Supplementary material

Table S1: Average hourly wastewater flowrates observed at the FN and F-ZI pumping stations. n.a. = not available (due to data transmission error on Jan 24, 2011 for the FN pumping station)

Date	Sept 1, 2010	Jan 24, 2011	April 11, 2011	Aug 17, 2011	July 17, 2012
FN (m^3/h)	89	n.a.	90	75	83
F-ZI (m^3/h)	62	101	64	50	64
Difference	27		26	25	19

Table S2: Daily excretion of $N\text{-}NH_4$, urea, Tot-N and tot-P

	$N\text{-}NH_4$ (g/pe/day)	Urea (g/pe/day)	Tot-N (g/pe/day)	Tot-P (g/pe/day)
Jönsson et al., 2005	10.3 (urine) 0.3 (faeces)		11 (urine) 1.5 (faeces)	0.9 (urine) 0.5 (faeces)
Fittschen et Hahn, 1998 (average of 19 individuals)	0.571 (urine)	16.8 (urine)	10.8 (urine)	0.93 (urine)
Schouw et al. 2002 (average of 15 individuals)			7.9 (total)	1.6 (total)
Fraction urine (3 individuals)			80 – 95 %	55- 70%
Udert et al. 2006 (based on a volume of 1.25 L/pe/day	0.68 (urine)	9.63 (urine)	11.5 (urine)	0.93 (urine)
Jönsson et al., 1997			4.9 (urine)	0.42

Table S3: Correlation coefficients between different pollution parameters. n.a. = not available

	FV Sept 1-2, 2010	FV Jan 24-25, 2011	FV April 11-12, 2011*	FV Aug 17-18, 2011	FV Jul 17-18, 2012	FN April 11-12, 2011	FN Aug 17-18, 2011
Classical pollution parameters							
COD vs $N\text{-}NH_4$	0.77	0.87	0.41	0.86	0.73	0.05	0.76
DOC vs $N\text{-}NH_4$	0.76	0.8	0.59	0.75	0.77	0.31	0.63
COD vs DOC	0.91	0.9	0.69	0.87	0.87	0.13	0.63
COD vs CODf	n.a.	0.81	0.64	0.87	0.79	0.14	0.59
DOC vs CODf	n.a.	0.72	0.75	0.95	0.93	0.73	0.59
COD vs P	0.69	0.86	n.a.	n.a.	0.66	0.11	n.a.
$N\text{-}NH_4$ vs P	0.89	0.97	n.a.	n.a.	0.93	0.34	n.a.
Optical parameters							

COD vs A254	0.89	0.92	0.9	0.92	0.87	0.49	0.58
DOC vs A254	0.95	0.94	0.89	0.98	0.93	0.87	0.77
COD vs Turb	0.88	0.96	0.96	0.97	0.91	0.92	0.91
$N\text{-}NH_4$ vs F-T	0.77	0.8	0.69	0.7	0.78	0.43	0.77
DOC vs F-T	0.9	0.93	0.58	0.93	0.91	0.78	0.55
COD vs F-H	0.55	0.8	-0.18	0.68	0.81	0.48	0.25
DOC vs F-H	0.72	0.88	0.17	0.9	0.83	0.14	0.65
Sodium and potassium							
COD vs K	0.53	0.82	n.a.	n.a.	0.78	-0.62	n.a.
COD vs Na	0.49	0.28	n.a.	n.a.	0.26	-0.35	n.a.
$N\text{-}NH_4$ vs K	0.53	0.87	n.a.	n.a.	0.82	0.13	n.a.

$N\text{-}NH_4$ vs Na	0.45	0.2	n.a.	n.a.	-0.34	0.19	n.a.

* Only 14 samples were available for that campaign

Table S4: Daily excretion of copper, zinc and potassium

	Copper	Zinc	Potassium
Jönsson et al., 2005	1.1 mg/pe/day (urine) 1 mg/pe/day (faeces)	0.3 mg/pe/day (urine) 10.7 mg/pe/day (faeces)	2.4 g/pe/day (urine) 0.9 g/pe/day (faeces)
Snyder et al. 1975 (cited by Schouw et al. 2002)	3.5 mg/pe/day (total)	13 mg/pe/day (total)	3.3 g/pe/day (total)
Schouw et al. 2002 (average of 15 individuals)	1.5 mg/pe/day (total) (100% faeces)	9 mg/pe/day (total) (100% faeces)	2.7 g/pe/day (total)
Hansen and Tjell (cited by Schouw et al. 2002)	0.7 – 0.9 mg/pe/day (total)	9-15 mg/pe/day (total)	0.2 – 0.3 mg/pe/day (total)
Fittschen et Hahn, 1998 (average of 19 individuals)			2.6 g/pe/day (urine)
Koch and Rotard (2001)	1.96 mg/pe/day (faeces)	0.16 mg/pe/day (urine) 11 mg/pe/day (faeces)	
Jönsson et al., 1997			1.34 g/pe/day (urine)

Table S5: Range of microelements in 84 typical French dishes (in mg per 100g edible food) (Data source: http://www.afssa.fr/TableCIQUAL/)

	Minimum	Maximum
Na	85	1880
K	7.5	576
Ca	5.1	517
Mg	4.91	55.6
P	22	674
Fe	0.27	2.5
Zn	0.148	3.54
Cu	0.0255	1
Mn	0.0207	1

Table S6: Correlation coefficient between metal concentrations and classical pollution parameters (N-NH4 and COD)

	FN: Aug 17-18, 2011		FV : Aug 17-18, 2011		FN : April 11-12, 2011		FV: April 11-12, 2011	
	$N\text{-}NH_4$	COD	$N\text{-}NH_4$	COD	$N\text{-}NH_4$	COD	$N\text{-}NH_4$	COD
Al	0.78	0.76	0.74	0.68	0.36	0.96	0.06	0.86
Cu	0.64	0.72	0.6	0.8	0.47	0.91	0.16	0.87
Fe	0.65	0.75	0.82	0.88	0.4	0.91	0.14	0.86

Mn	0.32	0.57	0.77	0.86	0.44	0.9	0.09	0.88
Pb	0.18	0.5	0.66	0.68	0.43	0.89	0.13	0.87
Zn	0.47	0.7	0.86	0.92	0.41	0.91	0.14	0.87

Additional references linked to Supplementary Material

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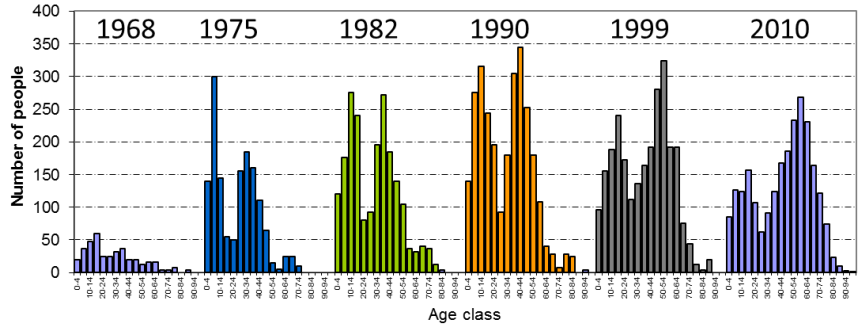

Figure S1: Evolution of the age distribution at Fléville between 1968 and 2010 (permanent inhabitants)

a b

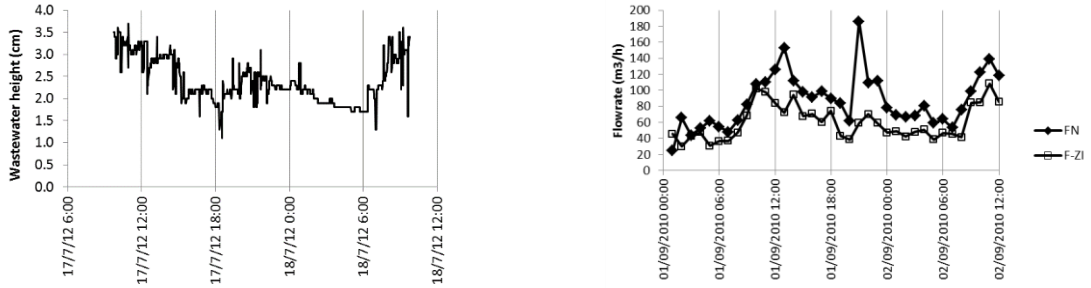

Figure S2: a) Wastewater height in the sewer at the FV sampling point (July 17-18, 2011). B) Hourly flowrates at the FN and F-ZI pumping station for Sept 1-2, 2011