

**Table 3.5** Average influent water quality for the five systems used for the SAPS model calibration.

System	n	Flow (gpm)	Residence time (h)	pH <sup>1</sup> (su)	Fe (mg/l)	Mn (mg/l)	Sulfate (mg/l)	Alkalinity <sup>2</sup> (mg/l)	Acidity <sup>2</sup> (mg/l )	Net Alkalinity Generated <sup>2</sup> (mg/l)
C5C6	8	67.5 (39.0 - 93.0)	57.3 (39.0 - 93.1)	3.2 (2.78 - 3.6)	96.0 (51.0 - 127.0)	25.3 (11.0 - 34.0)	933.0 (450.0 - 1224.0)	0.0 (0.0 - 0.0)	420.3 (186.0 - 596.0)	200.0 (82.0 - 308.0)
FLSN	10	37.7 (5.3 - 59.5)	32.2 (12.7 - 143.2)	3.8 (3.3 - 3.9)	26.1 (13.3 - 57.5)	46.9 (39.7 - 57.4)	768.6 (541.0 - 1603.0)	0.0 (0.0 - 0.0)	247.8 (224.0 - 288.0)	90.0 (52.0 - 154.0)
MCKN	10	15.0 (5.3 - 48.9)	69.8 (13.6 - 126.0)	3.9 (3.4 - 4.5)	4.93 (2.20 - 8.24)	35.6 (12.8 - 49.8)	717.1 (312.0 - 1330.0)	3.2 (0.0 - 9.0)	101.4 (42.0 - 132.0)	158.9 (73.0 - 220.0)
SOMR	6	39.4 (3.2 - 92.5)	180.4 (16.1 - 471.1)	3.6 (3.4 - 3.8)	6.2 (1.38 - 13.50)	34.0 (22.3 - 44.5)	683.4 (410.0 - 958.0)	0.0 (0.0 - 0.0)	390.7 (296.0 - 572.0)	127.7 (65.0 - 243.0)
TST1	13	17.5 (4.0 - 45.0)	328.9 (80.7 - 907.7)	3.1 (2.8 - 3.5)	64.1 (20.0 - 148.0)	22.5 (9.0 - 39.0)	860.6 (276.0 - 1488.0)	0.0 (0.0 - 0.0)	344.6 (133.0 - 640.0)	352.9 (151.0 - 596.0)

<sup>1</sup>Values represent median

<sup>2</sup>CaCO<sub>3</sub>equivalent

**Table 3.6** Correlation matrix for the water quality parameters of the calibration data set. n=45

	Net Alkalinty	t <sub>r</sub>	ln(t <sub>r</sub> )	pH	Fe	ln(Fe)	Mn	ln(Mn)	Sulfate	ln(Sulfate)	Acidity	ln(Acidity)	Non-Mn Acidity	ln(Non-Mn Acidity)
Net Alkalinty	1.0000													
t <sub>r</sub>	0.7102	1.0000												
ln(t <sub>r</sub> )	0.7204	0.8763	1.0000											
pH	-0.6671	-0.4992	-0.5600	1.0000										
Fe	0.7085	0.3841	0.4075	-0.7073	1.0000									
ln(Fe)	0.5453	0.3343	0.3410	-0.6231	0.8863	1.0000								
Mn	-0.1367	-0.1159	-0.2302	0.2418	-0.2417	-0.2182	1.0000							
ln(Mn)	-0.0712	-0.0752	-0.1825	0.2064	-0.1890	-0.2030	0.9722	1.0000						
Sulfate	0.5300	0.3549	0.3047	-0.4130	0.5630	0.4065	0.1403	0.2239	1.0000					
ln(Sulfate)	0.4973	0.3439	0.3214	-0.4362	0.5394	0.4093	0.2077	0.3069	0.9673	1.0000				
Acidity	0.6626	0.5368	0.4717	-0.7171	0.7765	0.6419	-0.0414	0.0266	0.5905	0.5921	1.0000			
ln(Acidity)	0.5213	0.4396	0.3870	-0.7366	0.6891	0.6454	0.0135	0.0754	0.5008	0.5490	0.9381	1.0000		
Non-Mn Acidity	0.6712	0.5445	0.4952	-0.7387	0.7972	0.6614	-0.1715	-0.1008	0.5639	0.5567	0.9914	0.9232	1.0000	
ln(Non-Mn Acidity)	0.4702	0.4138	0.3603	-0.7417	0.6751	0.6685	-0.1331	-0.0856	0.4296	0.4572	0.8970	0.9747	0.9019	1.0000