Boundary	Condition		
$z = 0$	Known concentration	(1)	$SO_4(0)=SO_{40}$
$z = z_{bio}$	Continuity	(2)	$SO_4(z_{bio}^-) = SO_4(z_{bio}^+)$
	Flux	(3)	$-\left(D_{SO_4,0} + D_{bio}\right) \cdot \frac{\partial SO_4}{\partial z}\|_{z_{bio}^-} = -D_{SO_4,0} \cdot \frac{\partial SO_4}{\partial z}\|_{z_{bio}^+}$
$z = z_{ox}$	Continuity	(4)	$SO_4(z_{ox}^-) = SO_4(z_{ox}^+)$
	Flux	(5)	$-D_{SO_4} \cdot \frac{\partial SO_4}{\partial z}\|_{z_{ox}^-} + \gamma_{H_2S} \cdot F_{H_2S}(z_{ox}) = -D_{SO_4} \cdot \frac{\partial SO_4}{\partial z}\|_{z_{ox}^+}$
	where		$F_{H_2S}(z_{ox}) = \frac{1-\phi}{\phi} \cdot (1-\gamma_{FeS}) \cdot \left(\int_{z_{NO_3}}^{SO_4} \sum_i SO_4C \cdot k_i \cdot POC_i \ dz + \gamma_{CH_4} \cdot \int_{z_{SO_4}}^{z_{max}} \sum_i MC \cdot k_i \cdot POC_i \ dz\right)$
$z = z_{NO_3}$	Continuity	(6)	$SO_4(z_{NO_3}^-) = SO_4(z_{NO_3}^+)$
	Flux	(7)	$-D_{SO_4} \cdot \frac{\partial SO_4}{\partial z}\|_{z_{NO_3}^-} = -D_{SO_4} \cdot \frac{\partial SO_4}{\partial z}\|_{z_{NO_3}^+}$
$z = z_{SO_4}$	SO_4 consumption	(8)	**IF**$(SO_4(z_{max}) > 0)$
	$(z_{SO_4} = z_{max})$	(8.1)	$\frac{\partial SO_4}{\partial z}\|_{z_{SO_4}} = 0$
			ELSE
	$(z_{SO_4} < z_{max})$	(8.2)	$SO_4(z_{SO_4}) = 0$ and $-D_{SO_4} \cdot \frac{\partial SO_4}{\partial z}\|_{z_{SO_4}} = \gamma_{CH_4} \cdot F_{CH_4}(z_{SO_4})$
$\frac{\partial SO_4}{\partial z}\|_{z_{SO_4}} = 0$			
	with		$F_{CH_4}(z_{SO_4}) = \frac{1-\phi}{\phi} \cdot \int_{z_{SO_4}}^{z_{max}} \sum_i MC \cdot k_i \cdot POC_i \ dz$
$z = 0$	Known concentration	(1)	$H_2S(0) = H_2S_0$
$z = z_{bio}$	Continuity	(2)	$H_2S(z_{bio}^-) = H_2S(z_{bio}^+)$
	Flux	(3)	$-\left(D_{H_2S,0} + D_{bio}\right) \cdot \frac{\partial H_2S}{\partial z}\|_{z_{bio}^-} = -D_{H_2S,0} \cdot \frac{\partial H_2S}{\partial z}\|_{z_{bio}^+}$
$z = z_{ox}$	Continuity	(4)	$H_2S(z_{ox}^-) = H_2S(z_{ox}^+)$
	Flux	(5)	$-D_{H_2S} \cdot \frac{\partial H_2S}{\partial z}\|_{z_{ox}^-} - \gamma_{H_2S} F_{H_2S}(z_{ox}) = -D_{H_2S} \cdot \frac{\partial H_2S}{\partial z}\|_{z_{ox}^+}$
	where		$F_{H_2S}(z_{ox}) = \frac{1-\phi}{\phi} \cdot (1-\gamma_{FeS}) \cdot \left(\int_{z_{NO_3}}^{SO_4} \sum_i SO_4C \cdot k_i \cdot POC_i \ dz + \gamma_{CH_4} \cdot \int_{z_{SO_4}}^{z_{max}} \sum_i MC \cdot k_i \cdot POC_i \ dz\right)$
$z = z_{NO_3}$	Continuity	(6)	$H_2S(z_{NO_3}^-) = H_2S(z_{NO_3}^+)$
	Flux	(7)	$-D_{H_2S} \cdot \frac{\partial H_2S}{\partial z}\|_{z_{NO_3}^-} = -D_{H_2S} \cdot \frac{\partial H_2S}{\partial z}\|_{z_{NO_3}^+}$
$z = z_{SO_4}$	Continuity	(8)	$H_2S(z_{SO_4}^-) = H_2S(z_{SO_4}^+)$
	Flux (with AOM)	(9)	$-D_{H_2S} \cdot \frac{\partial H_2S}{\partial z}\|_{z_{SO_4}^-} + \gamma_{CH_4} \cdot F_{CH_4}(z_{SO_4}) = -D_{H_2S} \cdot \frac{\partial H_2S}{\partial z}\|_{z_{SO_4}^+}$
	where		$F_{CH_4}(z_{SO_4}) = \frac{1-\phi}{\phi} \cdot \int_{z_{SO_4}}^{z_{max}} \sum_i MC \cdot k_i \cdot POC_i \ dz$
$z = z_{max}$	Zero H_2S flux	(10)	$\frac{\partial H_2S}{\partial z}\|_{z_{max}} = 0$