

Figure S1. Map of groundwater seeps along the South Platte River, which was likely affecting flow at storm drain outfalls RN, 5P, D8, and DW.

Table S1. One-factor permutation test for difference in means results. Indicates statistical difference among groups ($p < 0.05$).

Analyte	DOF Between Groups	DOF Within Groups	F-Statistic	p-value	Result
Nitrate	9	149	328.8	$< 2.2 \times 10^{-16}$	Statistically Different
TN	9	139	264.8	$< 2.2 \times 10^{-16}$	Statistically Different
Ammonia	9	136	2.3	0.02	Statistically Different
P	9	147	6.98	4.4×10^{-7}	Statistically Different
P (T)	9	149	7.27	2.3×10^{-7}	Statistically Different
K	9	149	30.95	$< 2.2 \times 10^{-16}$	Statistically Different
K (T)	9	149	30.76	$< 2.2 \times 10^{-16}$	Statistically Different
E.coli	9	138	2.85	0.06	NOT Statistically Different
Coliforms	9	139	1.82	0.056	NOT Statistically Different
TSS	9	132	1.07	0.38	NOT Statistically Different
TOC	9	139	4.31	1.7×10^{-4}	Statistically Different
As	9	149	8.11	4.6×10^{-8}	Statistically Different
As (T)	9	149	6.05	2.9×10^{-6}	Statistically Different
Cu	9	139	1.83	0.06	NOT Statistically Different
Cu (T)	9	139	1.55	0.12	NOT Statistically Different
Fe	9	149	2.03	0.02	Statistically Different
Fe (T)	9	149	1.28	0.09	NOT Statistically Different
Mn	9	149	7.66	1.1×10^{-7}	Statistically Different
Mn (T)	9	149	6.6	9.0×10^{-7}	Statistically Different
Ni	9	149	4.65	6.8×10^{-5}	Statistically Different
Ni (T)	9	149	2.10	0.03	Statistically Different
Se	9	149	5.57	8.4×10^{-6}	Statistically Different
Se (T)	9	149	5.71	6.1×10^{-6}	Statistically Different
Zn	9	149	1.47	0.17	NOT Statistically Different
Zn (T)	9	149	2.15	0.03	Statistically Different

DOF = Degrees of Freedom

ANOVA results were similar and produced the same conclusions, as expected.

Table S2. Spearman's Rho correlations between selected analytes.

	Nitrate	Coliforms	E.coli	TOC	TSS	Ammonia	TN	P	P (T)	K	K (T)	As	As (T)	Ni	Ni (T)	Mn	Mn (T)	Se	Se(T)	Fe	Fe (T)	Zn	Zn (T)
Nitrate	1																						
Coliforms	0.08	1																					
E.coli	0.04	0.51	1																				
TOC	-0.37	0.14	0.11	1																			
TSS	-0.49	0.07	0.16	0.48	1																		
Ammonia	-0.07	0.17	0.13	0.36	0.00	1																	
TN	0.99	0.05	0.03	-0.03	-0.45	-0.05	1																
P	0.32	0.12	0.06	-0.08	-0.13	0.09	0.33	1															
P (T)	0.19	0.10	0.04	0.04	-0.10	0.15	0.19	0.85	1														
K	0.17	-0.13	-0.07	-0.10	-0.01	-0.03	0.19	0.59	0.54	1													
K (T)	0.17	-0.13	-0.07	-0.10	-0.02	-0.02	0.19	0.60	0.55	0.97	1												
As	0.09	-0.13	0.19	-0.29	-0.22	-0.24	0.10	0.25	0.18	0.32	0.39	1											
As (T)	0.00	0.00	0.22	-0.17	-0.10	-0.17	0.00	0.22	0.20	0.29	0.32	0.72	1										
Ni	-0.04	-0.26	0.08	0.05	-0.11	-0.05	-0.04	-0.08	-0.10	0.07	0.14	0.42	0.35	1									
Ni (T)	-0.12	0.06	0.15	0.08	0.12	0.12	-0.14	-0.05	-0.09	0.11	0.06	0.09	0.31	0.43	1								
Mn	-0.38	-0.15	0.06	0.17	0.14	0.16	-0.37	0.03	0.02	0.24	0.24	0.29	0.28	0.39	0.34	1							
Mn (T)	-0.45	-0.10	0.08	0.25	0.32	0.23	-0.43	0.07	0.10	0.26	0.27	0.24	0.27	0.35	0.36	0.94	1						
Se	0.38	-0.18	-0.02	-0.32	-0.34	-0.11	0.37	0.03	-0.02	-0.11	-0.07	0.29	0.13	0.34	-0.03	-0.04	-0.08	1					
Se (T)	0.26	-0.07	0.00	-0.29	-0.39	-0.19	0.23	0.00	-0.07	-0.11	-0.11	0.26	0.24	0.30	0.11	0.05	-0.03	0.63	1				
Fe	-0.23	0.16	0.18	0.49	0.06	0.22	-0.24	0.16	0.18	0.11	0.09	0.00	0.17	0.05	0.21	0.35	0.32	-0.35	-0.23	1			
Fe (T)	-0.63	0.08	0.16	0.65	0.82	0.38	-0.60	-0.23	-0.03	-0.12	-0.13	-0.23	-0.10	0.01	0.14	0.30	0.44	-0.34	-0.40	0.35	1		
Zn	0.19	0.34	0.27	0.04	-0.18	0.00	0.16	0.30	0.29	0.25	0.22	0.12	0.18	-0.10	0.07	0.12	0.10	-0.22	-0.11	0.39	-0.04	1	
Zn (T)	0.15	0.38	0.35	0.24	0.06	0.20	0.14	0.27	0.30	0.21	0.19	-0.02	0.08	-0.15	0.09	0.10	0.14	-0.30	-0.29	0.46	0.19	0.77	1

Pollutants are assumed to be dissolved unless denoted with a (T) which indicates total concentration

Bold values indicate 95% significance

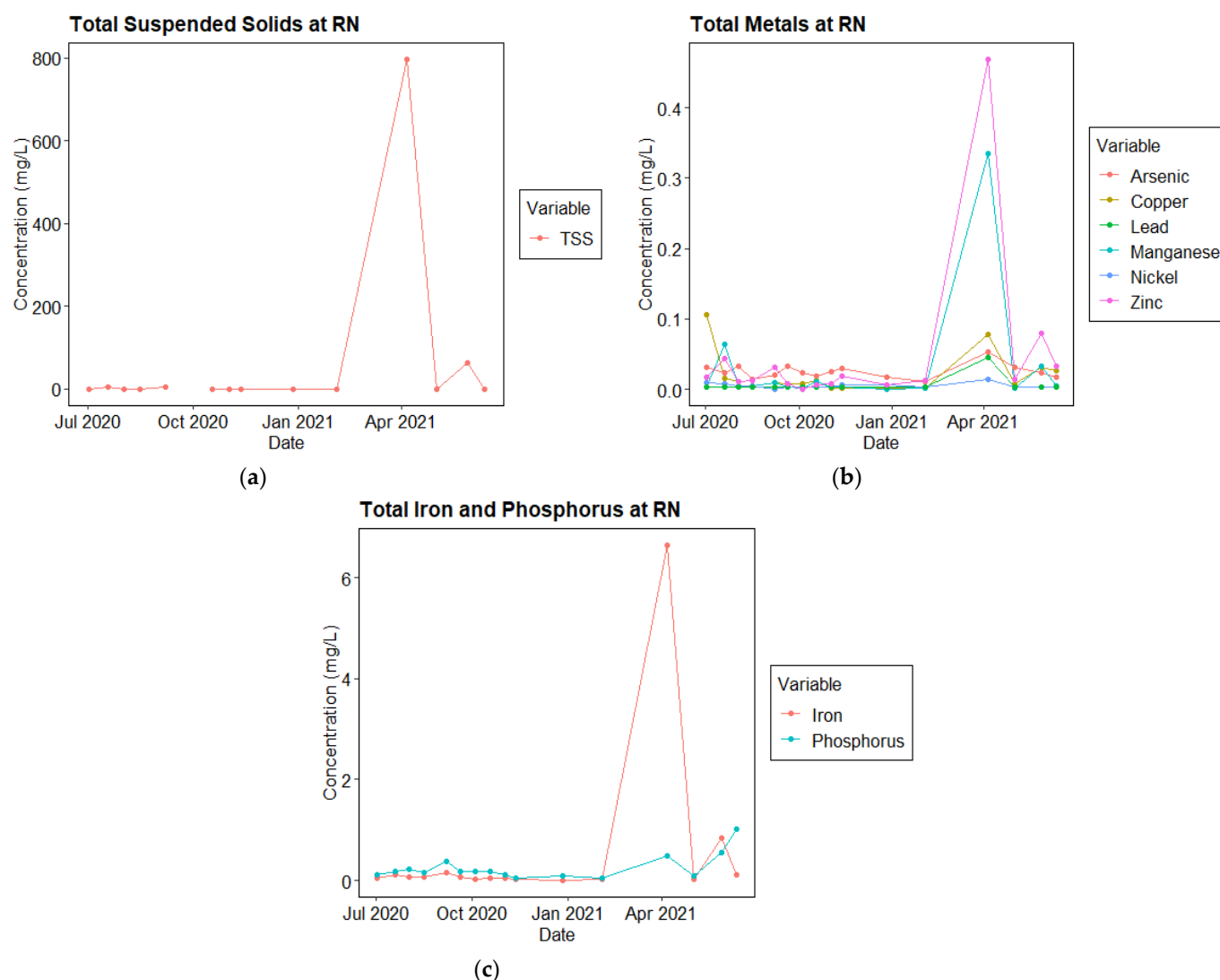


Figure S2. On April 6th and May 28th, RN experienced extremely high concentrations of TSS, which also resulted in greater amounts of total metals and total P pollution. Conditions of high TSS were determined to be derived from erosive activities of construction in the watershed. (a) The first figure shows the large increase in TSS on April 6th, 2021 and May 28th, 2021. (b) This figure shows the increase in total metal concentrations of As, Cu, Pb, Mn, Ni, and Zn under conditions of high TSS at RN. (c) This figure shows the increase in total Fe and P under conditions of high TSS at RN.