

PRINCIPLES OF ENVIRONMENTAL GEOCHEMISTRY

ERRATA

Does not include misspellings or cosmetic changes

Changes are in **red**

P-28

Line 31 - conditions (see later). *Exothermic reactions release heat energy* (i.e., enthalpy is **negative**

Line 32 - for the reaction), and *endothermic reactions use heat energy* (i.e., enthalpy is **positive** for

P-34

Line 7 - $\Delta H_R^\circ = (-543.0) + (-909.34) + (2)(-285.83) - (-2022.99) = -1.01 \text{ kJ mol}^{-1}$

P-39

Equation 2-44, $\gamma = 10^{0.11}$ (the superscript is 0.11, the I (ionic strength) is not clear in the text)

P-52

Question 24c - should be **CO_3^{2-}**

P-70

Equation 3-33, first term should be **m_{H^+}**

P-75

Two lines below equation 34 should be **$\text{Cd}(\text{OH})_2$**

P-76

Line 13 - first term in equation should be **m_{H^+}**

P-76

Line 32 - there should be a **2** in front of **$m_{\text{SO}_4^{2-}}$**

P-81

Line 16 - The *buffering capacity is a measure of the amount of H^+ or OH^- ...*

P-101

Equation 4-17, $E_h = E^\circ + \frac{0.0592}{2} \log ([\text{O}_2]^{1/2}[\text{H}^+]^2)$ add **parentheses**

P-102

Equation 4-20, $Eh = 1.23 + \frac{0.0592}{2} \log ([O_2]^{1/2}[H^+]^2)$ add **parentheses**

P-104

Equation 4-33, $Eh = E^\circ + \frac{0.0592}{8} \log \left(\frac{[Fe_3O_4][H^+]^8}{[Fe]^3[H_2O]^4} \right)$ add **parentheses**

P-107

Equation 4-45, add **parentheses**

$$Eh = 0.215 + \frac{0.0592}{2} \log ([H^+]^2 [CO_2]^3) = 0.215 - 0.0592 \text{ pH} + 0.0888 \log [CO_2]$$

P-108

Equation 4-50, $Eh = 1.24 + \frac{0.0592}{10} \log \left(\frac{[H^+]^{12}[NO_3^-]^2}{[N_2]} \right)$ replace E with **Eh**, add **parentheses**

Equation 4-52, $Eh = 0.27 + \frac{0.0592}{6} \log \left(\frac{[N_2][H^+]^8}{[NH_4^+]^2} \right)$ replace E with **Eh**, add **parentheses**

Equation 4-54, $Eh = 0.09 + \frac{0.0592}{6} \log \frac{[N_2][H^+]^6}{[NH_3]^2}$ replace E with **Eh**, add **parentheses**

P-109

Equation 4-57, $Eh = 0.83 + \frac{0.0592}{2} \log \left(\frac{[NO_3^-][H^+]^2}{[NO_2^-]} \right)$ replace E with **Eh**, add **parentheses**

P-110

Figure 4-C1-1. On figure, **FeOH²⁺** not FOH²⁻ and **Fe(OH)₄⁻** not Fe(OH)₄

Figure 4-C1-2. On figure, **Mn²⁺** not Mn²⁻ and **MnCO₃** not MnCO₂

P-115

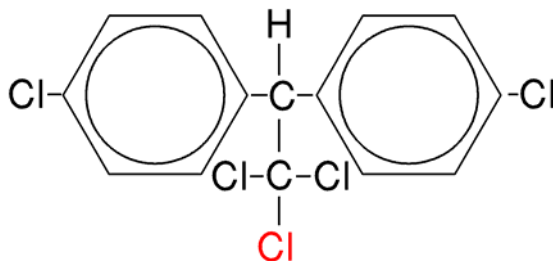
Line 18, left column, Case study should be “change from arsenate to **arsenite**”

P-118

Table 4-4. Under Anoxic on line starting Sulfidic, **H₂S**, not H_sS.

P-136

Figure 5-15. Replace H with Cl.



P-146

Line 35 - association, whereas **Cr**, Sb, U, V, W, and Zn generally showed

P-147

Marcasite formula should be FeS₂

P-171

Line 28 - ³H/³H should be ³H/³He

P-174

Line 40 - ²³²Th-²⁰⁸Pb decay chain. The first step in the chain is the decay

P-185

Line 45 - ... 6-47 in terms of the $\delta^{18}\text{O}$ value of the water vapor:

P-204

Problem 54 - line 5 - ... groundwater, PO₄³⁻ = 9 **mg L⁻¹** and NO₃⁻ =

P-213

Example 7-4 - line 3 - ... we use a **copper** X-ray tube.

Example 7-4 - line 4 - **Cu** K_{α} = ...

P-215

Line 16 - K-feldspar ($KAlSi_3O_8$) the substitution is **KAl** = Si. The plagioclase ...

P-222

Equation 7-14, $\frac{1}{C_{ads}} = \frac{1}{Q^o} + \frac{1}{KQ^o} \times \frac{1}{C_{soln}}$ replace + with multiply **x**.

P-240

Problem 44 - line 1 - ... diffraction. **A copper** tube is used

Problem 45 - line 1 - ... diffraction. **A copper** tube is used

Problem 46 - line 1 - ... diffraction. **A copper** tube is used

Problem 47 - line 1 - ... diffraction. **A copper** tube is used

P-241

Problem 52 -

C_{soln} (mg L ⁻¹)	C_{ads} (mg g ⁻¹)
0.1	0.15
0.5	0.75
1	1.5
2	3
4	6
8	12
10	15
12	18

P-259

Case study - line 4 - should be “**i**norganic carbon (DIC)”

P-264

Case Study 8-4, *source*, Line 2 - atmospheric N₂O concentration during abrupt

P-283

Figure 8-20 caption - Global NO_x produced by the burning

P-289

First line under equation 8-22 -g is the acceleration of gravity (9.8 m s⁻²),

P-296

Delete “, and BaP-benzo[a]pyrene” at end of last line of table footnote.

P-303

Problem 59 - Lipids extracted from an aerosol samples have an average δ¹³C = -21.2‰ ...

P-322

Figure 9-4a - lower left equation number on figure should be **9-16**.

P-345

Line 4 in EXAMPLE 9-5 should read ...the soil water is **4μg L⁻¹**, calculate the concentration of ...

P-422

Line 10 after heading **Methane Hydrates** should read “butane. Structure **III** hydrates contain...”

P-482

The free energy for manganite (MnOOH) is **-557.7 kJ mol⁻¹**, not -133.3.

P-495

Chapter 2, 25b. answers - Positive (**0.000165**), negative (**0.000161**)