Traceable and continuous flow calibration method for gaseous elemental mercury at low ambient concentrations

Teodor D. Andron[1,2], Warren T. Corns[3], Igor Živković[1,2], Saeed W. Ali[1,2], Sreekanth Vijayakumaran Nair[1,2], Milena Horvat[1,2]

[1]Department of Environmental Sciences, Jožef Stefan Institute, Ljubljana, 1000, Slovenia
[2]Jožef Stefan International Postgraduate School, Ljubljana, 1000, Slovenia
[3]PS Analytical, Orpington, BR5 3HP, United Kingdom
Correspondence to: Milena Horvat (milena.horvat@ijs.si)

Supporting information

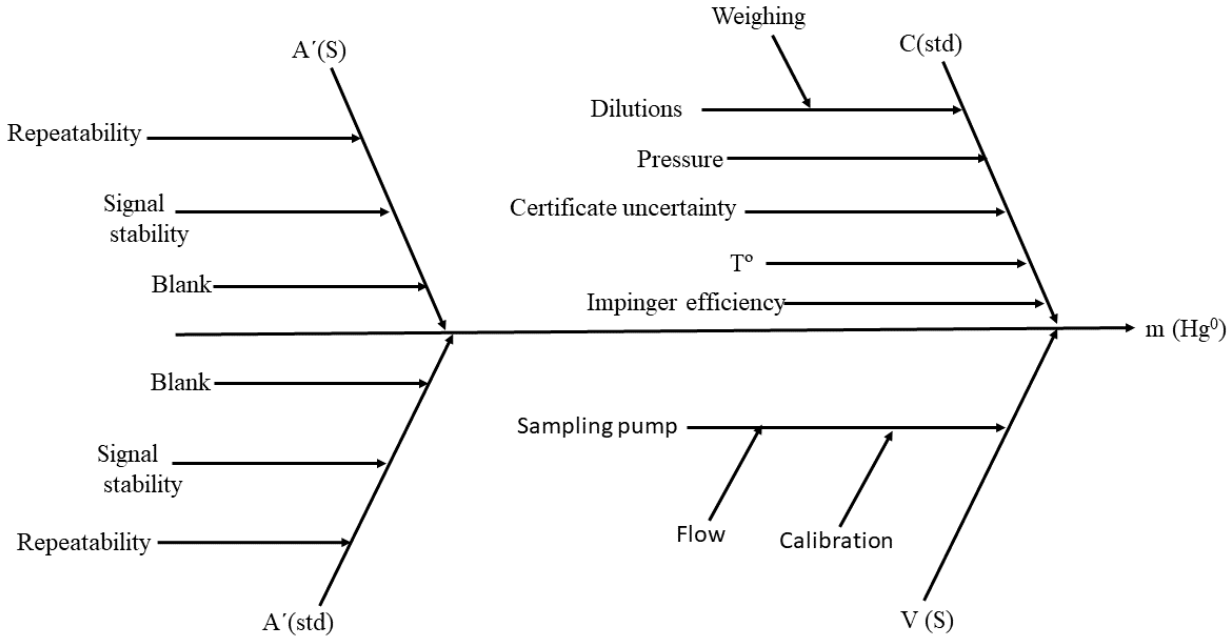

Figure S1. Uncertainty propagation for manual AFS method.

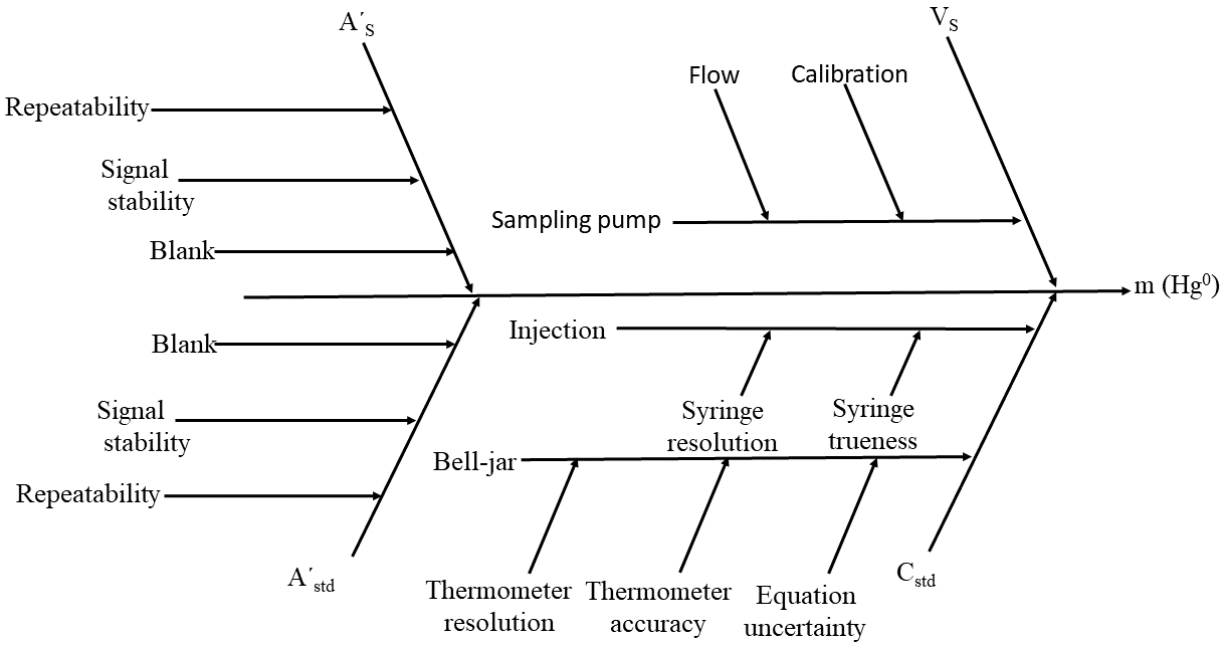

Figure S2. Uncertainty propagation diagram for automated AFS method.

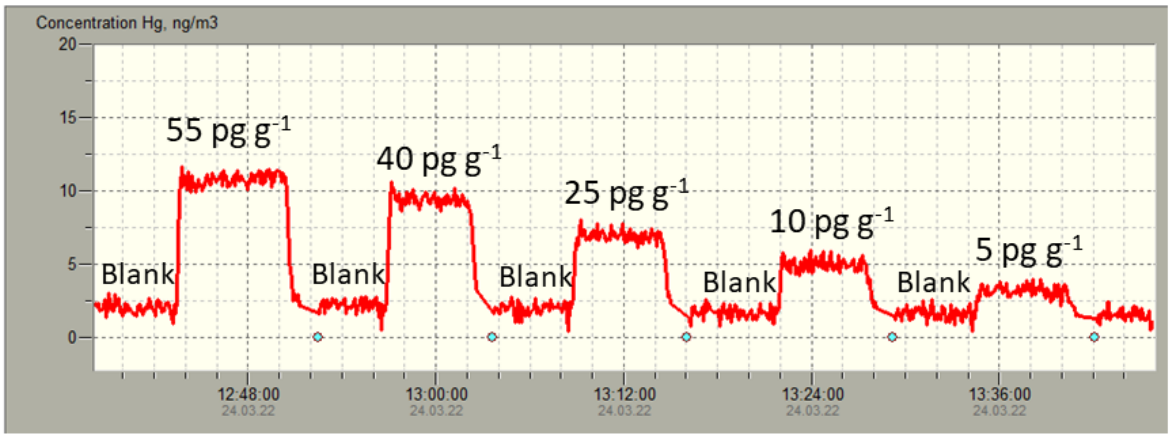

Figure S3: Zeeman AAS detector response for calibration solutions. The values above each peak represent the concentration of Hg in the liquid SRM. The blue dots represent the autozero done by the system.

Table S1. One-way ANOVA statistical test for low concentration measurements.

Series 1					
	Z1	Z2	AFS	Z1*	Z2*
Z1	-				
Z2	***	-			
AFS	***	***	-		
Z1*	***	***	ns	-	
Z2*	***	***	*	***	-

Series 2					
	Z1	Z2	AFS	Z1*	Z2*
Z1	-				
Z2	***	-			
AFS	***	***	-		
Z1*	***	***	ns	-	
Z2*	***	***	ns	*	-

Series 3					
	Z1	Z2	AFS	Z1*	Z2*
Z1	-				
Z2	*	-			
AFS	***	***	-		
Z1*	***	***	*	-	
Z2*	***	***	ns	***	-

Series 4					
	Z1	Z2	AFS	Z1*	Z2*
Z1	-				
Z2	***	-			
AFS	***	***	-		
Z1*	***	***	ns	-	
Z2*	***	***	ns	ns	-

Series 5					
	Z1	Z2	AFS	Z1*	Z2*
Z1	-				
Z2	***	-			
AFS	***	***	-		
Z1*	***	***	ns	-	
Z2*	***	***	ns	***	-

Series 6					
	Z1	Z2	AFS	Z1*	Z2*
Z1	-				
Z2	ns	-			
AFS	***	***	-		
Z1*	***	***	ns	-	
Z2*	***	***	***	***	-

Note: Z is internally calibrated Zeeman AAS; AFS is the automated AFS; * means externally calibrated system; *** means statistical difference with $P < 0.001$; * means statistical difference with $P < 0.05$; ns means no statistical difference with $P > 0.05$.