

Sheet Name	Description
J23-0064-ITC-003-01	FT.156: SO2 Converter - SO2 Flow
J23-0064-ITC-003-02	FT.256: NH3/Air Mixing - NH3 Flow
J23-0064-ITC-003-03	FT.304: NH3 Scrubber Recirculation Flow
J23-0064-ITC-003-04	FT.327: Discharged Water - Flow Transmitter
J23-0064-ITC-003-05	FT.406: Hose Treatment - Flushing Water Flow
J23-0064-ITC-003-06	FT.410: SO2 Scrubber - Water Flow
J23-0064-ITC-003-07	FT.414: Scrubber Spray Water - Flow Transmitter
J23-0064-ITC-003-08	FT.605: Hose Treatment - Air Flushing Flow Transmitter
J23-0064-ITC-003-09	FT.659: Air Preheater - Air Flow
J23-0064-ITC-003-10	FT.663: NH3/Air Mixing - Air Flow
J23-0064-ITC-003-11	LT.140: SO2 Bottle 1 - Level
J23-0064-ITC-003-12	LT.142: SO2 Bottle 2 - Level
J23-0064-ITC-003-13	LT.303: NH3 Scrubber Base Tank Level
J23-0064-ITC-003-14	LT.319: Scrubber Bund Level Transmitter
J23-0064-ITC-003-15	LT.320: Waste Water Tank Level
J23-0064-ITC-003-16	AT.321: Waste Water pH analyser
J23-0064-ITC-003-17	AT.520A: Hose Treatment Enclosure - SO2 Gas Analyser
J23-0064-ITC-003-18	AT.520B: Hose Treatment Enclosure - NH3 Gas Analyser
J23-0064-ITC-003-19	PT.152: SO2 Vaporiser - SO2 Pressure
J23-0064-ITC-003-20	PDT.180: SO2 Scrubber - Differential Pressure
J23-0064-ITC-003-21	PT.252: NH3 Vaporiser - NH3 Pressure
J23-0064-ITC-003-22	PDT.280: NH3 Scrubber - Differential Pressure
J23-0064-ITC-003-23	PT.670: Air Receiver - Pressure
J23-0064-ITC-003-24	TT.160: SO2 Converter - Temperature
J23-0064-ITC-003-25	TT.153: SO2 Vaporiser - SO2 Discharge Temperature
J23-0064-ITC-003-26	TT.159: SO2 Converter - SO3 Discharge Temperature
J23-0064-ITC-003-27	TT.251: NH3 Vaporiser - NH3 Discharge Temperature
J23-0064-ITC-003-28	TT.653: Air Preheater - Air Discharge Temperature
J23-0064-ITC-003-29	PT.652: Air Preheater - Air Pressure
J23-0064-ITC-003-30	TT.106: Heat Exchanger Discharge Temperature
J23-0064-ITC-003-32	TT.144: SO2 Vaporiser - Enclosure Temperature
J23-0064-ITC-003-33	TT.244: NH3 Vaporiser - Enclosure Temperature



Commissioning
SO2 Converter - SO2 Flow

J23-0064-ITC-009-01
Revision: A
Template: ITC_Type
Project: MAC TLO HPU Upgrade
Date: 29/11/23

Analogue Instrument

Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [FT_156_AI] into simulation mode (if available) and set value between: [0.0] & [4.0]	Relevant HMI Indicator displays corresponding value.		
2	Alarm High High		Simulate Value to: >[3.67]	[FT.156] High High Alarm displayed		
3	Alarm High		Simulate Value to: >[3.4]	[FT.156] High Alarm displayed		
4	Alarm Low		Simulate Value to: <[3.16]	[FT.156] Low Alarm displayed		
5	Alarm Low Low		Simulate Value to: <[0.0]	[FT.156] Low Low Alarm displayed		

Inspection Passed Sign Off

Date: _____ Name: _____ Signature: _____
Beyond Electrical Engineering Client Name: _____ Signature: _____

Remarks or Remedial Action Required

Remedial Action Completed:



Commissioning
NH3/Air Mixing - NH3 Flow

J23-0064-ITC-009-01
Revision: A
Template: ITC_Type
Project: MAC TLO HPU Upgrade
Date: 29/11/23

Analogue Instrument

Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [FT_256_AI] into simulation mode (if available) and set value between: [0.0] & [6.0]	Relevant HMI Indicator displays corresponding value.		
2	Alarm High High		Simulate Value to: >[5.42]	[FT.256] High High Alarm displayed		
3	Alarm High		Simulate Value to: >[5.29]	[FT.256] High Alarm displayed		
4	Alarm Low		Simulate Value to: <[5.03]	[FT.256] Low Alarm displayed		
5	Alarm Low Low		Simulate Value to: <[0.0]	[FT.256] Low Low Alarm displayed		

Inspection Passed Sign Off

Date: _____ Name: _____ Signature: _____
Beyond Electrical Engineering Client Name: _____ Signature: _____

Remarks or Remedial Action Required

Remedial Action Completed:



Commissioning
NH3 Scrubber Recirculation Flow

J23-0064-ITC-009-01
Revision: A
Template: ITC_Type
Project: MAC TLO HPU Upgrade
Date: 29/11/23

Analogue Instrument

Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [FT_304_AI] into simulation mode (if available) and set value between: [0.0] & [3000.0]	Relevant HMI Indicator displays corresponding value.		
3	Alarm High		Simulate Value to: >[2400.0]	[FT.304] High Alarm displayed		
4	Alarm Low		Simulate Value to: <[1600.0]	[FT.304] Low Alarm displayed		
5	Alarm Low Low		Simulate Value to: <[0.0]	[FT.304] Low Low Alarm displayed		

Inspection Passed Sign Off

Date:		Name:		Signature:	
Beyond Electrical Engineering		Name:		Signature:	
Client					
Remarks or Remedial Action Required					
Remedial Action Completed:					



Commissioning
Discharged Water - Flow Transmitter

J23-0064-ITC-009-01
Revision: A
Template: ITC_Type
Project: MAC TLO HPU Upgrade
Date: 29/11/23

Analogue Instrument

Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [FT_327_AI] into simulation mode (if available) and set value between: [0.0] & [600.0]	Relevant HMI Indicator displays corresponding value.		
5	Alarm Low Low		Simulate Value to: <[0.0]	[FT.327] Low Low Alarm displayed		

Inspection Passed Sign Off

Date:			
Beyond Electrical Engineering	Name:		Signature:
Client	Name:		Signature:
Remarks or Remedial Action Required			
Remedial Action Completed:			



Commissioning
Hose Treatment - Flushing Water Flow

J23-0064-ITC-009-01
Revision: A
Template: ITC_Type
Project: MAC TLO HPU Upgrade
Date: 29/11/23

Analogue Instrument

Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [FT_406_AI] into simulation mode (if available) and set value between: [0.0] & [4000.0]	Relevant HMI Indicator displays corresponding value.		
2	Alarm High High		Simulate Value to: >[3000.0]	[FT.406] High High Alarm displayed		
3	Alarm High		Simulate Value to: >[2800.0]	[FT.406] High Alarm displayed		
4	Alarm Low		Simulate Value to: <[2000.0]	[FT.406] Low Alarm displayed		
5	Alarm Low Low		Simulate Value to: <[1800.0]	[FT.406] Low Low Alarm displayed		

Inspection Passed Sign Off

Date: _____ Name: _____ Signature: _____
Beyond Electrical Engineering Client Name: _____ Signature: _____

Remarks or Remedial Action Required

Remedial Action Completed:



Commissioning
SO2 Scrubber - Water Flow

J23-0064-ITC-009-01
Revision: A
Template: ITC_Type
Project: MAC TLO HPU Upgrade
Date: 29/11/23

Analogue Instrument

Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [FT_410_AI] into simulation mode (if available) and set value between: [0.0] & [2000.0]	Relevant HMI Indicator displays corresponding value.		
3	Alarm High		Simulate Value to: >[1400.0]	[FT.410] High Alarm displayed		
4	Alarm Low		Simulate Value to: <[600.0]	[FT.410] Low Alarm displayed		
5	Alarm Low Low		Simulate Value to: <[400.0]	[FT.410] Low Low Alarm displayed		

Inspection Passed Sign Off

Date:		Name:		Signature:	
Beyond Electrical Engineering		Name:		Signature:	
Client					
Remarks or Remedial Action Required					
Remedial Action Completed:					



Commissioning
Scrubber Spray Water - Flow Transmitter

J23-0064-ITC-009-01
Revision: A
Template: ITC_Type
Project: MAC TLO HPU Upgrade
Date: 29/11/23

Analogue Instrument

Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [FT_414_AI] into simulation mode (if available) and set value between: [0.0] & [600.0]	Relevant HMI Indicator displays corresponding value.		
5	Alarm Low Low		Simulate Value to: <[0.0]	[FT.414] Low Low Alarm displayed		

Inspection Passed Sign Off

Date:		
Beyond Electrical Engineering	Name:	Signature:
Client	Name:	Signature:
Remarks or Remedial Action Required		
Remedial Action Completed:		



Commissioning

Hose Treatment - Air Flushing Flow Transmitter

J23-0064-ITC-009-01

Revision: A

Template: ITC_Type

Project: MAC TLO HPU Upgrade

Date: 29/11/23

Analogue Instrument

Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [FT_605_AI] into simulation mode (if available) and set value between: [0.0] & [20.0]	Relevant HMI Indicator displays corresponding value.		
3	Alarm High		Simulate Value to: >[8.8]	[FT.605] High Alarm displayed		
4	Alarm Low		Simulate Value to: <[4.4]	[FT.605] Low Alarm displayed		
5	Alarm Low Low		Simulate Value to: <[1.1]	[FT.605] Low Low Alarm displayed		

Inspection Passed Sign Off

Date:

Beyond Electrical Engineering

Name:

Signature:

Client

Name:

Signature:

Remarks or Remedial Action Required

Remedial Action Completed:



Commissioning
Air Preheater - Air Flow

J23-0064-ITC-009-01
Revision: A
Template: ITC_Type
Project: MAC TLO HPU Upgrade
Date: 29/11/23

Analogue Instrument

Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [FT_659_AI] into simulation mode (if available) and set value between: [0.0] & [8.0]	Relevant HMI Indicator displays corresponding value.		
3	Alarm High		Simulate Value to: >[6.37]	[FT.659] High Alarm displayed		
4	Alarm Low		Simulate Value to: <[5.93]	[FT.659] Low Alarm displayed		

Inspection Passed Sign Off

Date:		
Beyond Electrical Engineering	Name:	Signature:
Client	Name:	Signature:
Remarks or Remedial Action Required		
Remedial Action Completed:		



Commissioning
NH3/Air Mixing - Air Flow

J23-0064-ITC-009-01
Revision: A
Template: ITC_Type
Project: MAC TLO HPU Upgrade
Date: 29/11/23

Analogue Instrument

Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [FT_663_AI] into simulation mode (if available) and set value between: [0.0] & [10.0]	Relevant HMI Indicator displays corresponding value.		
3	Alarm High		Simulate Value to: >[9.22]	[FT.663] High Alarm displayed		
4	Alarm Low		Simulate Value to: <[8.34]	[FT.663] Low Alarm displayed		

Inspection Passed Sign Off

Date:		
Beyond Electrical Engineering	Name:	Signature:
Client	Name:	Signature:
Remarks or Remedial Action Required		
Remedial Action Completed:		



Commissioning
SO2 Bottle 1 - Level

J23-0064-ITC-009-01
Revision: A
Template: ITC_Type
Project: MAC TLO HPU Upgrade
Date: 29/11/23

Analogue Instrument

Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [LT_140_AI] into simulation mode (if available) and set value between: [0.0] & [150.0]	Relevant HMI Indicator displays corresponding value.		
4	Alarm Low		Simulate Value to: <[35.0]	[LT.140] Low Alarm displayed		
5	Alarm Low Low		Simulate Value to: <[32.0]	[LT.140] Low Low Alarm displayed		

Inspection Passed Sign Off

Date:		
Beyond Electrical Engineering	Name:	Signature:
Client	Name:	Signature:
Remarks or Remedial Action Required		
Remedial Action Completed:		



Commissioning
SO2 Bottle 2 - Level

J23-0064-ITC-009-01
Revision: A
Template: ITC_Type
Project: MAC TLO HPU Upgrade
Date: 29/11/23

Analogue Instrument

Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [LT_142_AI] into simulation mode (if available) and set value between: [0.0] & [150.0]	Relevant HMI Indicator displays corresponding value.		
4	Alarm Low		Simulate Value to: <[35.0]	[LT.142] Low Alarm displayed		
5	Alarm Low Low		Simulate Value to: <[32.0]	[LT.142] Low Low Alarm displayed		

Inspection Passed Sign Off

Date:		
Beyond Electrical Engineering	Name:	Signature:
Client	Name:	Signature:
Remarks or Remedial Action Required		
Remedial Action Completed:		



Commissioning
NH3 Scrubber Base Tank Level

J23-0064-ITC-009-01
Revision: A
Template: ITC_Type
Project: MAC TLO HPU Upgrade
Date: 29/11/23

Analogue Instrument

Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [LT_303_AI] into simulation mode (if available) and set value between: [0.0] & [100.0]	Relevant HMI Indicator displays corresponding value.		
2	Alarm High High		Simulate Value to: >[95.0]	[LT.303] High High Alarm displayed		
3	Alarm High		Simulate Value to: >[85.0]	[LT.303] High Alarm displayed		
4	Alarm Low		Simulate Value to: <[20.0]	[LT.303] Low Alarm displayed		
5	Alarm Low Low		Simulate Value to: <[10.0]	[LT.303] Low Low Alarm displayed		

Inspection Passed Sign Off

Date: _____ Name: _____ Signature: _____
Beyond Electrical Engineering Client Name: _____ Signature: _____

Remarks or Remedial Action Required

Remedial Action Completed:



Commissioning
Scrubber Bund Level Transmitter

J23-0064-ITC-009-01
Revision: A
Template: ITC_Type
Project: MAC TLO HPU Upgrade
Date: 29/11/23

Analogue Instrument

Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [LT_319_AI] into simulation mode (if available) and set value between: [0.0] & [100.0]	Relevant HMI Indicator displays corresponding value.		
2	Alarm High High		Simulate Value to: >[10.0]	[LT.319] High High Alarm displayed		
3	Alarm High		Simulate Value to: >[5.0]	[LT.319] High Alarm displayed		

Inspection Passed Sign Off

Date:			
Beyond Electrical Engineering	Name:	Signature:	
Client	Name:	Signature:	
Remarks or Remedial Action Required			
Remedial Action Completed:			



Commissioning
Waste Water Tank Level

J23-0064-ITC-009-01
Revision: A
Template: ITC_Type
Project: MAC TLO HPU Upgrade
Date: 29/11/23

Analogue Instrument

Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [LT_320_AI] into simulation mode (if available) and set value between: [0.0] & [100.0]	Relevant HMI Indicator displays corresponding value.		
2	Alarm High High		Simulate Value to: >[95.0]	[LT.320] High High Alarm displayed		
3	Alarm High		Simulate Value to: >[85.0]	[LT.320] High Alarm displayed		
4	Alarm Low		Simulate Value to: <[40.0]	[LT.320] Low Alarm displayed		
5	Alarm Low Low		Simulate Value to: <[10.0]	[LT.320] Low Low Alarm displayed		

Inspection Passed Sign Off

Date: Beyond Electrical Engineering Client	Name: Name:	Signature: Signature:
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Remarks or Remedial Action Required

Remedial Action Completed:



Commissioning
Waste Water pH analyser

J23-0064-ITC-009-01
Revision: A
Template: ITC_Type
Project: MAC TLO HPU Upgrade
Date: 29/11/23

Analogue Instrument

Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [AT_321_AI] into simulation mode (if available) and set value between: [0.0] & [14.0]	Relevant HMI Indicator displays corresponding value.		
2	Alarm High High		Simulate Value to: >[9.0]	[AT.321] High High Alarm displayed		
3	Alarm High		Simulate Value to: >[8.5]	[AT.321] High Alarm displayed		
4	Alarm Low		Simulate Value to: <[6.0]	[AT.321] Low Alarm displayed		
5	Alarm Low Low		Simulate Value to: <[5.5]	[AT.321] Low Low Alarm displayed		

Inspection Passed Sign Off

Date:
Beyond Electrical Engineering
Client

Name:
Name:

Signature:
Signature:

Remarks or Remedial Action Required

Remedial Action Completed:



Commissioning
Hose Treatment Enclosure - SO2 Gas Analyser

J23-0064-ITC-009-01
Revision: A
Template: ITC_Type
Project: MAC TLO HPU Upgrade
Date: 29/11/23

Analogue Instrument

Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [AT_GSO1_AI] into simulation mode (if available) and set value between: [0.0] & [20.0]	Relevant HMI Indicator displays corresponding value.		

Inspection Passed Sign Off

Date:		
Beyond Electrical Engineering	Name:	Signature:
Client	Name:	Signature:
Remarks or Remedial Action Required		
Remedial Action Completed:		



Commissioning

Hose Treatment Enclosure - NH3 Gas Analyser

J23-0064-ITC-009-01

Revision: A

Template: ITC_Type

Project: MAC TLO HPU Upgrade

Date: 29/11/23

Analogue Instrument

Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [AT_GSO2_AI] into simulation mode (if available) and set value between: [0.0] & [100.0]	Relevant HMI Indicator displays corresponding value.		

Inspection Passed Sign Off

Date:		Name:		Signature:	
Beyond Electrical Engineering		Name:		Signature:	
Client					
Remarks or Remedial Action Required					
Remedial Action Completed:					



Commissioning
SO2 Vaporiser - SO2 Pressure

J23-0064-ITC-009-01
Revision: A
Template: ITC_Type
Project: MAC TLO HPU Upgrade
Date: 29/11/23

Analogue Instrument

Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [PT_152_AI] into simulation mode (if available) and set value between: [0.0] & [500.0]	Relevant HMI Indicator displays corresponding value.		
2	Alarm High High		Simulate Value to: >[350.0]	[PT.152] High High Alarm displayed		
3	Alarm High		Simulate Value to: >[330.0]	[PT.152] High Alarm displayed		
4	Alarm Low		Simulate Value to: <[270.0]	[PT.152] Low Alarm displayed		

Inspection Passed Sign Off

Date:		Name:		Signature:	
Beyond Electrical Engineering		Name:		Signature:	
Client					
Remarks or Remedial Action Required					
Remedial Action Completed:					



Commissioning
SO2 Scrubber - Differential Pressure

J23-0064-ITC-009-01
Revision: A
Template: ITC_Type
Project: MAC TLO HPU Upgrade
Date: 29/11/23

Analogue Instrument

Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [PDT_180_AI] into simulation mode (if available) and set value between: [300.0] & [-10.0]	Relevant HMI Indicator displays corresponding value.		
4	Alarm Low		Simulate Value to: <[-5.0]	[PDT.180] Low Alarm displayed		
5	Alarm Low Low		Simulate Value to: <[-2.0]	[PDT.180] Low Low Alarm displayed		

Inspection Passed Sign Off

Date:			Signature:
Beyond Electrical Engineering	Name:		
Client	Name:	Signature:	
Remarks or Remedial Action Required			
Remedial Action Completed:			



Commissioning
NH3 Vaporiser - NH3 Pressure

J23-0064-ITC-009-01
Revision: A
Template: ITC_Type
Project: MAC TLO HPU Upgrade
Date: 29/11/23

Analogue Instrument

Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [PT_252_AI] into simulation mode (if available) and set value between: [0.0] & [500.0]	Relevant HMI Indicator displays corresponding value.		
2	Alarm High High		Simulate Value to: >[350.0]	[PT.252] High High Alarm displayed		
3	Alarm High		Simulate Value to: >[330.0]	[PT.252] High Alarm displayed		
4	Alarm Low		Simulate Value to: <[270.0]	[PT.252] Low Alarm displayed		

Inspection Passed Sign Off

Date:		Name:		Signature:	
Beyond Electrical Engineering		Name:		Signature:	
Client					
Remarks or Remedial Action Required					
Remedial Action Completed:					



Commissioning
NH3 Scrubber - Differential Pressure

J23-0064-ITC-009-01
Revision: A
Template: ITC_Type
Project: MAC TLO HPU Upgrade
Date: 29/11/23

Analogue Instrument

Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [PDT_280_AI] into simulation mode (if available) and set value between: [300.0] & [-10.0]	Relevant HMI Indicator displays corresponding value.		
4	Alarm Low		Simulate Value to: <[-5.0]	[PDT.280] Low Alarm displayed		
5	Alarm Low Low		Simulate Value to: <[-2.0]	[PDT.280] Low Low Alarm displayed		

Inspection Passed Sign Off

Date:	Beyond Electrical Engineering		Name:	Signature:	
Client			Name:	Signature:	
Remarks or Remedial Action Required					
Remedial Action Completed:					



Commissioning
Air Receiver - Pressure

J23-0064-ITC-009-01
Revision: A
Template: ITC_Type
Project: MAC TLO HPU Upgrade
Date: 29/11/23

Analogue Instrument

Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [PT_670_AI] into simulation mode (if available) and set value between: [0.0] & [1000.0]	Relevant HMI Indicator displays corresponding value.		
3	Alarm High		Simulate Value to: >[800.0]	[PT.670] High Alarm displayed		
4	Alarm Low		Simulate Value to: <[600.0]	[PT.670] Low Alarm displayed		
5	Alarm Low Low		Simulate Value to: <[500.0]	[PT.670] Low Low Alarm displayed		

Inspection Passed Sign Off

Date:		Name:		Signature:	
Beyond Electrical Engineering		Name:		Signature:	
Client					
Remarks or Remedial Action Required					
Remedial Action Completed:					



Commissioning
SO2 Converter - Temperature

J23-0064-ITC-009-01
Revision: A
Template: ITC_Type
Project: MAC TLO HPU Upgrade
Date: 29/11/23

Analogue Instrument

Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [TT_160_AI] into simulation mode (if available) and set value between: [0.0] & [600.0]	Relevant HMI Indicator displays corresponding value.		

Inspection Passed Sign Off

Date: Beyond Electrical Engineering Client	Name: Name:	Signature: Signature:
Remarks or Remedial Action Required		
Remedial Action Completed:		



Commissioning
SO2 Vaporiser - SO2 Discharge Temperature

J23-0064-ITC-009-01
Revision: A
Template: ITC_Type
Project: MAC TLO HPU Upgrade
Date: 29/11/23

Analogue Instrument

Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [TT_153_AI] into simulation mode (if available) and set value between: [0.0] & [100.0]	Relevant HMI Indicator displays corresponding value.		
2	Alarm High High		Simulate Value to: >[70.0]	[TT.153] High High Alarm displayed		
3	Alarm High		Simulate Value to: >[60.0]	[TT.153] High Alarm displayed		
4	Alarm Low		Simulate Value to: <[40.0]	[TT.153] Low Alarm displayed		

Inspection Passed Sign Off

Date:		Name:		Signature:	
Beyond Electrical Engineering		Name:		Signature:	
Client					
Remarks or Remedial Action Required					
Remedial Action Completed:					



Commissioning
SO2 Converter - SO3 Discharge Temperature

J23-0064-ITC-009-01
Revision: A
Template: ITC_Type
Project: MAC TLO HPU Upgrade
Date: 29/11/23

Analogue Instrument

Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [TT_159_AI] into simulation mode (if available) and set value between: [0.0] & [600.0]	Relevant HMI Indicator displays corresponding value.		
2	Alarm High High		Simulate Value to: >[520.0]	[TT.159] High High Alarm displayed		
3	Alarm High		Simulate Value to: >[500.0]	[TT.159] High Alarm displayed		
4	Alarm Low		Simulate Value to: <[460.0]	[TT.159] Low Alarm displayed		

Inspection Passed Sign Off

Date:		Name:		Signature:	
Beyond Electrical Engineering		Name:		Signature:	
Client					
Remarks or Remedial Action Required					
Remedial Action Completed:					



Commissioning

NH3 Vaporiser - NH3 Discharge Temperature

J23-0064-ITC-009-01

Revision: A

Template: ITC_Type

Project: MAC TLO HPU Upgrade

Date: 29/11/23

Analogue Instrument

Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [TT_251_AI] into simulation mode (if available) and set value between: [0.0] & [100.0]	Relevant HMI Indicator displays corresponding value.		
2	Alarm High High		Simulate Value to: >[70.0]	[TT.251] High High Alarm displayed		
3	Alarm High		Simulate Value to: >[60.0]	[TT.251] High Alarm displayed		
4	Alarm Low		Simulate Value to: <[40.0]	[TT.251] Low Alarm displayed		

Inspection Passed Sign Off

Date:		Name:		Signature:	
Beyond Electrical Engineering		Name:		Signature:	
Client					
Remarks or Remedial Action Required					
Remedial Action Completed:					



Commissioning

Air Preheater - Air Discharge Temperature

J23-0064-ITC-009-01

Revision: A

Template: ITC_Type

Project: MAC TLO HPU Upgrade

Date: 29/11/23

Analogue Instrument

Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [TT_653_AI] into simulation mode (if available) and set value between: [0.0] & [600.0]	Relevant HMI Indicator displays corresponding value.		
2	Alarm High High		Simulate Value to: >[550.0]	[TT.653] High High Alarm displayed		
3	Alarm High		Simulate Value to: >[510.0]	[TT.653] High Alarm displayed		
4	Alarm Low		Simulate Value to: <[450.0]	[TT.653] Low Alarm displayed		

Inspection Passed Sign Off

Date:

Beyond Electrical Engineering

Name:

Signature:

Client

Name:

Signature:

Remarks or Remedial Action Required

Remedial Action Completed:



Commissioning
Air Preheater - Air Pressure

J23-0064-ITC-009-01

Revision: A

Template: ITC_Type

Project: MAC TLO HPU Upgrade

Date: 29/11/23

Analogue Instrument

Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [PT_652_AI] into simulation mode (if available) and set value between: [0.0] & [500.0]	Relevant HMI Indicator displays corresponding value.		
2	Alarm High High		Simulate Value to: >[350.0]	[PT.652] High High Alarm displayed		
3	Alarm High		Simulate Value to: >[330.0]	[PT.652] High Alarm displayed		

Inspection Passed Sign Off

Date:

Beyond Electrical Engineering

Name:

Signature:

Client

Name:

Signature:

Remarks or Remedial Action Required

Remedial Action Completed:



Commissioning
Heat Exchanger Discharge Temperature

J23-0064-ITC-009-01
Revision: A
Template: ITC_Type
Project: MAC TLO HPU Upgrade
Date: 29/11/23

Analogue Instrument

Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [TT_106_AI] into simulation mode (if available) and set value between: [0.0] & [600.0]	Relevant HMI Indicator displays corresponding value.		

Inspection Passed Sign Off

Date:			
Beyond Electrical Engineering	Name:	Signature:	
Client	Name:	Signature:	
Remarks or Remedial Action Required			
Remedial Action Completed:			



Commissioning
SO2 Vaporiser - Enclosure Temperature

J23-0064-ITC-009-01
Revision: A
Template: ITC_Type
Project: MAC TLO HPU Upgrade
Date: 29/11/23

Analogue Instrument

Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [TT_144_AI] into simulation mode (if available) and set value between: [0.0] & [100.0]	Relevant HMI Indicator displays corresponding value.		
4	Alarm Low		Simulate Value to: <[45.0]	[TT.144] Low Alarm displayed		
5	Alarm Low Low		Simulate Value to: <[50.0]	[TT.144] Low Low Alarm displayed		

Inspection Passed Sign Off

Date:		Name:		Signature:	
Beyond Electrical Engineering		Name:		Signature:	
Client					
Remarks or Remedial Action Required					
Remedial Action Completed:					



Commissioning
NH3 Vaporiser - Enclosure Temperature

J23-0064-ITC-009-01
Revision: A
Template: ITC_Type
Project: MAC TLO HPU Upgrade
Date: 29/11/23

Analogue Instrument

Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [TT_244_AI] into simulation mode (if available) and set value between: [0.0] & [100.0]	Relevant HMI Indicator displays corresponding value.		
4	Alarm Low		Simulate Value to: <[45.0]	[TT.244] Low Alarm displayed		
5	Alarm Low Low		Simulate Value to: <[50.0]	[TT.244] Low Low Alarm displayed		

Inspection Passed Sign Off

Date:			Signature:
Beyond Electrical Engineering	Name:		
Client	Name:	Signature:	
Remarks or Remedial Action Required			
Remedial Action Completed:			