GUJARAT GAS	SPECIMEN COPY QUALITY ASSURANCE PLAN SUPPLY OF FILTER SEPARATOR						Document Number			
GUJARAT GAS LIMITED	P.O. NO. :			MANUFACTURE'S NAME & ADDRESS:						

SR No	Component & Stage	Characteristic	Type of Check	Quantam of Check	Reference Standard/ Documents	Acceptance Standard / Documents	Format of Records	Inspection By		
								M	TPA	CLIEN
1	**Drawings & Calculations**									
1.1	P & ID, GAD, BOM, QAP, Technical Datasheet, FAT	Complete Set	Submittals	100%	Technical Spec. and Datasheets	Approved Datasheet	Mfrs Format	P	A	R
2	**Incoming Material Identification of Broughtout Items**									
2.1	Valves	Raw Material	Chemical test	Per heat No	ASTM 370	As per GGL PMS, Technical Specificatiions and Data Sheet	Inspection Report	P	R	R
2.2			Physical Test (tensile,yield ,elongation& Hardness)	Per heat No						
2.3			Impact Test	Per heat No						
2.4		Dimension- Size, Rating,	Visual, Measurement	100%	Approved Datasheet and GAD		Inspection Report	P	R	R
2.5		RT for casting	Test	100%	ASME B16.34 Appendix 1		Inspection Report	P	R	R
2.6		UT for Forging	Test	100%	ASME B16.34 Appendix 1		Inspection Report	P	R	R
2.7		Hydro Body Test	Leak Test	100%	Approved datasheet/API6D/API 598		Inspection Report	P	R	R
2.8		Hydro seat test	Leak Test	100%	Approved datasheet/API6D/API 598		Inspection Report	P	R	R
2.9		High Pressure closer seat test	Leak Test	100%	Approved datasheet/API6D/API 598		Inspection Report	P	R	R
2.10		LOW PRESSURE (AIR) CLOSER(SEAT) TEST AT 7 KG/CM²	Leak Test	100%	Approved datasheet/API6D/API 598		Inspection Report	P	R	R
2.11		Back seat test	Leak Test	100%	Approved datasheet/API6D/API 598		Inspection Report	P	R	R
2.12		High Pre. Pneumatic Shell Test	Leak Test	100%	Approved datasheet/API6D/API 598		Inspection Report	P	R	R
2.13		External Leak test at 7 kg/cm2	Leak test	100%	Approved datasheet/API6D/API 598		Inspection Report	P	R	R
2.14		Fire Safe Test	Type Test	100%	Approved datasheet/API6D/API 598 API 6FA		Inspection Report	P	R	R
2.15		Anti Static Test (as Applicable)	-	100%	Approved datasheet/API6D/API 598		Inspection Report	P	R	R
2.16		Operational Torque Test (As applicable)	-	100%	Approved datasheet/API6D/API 598		Inspection Report	P	R	R
2.17		Functional Inspection (Open/Close Operation for flange end valves)	MINIMUM 10 CYCLES	100%	ASME B 16.34/ API 598		Inspection Report	P	W	V
2.18	DPG	Calibration, Accuracy, Range, Size, End connection)	Visual, Measurement Checks	100%	As per Approved Datasheet	Approved Datasheet	Inspection Report	P	R	R
2.19	Pipe, Pipe Fitting, Flanges for Interconnecting Piping & Fastners	Material TC, Size & Dimension	Chemical test	Per heat No	ASTM 370,ASME B 16.20 & B16.5 ASTM A320 & ASTM A194	As per GGL PMS, Technical Specificatiions and Data Sheet	Inspection Report	P	R	R
			Physical Test (tensile,yield,elongation &hardness)	Per heat No						
			Impact test	Per heat No						
2.20			Proof Test	Per heat No			Inspection Report	P	R	R
2.21			UT - Surface MPT - Bevel End DPT - Bevel end for 50 mm width	100%	ASME SEC V	ASME SEC VIII Rev.02	Inspection Report	P	R	R
2.22	Gaskets	Material TC	Chemical test & Physical Test	Per heat No	As per GGL Data sheet/Specification	As per GGL PMS, Technical Specificatiions and Data Sheet	Inspection Report	P	R	R
		Size & Dimension	Visual, Measurement	100%						
3	**Equipments**									
3.1	Filter	Raw Material -Material TC, Size & Dimension	Chemical test	Per heat No	ASTM 370	As per GGL Technical Specificatiions and Data Sheet	Inspection Report	P	R	R
			Physical Test (tensile,yield ,elongation& Hardness)	Per heat No						
			Impact Test	Per heat No						
3.2	Filter	WPS & PQR	Welders Qualification & Welding	100%	ASME Sec. IX, Article II, follow QW200.1, QW482 for WPS & QW 483 for PQR or API 1104	As per ASME SEC. IX	WPS / PQR from Record	P	R	R
3.3		In Process Inspection	Fit Up	100%	Approved Drawing	Approved Drawing & Standards	Inspection Report	P	R	R
3.4		DP test on Fillet Welds	Surface Defects	100%	As per ASME SEC. V	As per ASME SEC. VIII Div: 1	Inspection Report	P	W	R
3.5		Radiography after Final Weld	Soundness of weld joints	100%	As per ASME SEC. V	As per ASME SEC. VIII Div: 1	Inspection Report	P	R	R
3.6		Visual & Dimensional Check of Filter & Filter Element	Surface Finish & Dimensions	100%	Approved Drawing	Approved Drawing	Inspection Report	P	W	R
3.7		Hydro Test (4 hours Holding time)	Strength of weld joints	100%	Approved Drawing/1.5 times of Design Pressure/ASME SEC VIII DIV 1 UG 99	Approved Drawing/1.5 times of Design Pressure/ASME SEC VIII DIV 1 UG 99	Inspection Report	P	W	V
4	**Welding, NDT & Testing for Interconnecting Piping**									
4.1	WPS / PQR	Welders Qualification & Welding	Welders Qualification & Welding	100%	ASME Sec. IX, Article II, follow QW200.1, QW482 for WPS & QW 483 for PQR or API 1104	As per ASME SEC. IX//ASME B 31.8	WPS / PQR	P	R	R
4.2	Liquid Penetrant Examination (DPT)	On Fillet Welds	Surface Weld Defects	100%	ASME Sec V	ASME SEC.31.3	Internal Inspection Report	P	W	R
4.3	Radiography Test	To identify internal surface defects	Soundness of weld	100%	ASME Sec V	ASME SEC.31.3	Interpretation Report -Review of report	P	R	R
4.4	Hydro Testing of Interconnecting Piping	Hydro test of weld joints	Strength of weld joints	100%	1.5 times of Design Pressure for 4 hrs	73.5 kg/cm2 Holding time: 4 Hours	Inspection Report	P	W	V
5	**PSV (Pressure Safety Valve)**									
5.1	PSV	Material TC for Body and Trim	Chemical Test	Per heat No	ASTM 370	Material as per GGL datasheet	Inspection Report	P	R	R
			Physical Test(Tensile, Yield , elongation & hardness)	Per heat No						
			Impact Test	Per heat No						
		Dimension- Size, Rating, End Connection	Visual, Measurement	100%	Approved Datasheet and GAD	Approved Datasheet and GAD	Inspection Report	V	R	R
5.4	PSV	Body Hydrotest as per Standard	Leak Test	100%	API 520	API 527	Inspection Report	P	W	R
		External Seat tightness test								
5.5	PSV	Set Point	Visual, Measurement	100%	Approved Datasheet	Approved Datasheet	Inspection Report	P	W	R
6	**Final Inspection**									
6.1	Final Dimensional/ Visual Inspection	Complete Skid	Visual Inspection	100%	Approved P&ID & GAD	Approved Drawings	Test Reports	P	W	V
6.2	Painting	1) Surface preperation: as per SA 2.5 2) Galvanizing as per ASTM A 153 3) Check Total DFT at Random Location	Visual & Final DFT measurement	100%	Surface preperation	Surface Preperation as per GGL approved Painting Procedure	Inspection Report	P	W	V
					Visual & DFT Check as per Approved Painting Spec.	Hot Deep Galvanized & Painting as per GGL Approved paint procedure				
6.3	Verification of Material from approved vendor of equipments	Each Material (valves,,Piping ,fittings & Filter)	Approved Vendor	100%	Approved Vendor List of GGL	Approved Vendor List of GGL	Inspection Report	P	V	V
6.4	Factory Acceptance Test	Pneumatic Test	No leakage from Joints	100%	Approved FAT procedure	1) Pneumatic Test @ 7 kg/cm2 2) Holding Time 30 mins	FAT Report/Inspection Report	P	W	V
7	**Final Documentation:**									
7.1	Design & Calculation, Material compliance report as per EN 10204 3.1 , Calibration Certificate, GAD & P & ID, Final FAT report,NDT reports,Hydro & Pneumatic report,Test certificate of PSV	History docket	Verification of records	100%	Approved specification	As per approved specification	History Docket	P	R	R

M : Manufacturer; P : Performer; W : Witness ; R : Review ; A: Approval; RW: Random Witness ; V : Verification

Notes:

1	TPIA shall issue 3.2 certificate as per EN 10204
2	Above QAP covers requirement with reference to GGL specification, hence same shall be referred in conjunction with GGL valve specification/Data Sheet.
3	All measuring instruments/equipments shall be duly calibrated and shall have valid calibration certificates. Same shall be reviewed by TPIA.
4	Repair by welding on body (Forge/cast) is not acceptable
5	WPS/PQR for pup piece shall be reviewed by TPIA
6	FOR HEAT TRETMENT START & STOP TEMP. CHART SHALL BE SIGNED BY TPIA,ALSO POWER FAILURE LOG SHALL BE MAINTAINED.
7	DRAIN & VENT VALVES,PIPES AND AUXILLARY CONNECTIONS AS PER APPROVED GAD OF VALVES TO BE REVIEWED BY TPIA.