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Table 1 Operating conditions of ICP-AES

Spectrometer	VISTA PRO
Plasma conditions	
RF power	40 MHz , 1.2 kW
Plasma gas flow rate (L min^{-1})	Ar 15.0
Auxiliary gas flow rate (L min^{-1})	Ar 1.50
Nebulizer gas flow rate (L min^{-1})	Ar 0.75
Spray chamber	Glass cyclonic spray chamber
Nebulizer	K-style concentric glass nebulizer
Torch	One-piece low flow extended torch in the axial view mode
Data acquision	
Measurement mode	Time scan mode

Table 2 Optimized conditions for Auto-Pret AES System

Parameter	Range examined	Selected conditions
pH of sample	1-9	5
Sample loading flow rate ($\mu L\ s^{-1}$)	20-40	30
Eluent (HNO_3) concentration (M)	0.5 – 3	3
Eluent (HNO_3) volume (mL)	0.5 – 1.75	0.5
Eluent (HNO_3) flow rate ($\mu l\ s^{-1}$)	20 – 40	25

Table 3 Analytical figures of the proposed method

Elements	Emission wavelength (nm)	R^{2} [a]	SEF [b]	LOD [c] ($\mu g\ L^{-1}$)
Mo(VI)	202.0	0.998	13	0.09
V(V)	292.4	0.996	26	0.09
Cu(II)	324.7	0.997	35	0.05

[a] Linearity of the calibration graph

[b] Sensitivity enhancement factor

[c] Limits of Detection: Correspond to the three times of signal-to-noise ratio (S/N = 3)

Table 4 Analytical results of environmental water samples

Samples	Mo			V			Cu		
	Added ($\mu g\ L^{-1}$)	Found ($\mu g\ L^{-1}$)	Recovery (%)	Added ($\mu g\ L^{-1}$)	Found ($\mu g\ L^{-1}$)	Recovery (%)	Added ($\mu g\ L^{-1}$)	Found ($\mu g\ L^{-1}$)	Recovery (%)
Asahi River	0	0.25 ± 0.02		0	0.78 ± 0.02		0	1.41 ± 0.04	
	0.2	0.46 ± 0.01	105	0.3	1.08 ± 0.04	100	1	2.40 ± 0.05	99
Zasu River	0	0.39 ± 0.02		0	0.70 ± 0.05		0	1.36 ± 0.05	
	0.2	0.59 ± 0.02	100	0.3	1.01 ± 0.01	103	1	2.39 ± 0.04	103
Tap water	0	0.27 ± 0.02		0	0.49 ± 0.02		0	1.37 ± 0.06	
	0.2	0.47 ± 0.03	100	0.3	0.80 ± 0.06	103	1	2.40 ± 0.25	103

[*1] River water A was sampled at Asahi River, Okayama City, Japan.

[*2] River water B was sampled at Zasu River, Okayama City, Japan.

[*3] Tap water was taken from tap water faucet in faculty of science, Okayama University.

Five milliliters of the sample was used, and experimental conditions were the same as in Table 2.