Supplementary Table I. Stoichiometric matrix for microbial reactions - *Continued*

Process	Solute species							Particulate species											
	S_{NH4} [g_N m^{-3}]	S_{NO2} [g_N m^{-3}]	S_{NO3} [g_N m^{-3}]	S_F [g_{COD} m^{-3}]	S_A [g_{COD} m^{-3}]	S_{PO4} [g_P m^{-3}]	S_{O2} [g_{O2} m^{-3}]	X_{AOB} [$g_{COD,X}$ m^{-3}]	X_{NOB} [$g_{COD,X}$ m^{-3}]	X_{Het} [$g_{COD,X}$ m^{-3}]	X_{PAO} [$g_{COD,X}$ m^{-3}]	X_{GAO} [$g_{COD,X}$ m^{-3}]	X_{PP} [$g_{COD,X}$ m^{-3}]	$X_{PHA,P}$ [$g_{COD,X}$ m^{-3}]	$X_{GLY,P}$ [$g_{COD,X}$ m^{-3}]	$X_{PHA,G}$ [$g_{COD,X}$ m^{-3}]	$X_{GLY,G}$ [$g_{COD,X}$ m^{-3}]	X_S [$g_{COD,X}$ m^{-3}]	X_I [$g_{COD,X}$ m^{-3}]
18. Anoxic (NO_2) growth		$-\frac{1-Y_{PAO}}{1.71Y_{PAO}}$									1			$-\frac{1}{Y_{PAO}}$					
19. Anoxic (NO_2) storage of GLY		$-\frac{1-Y_{GLY}^{PAO}}{1.71Y_{GLY}^{PAO}}$												$-\frac{1}{Y_{GLY}^{PAO}}$	1				
20. Lysis of PAO											–1							1- f_{XI}	f_{XI}
21. Lysis of PP						1							–1						
22. Lysis of PHA					1									–1					
23. Lysis of GLY					1										–1				
GAO																			
24. Anaerobic storage of PHA					$-Y_{S_A}^{GAO}$											1	$-(1-Y_{S_A}^{GAO})$		
25. Aerobic growth							$-\frac{1-Y_{GAO}}{Y_{GAO}}$					1				$-\frac{1}{Y_{GAO}}$			
26. Aerobic storage of GLY							$-\frac{1-Y_{GLY}^{GAO}}{Y_{GLY}^{GAO}}$									$-\frac{1}{Y_{GLY}^{GAO}}$	1		
27. Anoxic (NO_2) growth		$-\frac{1-Y_{GAO}}{1.71Y_{GAO}}$										1				$-\frac{1}{Y_{GAO}}$			
28. Anoxic (NO_2) storage of GLY							$-\frac{1-Y_{GLY}^{GAO}}{Y_{GLY}^{GAO}}$									$-\frac{1}{Y_{GLY}^{GAO}}$	1		
29. Anoxic (NO_3) growth			$-\frac{1-Y_{GAO}}{2.86Y_{GAO}}$									1				$-\frac{1}{Y_{GAO}}$			
30. Anoxic (NO_3) storage of GLY			$-\frac{1-Y_{GLY}^{GAO}}{2.86Y_{GLY}^{GAO}}$													$-\frac{1}{Y_{GLY}^{GAO}}$	1		
31. Lysis of GAO												–1						1- f_{XI}	f_{XI}
32. Lysis of PHA					1											–1			
33. Lysis of GLY					1												–1		
Hydrolysis																			
34. Aerobic hydrolysis				1														–1	
35. Anoxic hydrolysis				1														–1	
36. Anaerobic hydrolysis				1														–1	