

<b>Standard</b>	<b>Technical Quality Sulzer Pumps</b>	<b>SPHO ORDER</b> 100008136-0020	
<b>Service:</b> Raw Water Supply Pumps		<b>Issued By</b> Scott Davis	
<b>Location:</b> Port Arthur, TX		<b>Rev.</b> 00	<b>Date</b> 8/26/2008
<b>User:</b> Motiva Enterprises, LLC			
<b>Tag #</b> 732PU10828 / 29, 30	<b>Customer :</b> BECHTEL JACOBS, JV	<b>Pump Type</b>	<b>Page</b>
<b>Project Name :</b> Motiva CEP	<b>PO #:</b> 58KS2260-HH009725. rev.00	30CC - 1 Stage	1 of 4

Designation			Material					NDT					Welding			Function								
			Form of Supply	Responsibility	Chemical analyses	Chem & Tensile Properties	Hardness	Heat Treatment	PMI	Visual	Liquid Penetrant	Magnetic Particle	Ultrasonic	Radiographic 10%	Procedure Specification	Procedure Qualification	Casting Repair	Hydrostatic Pressure Test	Dimension Check	Balancing	Performance Test	Final Review & Inspection	Notes	
1	Pump Discharge Head (Fabricated construction)	P F	MS		2					5														
			FW							6						4	4							
			MA							5	4					4	4		4	6			S	a
2	Column Pipes (Fabricated construction)	P F	MS		2					5														
			FW							6						4	4						a	
			MA							5	4					4	4		4	6			S	a
3	Pump Bowls	C	MS		2					5						4	4	5						
			MA					4	5	4									4	6			S	a,b
4	Suction Piece	C	MS		2					5														
			MA						5											6			S	a,b
5	Impellers	C	MS		2					5														
			MA					4	5	4										6	5		S	a,b
6	Pump Shaft,Head Shaft Line Shaft	B	MS		2					5			4											
			MA					4	5											6			S	a
7	Wear Rings Spacer Coupling Sleeves & Bushes	W	MS		2				4	5												S		
8	Auxilliary and Process tubing	W	MS		2					5						4	4			6			S	a
			MA							5														a,f
9	Soleplate	P	MS		2					5														
			MA							5										6				
10	Pressure Retaining Fasteners	W	MS		2																	S		
11	Pump complete		MA							5									4		4	S, 4	g, H *	

Notes referred to in the table notes column are on page 2.

Form of Supply	Location of Test	Verification Documents
B Bar	MS Material Supplier	1 Certificate of Compliance ( ISO 10474 ) 2.1
C Casting	FW Fabrication/Welding	2 CompleteTest report ( ISO 10474) 3.1.B *
F Forging	MA Manufacturer	3 Inspection Certificate
P Plate and Sections		4 With Report
W Wrought		5 Without Report
		6 Sign off on Work Order

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**GENERAL NOTES.**

- 1.) Performance test procedure submitted for information only.
- 2.) Observed and Witness points require 7 working day notification.  
 \* Report signed by company designated individual
- 3.) Stainless Steel or Plastic tags shall be firmly attached by stainless steel wire or stainless steel screws to each separate item.  
 Each tag shall be stamped with, AS A Minimum: (PER SECTION 1, PARA 8.0 - TAGS:)
  - a. Agreement Number
  - b. Agreement Item Number
  - c. Equipment / Tag Number
- 4.) Welder Procedures and Welder Certification Required for Approval.
- 5.) Coupling Guard is to be Non-Sparking and painted yellow : Per OSHA 29, CFR Part 1910 & ASME B15.1
- 6.) Procedure Submission Requirements. (Not For Approval Only Info.)
  - a. Performance Procedure - EPP-T04.3
  - b. Hydrostatic Procedure - EPP-T04.2
  - c. Packaging Procedure - SOP-15.2
  - d. NDE Procedures - QPI.02PT, UT1004 & TP-0002
  - e. Inspection Check List
- 7.) Orifice Size to be Stamped on Orifice.

**TABLE NOTES**

- a.) Use only approved ( Welding and NDE ) procedures.
- b.) All major weld repairs will require a submitted defect chart for Approval.
- c.) Vibration readings shall be taken foe info. only.
- e.) Wetting Agent Required for Hydro Testing.
- f.) LP Required on Auxiliary connection welds and Pressure boundary welds.
- g.) Final assembly running clearance records required.
- H.) HOLD POINT Witnessed final inspection.
- i.) Cleanliness inspection.
- N.) Non Witnessed Testing
- S.) Review and Inspection by Sulzer Quality Assurance.

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Raw Material Test and Inspection Plan									
Designation					ND-Examinations			Remarks	
		Form of Supply	Sec 3.1B	MIC Description	Location & Extent	Test & Procedure	Accept Standards		Notes
1	Discharge Head	P F	3.1B	SOP10.1 DIM001	Inspection	100% Visual Inspection VT001	Drawing	PS-2000	a, S
2	Column	P F	3.1B	SOP10.1 DIM001	Inspection	100% Visual Inspection VT001	Drawing	PS-2000	S
3	Pump Bowls	C	3.1B	PT002A	All Accessible Surfaces	PT QPI.02PT	ASME Sect. V	PS-2101	a, b, S
					Casting Weld Repair ASME IX				
4	Suction Piece	C	3.1B	SOP10.1 DIM001	Inspection	100% Visual Inspection VT001	Drawing	PS-2101	a, b, S
					Casting Weld Repair ASME IX				
5	Impeller	C	3.1B	PMI02	Surface	PMI SOP10.1B	Positive Material	PS-2102	a, b, S
				PT002A	All Accessible Surfaces	PT QPI.02PT	ASME Sect. V		
					Casting Weld Repair ASME IX				
6	Pump shaft Head Shaft Line Shaft	B	3.1B	PMI02	Surface	PMI SOP10.1B	Positive Material	PS-2201	S
				UTH002	Surface	UT UT1004	ASME Sect. V		
					Shaft	EPG-S03.1	Straightness		
7	Wear Rings Spacer Sleeve Shaft Couplings	C W F	3.1B	PMI02	Wear Ring Surface Only	PMI SOP10.1B	Positive Material	PS-2000	S
				VER001 SOP10.1	Inspection	100% Visual Inspection VT001	Correct Material		
8	Auxilliary and Process tubing	W	3.1B	VER001 SOP10.1	Inspection	100% Visual Inspection VT001	Correct Material	PS-2000	a, S
9	Soleplate	P	3.1B	VER001 SOP10.1	Inspection	100% Visual Inspection VT001	Correct Material	PS-2000	S
10	Pressure Retaining Fasteners	W	3.1B	VER001 SOP10.1	Inspection	100% Visual Inspection VT001	Correct Material	PS-2000	S

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Manufacturing Test and Inspection Plan								
Designation		Form of Supply	Manufacturing Stage	Location & Extent	Test & Procedure	Accept Standards	Remarks	Notes
1	Pump Discharge	P F	Hydrostatic Testing	Hydro Test EPP-T04.2		ANSI/H.I. 2.6-2002	Test duration 5 Minutes @ 95 psig	S, N
			NDT- Welds	100% Welds	PT QPI.02PT	ASME VIII, Div 1, App 8	MIC - PTH001	S
			Painting ID	Coal Tar Epoxy 14-16 mil			Procedure : EPP-C05.2	S
			Painting OD	Carboline 891 14-16 mil				S
2	Column Pipe	P F	Hydrostatic Testing	Hydro Test EPP-T04.2		ANSI/H.I. 2.6-2002	Test duration 5 Minutes @ 95 psig	S, N
			NDT- Welds	100% Welds	PT QPI.02PT	ASME VIII, Div 1, App 8	MIC - PTH001	S
			Painting ID / OD	Coal Tar Epoxy 14-16 mil			Procedure : EPP-C05.2	S
3	Pump Bowls	C	Hydrostatic Testing	Hydro Test EPP-T04.2		ANSI/H.I. 2.6-2002	Test duration 5 Minutes @ 95 psig	S, N
			NDT- Finish Machined	Machined Surface	PT QPI.02PT	ASME VIII, Div 1, App 7	MIC - PTH001	S
			NDT- Major Repairs (If Repairs are Required)	Major Repair Welds	MT TP-0002	ASME VIII, Div 1, App 7	MIC - MT001	S
			Painting ID	Placite 7122 12-15 mil			Procedure : EPP-C05.4	S
			Painting OD	Coal Tar Epoxy 14-16 mil			Procedure : EPP-C05.2	S
4	Suction Piece	C	Dim Inspect	Machined Surfaces	Inspect Per Drawing Requirements		MIC - DIM001	S
			NDT- Major Repairs (If Repairs are Required)	Major Repair Welds	MT TP-0002	ASME VIII, Div 1, App 7	MIC - MT001	S
			Painting ID	Placite 7122 12-15 mil			Procedure : EPP-C05.4	S
			Painting OD	Coal Tar Epoxy 14-16 mil			Procedure : EPP-C05.2	S
5	Impellers	C	NDT- Casting	Hydraulic Passages	PT QPI.02PT	ASME VIII, Div 1, App 7	MIC - PTH001	S
			Balance	ISO 13709		ISO 1940 G2.5		S
6	Pump Shaft	B	Dim Inspect	Machined Surfaces	Inspect Per Drawing Requirements		MIC - DIM001	S
7	Wear Rings Spacer Sleeve Shaft Couplings	C W F	Dim Inspect	Machined Surfaces	Inspect Per Drawing Requirements		MIC - DIM001	S
8	Auxilliary and Process tubing	W	Dim Inspect	Tubing	Inspect		MIC - DIM001	f, S
9	Soleplate	P	Dim Inspect	Machined Surfaces	Inspect Per Drawing Requirements		MIC - DIM001	S
			Paint Soleplate bottom face	Ceilcote 680 2 - 5 mil				
			Paint Soleplate exposed surfaces	Carboline 891 14-16 mil				
10	Pump Perf Test		Testing	EPP-T04.3		ANSI/H.I. 2.6-2002	Complete Unit Test w/ Lab Driver	c, g, S
11	Pump Complete		Painting - Carbon Steel Surfaces	Paint Per Sulzer Proc. # D50-068				S
			Protection & Preservation	Sulzer Standard				S
			Final Inspection & Release	Report signed by company designated individual			Documentation Review & Pump Inspection	i, S, H

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