ERRATA FOR 3RD PRINTING OF WATER CHEMISTRY

1. **(10/04/06)** p.53. Delete the first two sentences of Problem 7; start with "The activity coefficients…" Delete the word "concentration" from that sentence.

2. **(10/25/03)** p.124, solution to Example 2.14: In last equation in part *b*, replace 1.74 with 1.72.

3. **(10/29/07)** p.128, Problem 3. In the parenthetical in the first line following Reaction 2, replace "*TOT*NH_3" with "the sum of the concentrations of NH_4^+ and NH_3". Also, at the end of that paragraph, add: Reaction 1 is at equilibrium, but Reaction 2 might not be.

4. **(10/15/07)** p.132, third line: change "that" to "than"

5. **(10/10/07)** p.136, Under the last schematic in Figure 3.3, the H_2O should have a coefficient of 2 in front of it.

6. **(10/23/08)** p.139, Table 3.2: For arsenic acid (H_3AsO_4), the value of pK_{a3} should be 11.60. For arsenous acid (H_3AsO_3), the value of pK_{a2} should be 12.10, and the value of pK_{a3} should be 13.41. Make the same changes in the copy of this table on p.642.

7. **(10/29/07)** p.161. In the middle of the page, in the equation following the sentence "Alternatively, α_1 can be derived…" change the K_1 at the end of the equation to K_{a1}.

8. **(10/10/07)** p.168, in the table in the middle of the page, in the line for Na, delete the term + $(10^{-4})(1)$.

9. **(10/26/05)** p199, part a, last equation: should be "(where $\{H^+\} = \{OCl^-\}$)" instead of (where $\{H^+\} + \{OCl^-\}$)".

10. **(10/28/05)** p.229. In the table, in the row with the $Cu(NH_3)_x^{2+}$ species, the entry under under +**1** should be $Cu(NH_3)^{2+}$.

11. **(10/24/06)** p.230. In the last sentence of Problem 1, replace "charge balance" with "K_a".

12. **(10/29/07)** p.235. Problem 13. In the fifth line of the problem statement, change 'CuS' to 'sulfide minerals'.

13. **(11/17/06)** p.267. In the last row of the third paragraph, the values 9.0 and 4.7 should be reversed.

14. **(10/28/07)** p.288. Problem 1(a): Change "needed to adjust the pH of all three of these solutions to 8.0." to "that was added to each of the solutions."

15. **(10/28/05)** p.288. Problem 2(a)(vi): pK_{a1}, pK_{a2}, and pK_{a3} should be 3.13, 4.72, and 6.33, respectively.

16. **(11/08/04)** p.292. In Problem 14, second paragraph, second sentence: delete the subscript "3" on "$NaCl_3$".

17. **(11/02/06)** p.310. In the Log *K* column of the first table near the bottom, change 4.13 to 3.17.

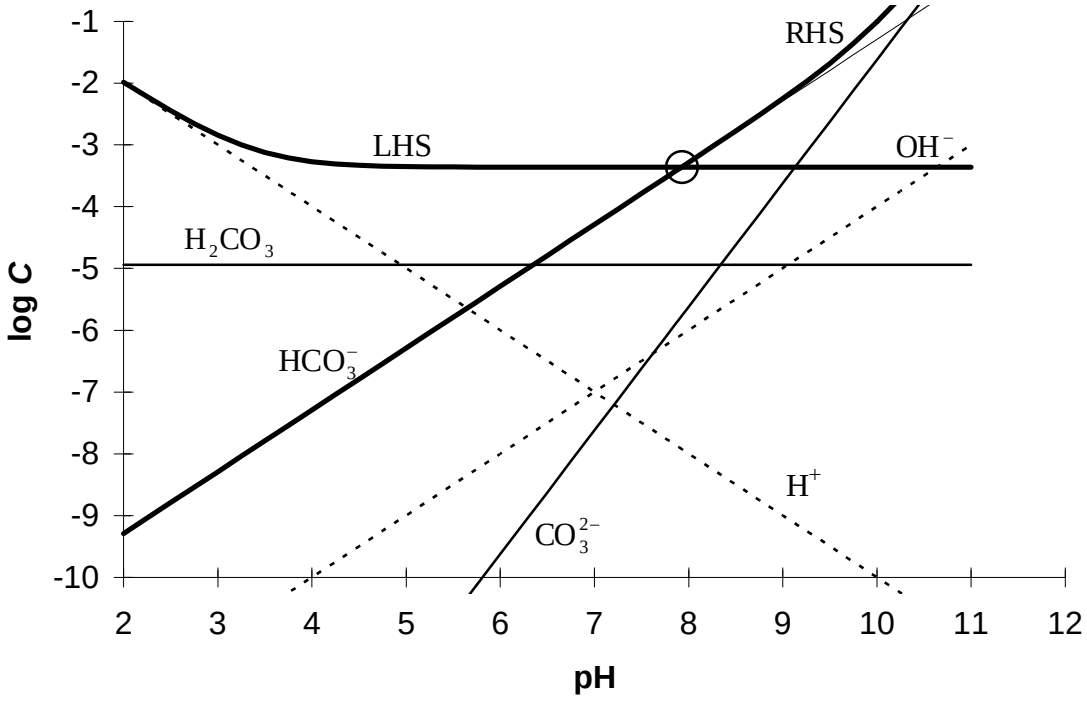
18. **(11/17/06)** p.317: The value in the final column, second row, should be 1.00×10^{-4}, not 1.00×10^{-3}.

19. **(11/13/06)** p.347. The first and third equations below the PC table should be:

$$TOTH_{in} = 10^{-10.5} - 10^{-3.5} - 2.96 \times 10^{-5} - (2)(4.44 \times 10^{-5}) = -4.35 \times 10^{-4}$$

$$\{H^+\} + 4.35 \times 10^{-4} = \{OH^-\} + \{HCO_3^-\} + 2\{CO_3^{2-}\}$$

In the subsequent paragraph, the value of the equilibrium pH should be 7.96 (not 7.34), the value of $TOTCO_3$ should be 4.39×10^{-4} (not 1.29×10^{-4}), and the amount of $CO_2(g)$ that dissolves should be 3.64×10^{-4} (5.5×10^{-5}). The graph on p.348 should be replaced with the following one:



20. **(11/13/07)** p.358: In problem 8a, replace the second sentence with the sentence: Consider Ca^{2+} to be a weak acid with $pK_{a1} = 12.60$.

21. **(10/29/07)** p.359. In Problem 9, part *b*, after the words *pH 4.5*, insert the phrase: *and that no H_2S enters or leaves the solution during the titration.*

22. **(12/06/05)** p.456. In Problem 10, the chemical shown as $Fe(NH_4)PO_4(s)$ should be $Fe_2(NH_4)PO_4(s)$.

23. **(12/16/05)** p.458. At the end of Problem 16c, add: K_{s0} for ZnO(*s*) is for the reaction $Zn^{2+} + H_2O \leftrightarrow Zn^{2+} + 2\,OH^-$.

24. **(10/07/07)** p.501, beginning of line 3: e^- should be a subscript; *i.e.*: $\overline{G}_{e^-}$.

25. **(12/22/06)** p.518. Toward the end of the first full paragraph, in the expressions "pe > 3.8" and "pe = 3.8," the values should be changed from 3.8 to –3.8.