02	20.40	1.84	18.56	20.40	22.20	21.80	0.0813	0.0000	19.93	.	NO
12.03	20.40	1.84	18.56	20.40	22.00	21.80	0.0406	0.0000	39.86	.	NO
12.04	20.40	1.84	18.56	20.40	22.00	21.80	0.0406	0.0000	39.86	.	NO
12.05	20.40	1.84	18.56	20.40	22.00	21.60	0.0813	0.0000	18.70	.	NO
12.06	20.40	1.84	18.56	20.40	22.00	21.80	0.0406	0.0000	39.86	.	NO

If Baseline (B/L) Survey Thickness Measurement was not taken at the time of Manufacture, then Nominal Thickness is used as Baseline Thickness. Minimum Thickness is calculated

Design Minimum Thickness = Nom. Thick. - CA - Manufacturing Steel Tolerance.

Manufacturing Tolerance of pipe and forged fittings is + or -12.5% (May or may not apply dependent upon the Client's Owner-User Integrity Management System).

Manufacturing Tolerance of plate is + or - 0.25mm (0.010") (May or may not apply dependent upon the Client's Owner-User Integrity Management System).

(*) and GREEN Represent 25% of the last thickness readings, which have the shortest remaining half life.

BLUE (Caution TML Point) - if Corrosion Rate exceed a 0.250mm / 0.009 in. per yr. or Half Life is less than 15 years.

RED (Action TML Point) - If Remaining Half Life is 0 and Last Survey Thickness is below Nominal-CA-Tolerance Thickness.

CA - Corrosion Allowance, CR - Corrosion Rate (Brown if CR >= 0.500mm/yr.).

Calculated T-Min. Thickness - Using UPipe Mathematics.

TAQA North

Unit: N-158

FACILITY:	SWALWELL FIELD	MANUFACTURER:	ALCO GAS & OIL
LSD:	01-07-030-24W4M- COMPRESSOR STN	DESIGN PRESSURE:	10273 kPa / 1490 psi
ITEM DESC.:	3 PHASE GLYCOL CONTACTOR	DESIGN TEMP.:	66 C / 151 F
EQUIP / OIP#:	158VT001		
PROV. REG. #:	A539303	VESSEL CORROSION ALLOWANCE:	1.59 mm
SERIAL #:	2005740301B		
CRN.:	R1801.213	TOTAL CAUTION / ACTION TML:	12

Item # (005)

TML No.: 14 3"90L O/L T-B

DATE BUILT: 01/2005

AVERAGE THICKNESS MEASURED: 5.13 mm.

MATERIAL:

MINIMUM THICKNESS MEASURED: 5.00 mm.

Pts.	Nom. Thick. mm	CA + Steel Mfg.Tol. mm	Nom. -CA -Toll. mm	B/L Survey Thick. mm	Prev. Survey Thick. mm	Last Survey Thick. mm	Short Term CR mm/yr	Long Term CR mm/yr	Rem. Half Life yr	Future UT Reading mm/yy	Action/Caution Required Item
				01/2005	09/2008	07/2013					
14.01	5.49	0.69	4.80	5.49	6.00	5.40	0.1219	0.0102	2.46	.	CAUTION *
14.02	5.49	0.69	4.80	5.49	6.00	5.00	0.2057	0.0584	0.49	.	CAUTION *
14.03	5.49	0.69	4.80	5.49	5.80	5.40	0.0813	0.0102	3.69	.	CAUTION
14.04	5.49	0.69	4.80	5.49	5.90	5.00	0.1854	0.0584	0.54	.	CAUTION *
14.05	5.49	0.69	4.80	5.49	5.70	5.00	0.1448	0.0584	0.69	.	CAUTION *
14.06	5.49	0.69	4.80	5.49	5.80	5.00	0.1651	0.0584	0.61	.	CAUTION *

If Baseline (B/L) Survey Thickness Measurement was not taken at the time of Manufacture, then Nominal Thickness is used as Baseline Thickness.
Minimum Thickness is calculated

Design Minimum Thickness = Nom. Thick. - CA - Manufacturing Steel Tolerance.

Manufacturing Tolerance of pipe and forged fittings is + or -12.5% (May or may not apply dependent upon the Client's Owner-User Integrity Management System).

Manufacturing Tolerance of plate is + or - 0.25mm (0.010") (May or may not apply dependent upon the Client's Owner-User Integrity Management System).

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RED (Action TML Point) - If Remaining Half Life is 0 and Last Survey Thickness is below Nominal-CA-Tolerance Thickness.

CA - Corrosion Allowance, CR - Corrosion Rate (Brown if CR >= 0.500mm/yr.).

Calculated T-Min. Thickness - Using UPipe Mathematics.