

# CSCA Appendix 1. Closed System Survey Questionnaire



## I. General Information

Plant Location (City, Country)	
Plant Type (LPHW/HPHW/cooling/chilled)	

Revision Date: **March 8, 2013**

## II. Cooling System Design

Recirculation Rate	[m <sup>3</sup> /h]	
System Volume	[m <sup>3</sup> ]	
System operating temperature	[°C]	
Date of installation		
Max Cooling/heating capacity*	Kw	
Side Stream Filter installed	[Y] or [N]	
Flow rate through filter	[m <sup>3</sup> /h]	
Particle size rating of filter	u	
Dirt separator installed	[Y] or [N]	
Particle size rating of separator	u	
Source of Make Up (Town, River, Well, etc.)		
Gravity or pressurised make-up		
Is water meter fitted on make up supply	[Y] or [N]	
Volume Make Up Water used	[m <sup>3</sup> ]	
Metallurgy of system: List all metals used and specification e.g. 316/304 SS	e.g. MS, SS, Al, 90/10 Cu:Ni, Cu, Galv, brass.	
Plastic pipe utilised	[Y] or [N]	
With oxygen diffusion barrier	[Y] or [N]	
No. Terminal units supplied by system		
Are AAV's installed	[Y] or [N]	

\* Capacity of system may be estimated if volume not known

Current Service Frequency	<b>e.g. weekly/monthly/quarterly</b>	
Total Visits per Year	[# Visits/year]	
No samples/visit (BS8552)	volume & terminal units	

Makeup Water Analysis:		Source 1	Source 2
pH	[standard units]		
Conductivity	[µS/cm]		
"M" Alkalinity	[ppm CaCO <sub>3</sub> ]		
Sulphate	[ppm SO <sub>4</sub> <sup>2-</sup> ]		
Chloride	[ppm Cl <sup>-</sup> ]		
Total Hardness	[ppm CaCO <sub>3</sub> ]		
Calcium Hardness	[ppm CaCO <sub>3</sub> ]		
Iron dissolved**	[ppm Fe]		
Iron total**	[ppm Fe]		
Zinc**	[ppm Zn]		
Manganese**	[ppm Mn]		
TVC**	[cfu/ml]		
Pseudomads**	[cfu/100ml]		

\*\* Required if make-up water is not direct mains e.g. River, well, storage cisterns, etc

### NOTE

Cells highlighted in **YELLOW** indicate the minimum data required for proposal:

**YELLOW CELL**

**IV. Current Treatment Programme**

Product Type		Corrosion Inhibitor	Non Ox Biocide 1	Additional Notes:
Vendor Name				
Product Name				
Product Dosage	% or ppm			
Biocide active component				
Usage	[kg/year]			
Control limits:				
Container Type				
Injection point & method				
Does main inhibitor control scale	[Y] or [N]			
Does main inhibitor contain dispersant	[Y] or [N]			
Are corrosion rates monitored	[Y] or [N]			

**V. Key Performance Indicators (where applicable)**

KPI limits		
Corrosion Rates - Mild Steel	mpy/mmpa	
Corrosion Rates - Copper	mpy/mmpa	
Corrosion Rates - other (specify)	mpy/mmpa	
Suspended solids	ppm	
TVC	cfu/ml	
Pseudomonads	cfu/100ml	
SRB's	[Y] or [N]	
NRB's	[Y] or [N]	
Dissolved Fe	ppm Fe	
Total Fe	ppm Fe	
Dissolved Cu	ppm Cu	
Total Cu	ppm Cu	
Total Al	ppm Al	
Total Zn	ppm Zn	

Current System Water Analysis:		at Main pumps	at Terminal unit/s
pH	[standard units]		
Conductivity	[µS/cm]		
"M" Alkalinity	[ppm CaCO <sub>3</sub> ]		
Sulphate	[ppm SO <sub>4</sub> <sup>2-</sup> ]		
Chloride	[ppm Cl <sup>-</sup> ]		
Total Hardness	[ppm CaCO <sub>3</sub> ]		
Calcium Hardness	[ppm CaCO <sub>3</sub> ]		
Odour			
Suspended solids			
Settled solids			
Visual appearance			
Dissolved Fe*	[ppm Fe]		
Total Fe*	[ppm Fe]		
<b>Disslved Cu*</b>	[ppm Cu]		
Total Cu*	[ppm Cu]		
Total Al*	[ppm Al]		
Total Zn*	[ppm Zn]		
TOC	[ppm C]		
Ammonia	[ppm NH3]		
Dissoved oxygen	[ppm O2]		
TVC	cfu/ml		
Pseudomonads	cfu/100ml		
SRB	[Y] or [N]		
NRB	[Y] or [N]		
Nitrite**			
Molybdate**			
Azole**			
Boron/Borate**			
Silicate**			
Phosphonate**			
Nitrate**			
Other **			

\* Subject to system metallurgy    \*\* Subject to inhibitor used