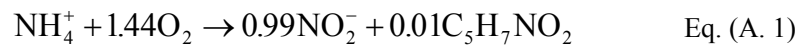
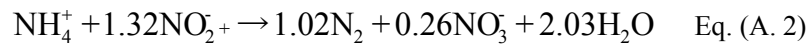


Appendix A.



$$(X) \quad (W) \quad (0.99X)$$



$$(1-X) \quad (0.99X)$$

It is hypothesized that nitrite produced in Eq. A1 was completely used by Anammox process, Eq. (A. 2),

$$\rightarrow \left(\frac{1}{1-X} \right) = \left(\frac{1.32}{0.99X} \right), \quad X = 0.57 \text{ mol}$$

$$\rightarrow W = 1.44 \quad X = 0.82 \text{ mol O}_2 \text{ per mol of ammonium conversion}$$

At standard atmospheric pressure,

$$\rightarrow V_{\text{O}_2}(\text{L}) = 0.82 \times 22.4 \times (\text{moles of ammonium conversion})$$

$$\rightarrow V_{\text{air}}(\text{L}) = V_{\text{O}_2} / 21\%$$