

Corrections for  
**Water Resources Engineering**  
**(First printing)**  
By Larry W. Mays

Corrections as of 4/29/03

If you find additional corrections please email me at [mays@asu.edu](mailto:mays@asu.edu)

**Chapter 1**

**Chapter 2**

Page 16 Table 2.1.2 under column for viscosity, “(n s/m<sup>2</sup>)” should be “(N s/m<sup>2</sup>)”

Page 27 Problem 2.3.3 statement “3000 cm<sup>2</sup>” should be “3000 cm<sup>3</sup>”

Page 28 Problem 2.4.8 statement “100 kg/m<sup>3</sup> density” should be “1000 kg/m<sup>3</sup> density”

Page 28 Problem 2.5.1 statement “Figure 2.5.1 below” should be “Figure 2.5.1”

Page 28 Problem 2.8.2 should read, “Water flows in a rectangular channel ...”

**Chapter 3**

Page 46 Delete second equal sign in Equation (3.6.8)

Page 46 The exponent 3 in the velocity integral should be added to the last two lines of example 3.6.1

$$\begin{aligned} &= \frac{1}{\rho r_0^2 (0.5 v_{\max})^3} \int_0^{r_0} \left\{ v_{\max} \left[ 1 - \left( \frac{r}{r_0} \right)^2 \right] \right\}^3 (2pr) dr \\ &= \frac{16}{r_0^2} \int_0^{r_0} \left[ 1 - \left( \frac{r}{r_0} \right)^2 \right]^3 r dr = 2 \end{aligned}$$

Page 47 In problem 3.5.3 delete the last sentence, “Also determine the total hydrostatic force on the gate and the location of the center of pressure.”

## Chapter 4

- Page 50 First line of text “called as” should be “called”
- Page 57 In Figure 4.3.1, “ $F_t$ ” should be  $F$  sub tau.  
In Equation 4.3.3, “t” should be tau
- Page 58 Equation 4.3.6, “ $d_x$ ” should be “dx”
- Page 61 First line under equation 4.3.17, “ where r is the pipe radius ” should be “ where D is the pipe diameter ”
- Page 62 Figure 4.3.5 caption, “Moody (1994)” should be “Moody (1944)”
- Page 69 Figure 4.3.12, the arrow for the Hydraulic grade line should point to the dashed line, not the solid line.  
**Energy and hydraulic grade lines need to be modified.**
- Page 70 First line of section 4.4 “changes” should be “change”
- Page 72 Example 4.4.1, “5301.4 N –  $F_{\text{bolt}} = 113.6\text{N}$ ” should be “5298.8 N –  $F_{\text{bolt}} = 113.6\text{ N}$ ” and “ $F_{\text{bolt}} = 5414\text{ N}$ (or 1217 lb)” should be “ $F_{\text{bolt}} = 5185\text{N}$ (or 1166 lb)”  
Example 4.4.2, in the equation for  $V_{x2}$  the “+ “ should be “ = “
- Page 74 Example 4.5.1

$$“ z_1 - z_2 = 0.025 \frac{1000}{[20/1000]} \frac{V_A^2}{2(9.81)} + \dots ”$$

should be

$$“ z_1 - z_2 = 0.025 \frac{1000}{[200/1000]} \frac{V_A^2}{2(9.81)} + \dots ”$$

- Page 74 Figure 4.5.2, “ $z_1 - z_2 = 15$ ” should be “ $z_1 - z_2 = h_{L_f}$ ”

- Page 75 Example 4.5.1 Velocities should read

$$V_A = Q / A_A = 0.03 / \frac{\pi (200/1000)^2}{4} = 0.955 \text{ m/s}$$

$$V_B = Q / A_B = 0.03 / \frac{\pi (180/1000)^2}{4} = 1.180 \text{ m/s}$$

$$V_C = Q / A_C = 0.03 / \frac{\pi (220/1000)^2}{4} = 0.790 \text{ m/s}$$

- Page 78 Example 4.5.3 second to last line  
“ $V_A =$ ” should be “ $V_B =$ ”
- Page 79 Equation 4.5.8, “ $V^2_{AB}$ ” should be “ $V^2_{AD}$ ”
- Page 86 In Figure 5.1.1 the arrow for  $F_g$  should be in the same direction as the flow

## Chapter 5

- Page 93 Equations 5.1.26a and b, “ $10^{-3}$ ” should be “ $10^{-13}$ ”  
Table 5.1.2, under column for Trapezoid the “ $B_w$ ” should be “ $B_w$ ” in the expressions for Wetted perimeter and hydraulic radius
- Page 94 Example 5.1.3 under the solution, “equation (5.1.33)” should be “Newton’s method”
- Page 95 Example 5.1.4 last equation in example “ $y^{8/2}$ ” should be “ $y^{8/3}$ ”
- Page 109 Table 5.3.1, steep S1 the type of flow is “subcritical” not “supercritical”
- Page 110 Figure 5.3.3, for the steep slope, the label for the lower dashed line between the S2 and the S3 profiles, “C.D.L.” should be “N.D.L.”
- Page 113 Example 5.4.2, the first equation under the solution, the “ $a_1$ ,  $a_2$ , and  $a$ ” should be  $\alpha$  instead of  $a$
- Page 114 Equation 5.4.14, the  $a$  should be an  $\alpha$
- Page 116 Figure 5.4.2, figure on right at river mile “1.0” instead of “1.5”
- Page 117 Table 5.4.1, Column (10) heading should be “ $K^3/A^2$ ”  
First numerical entry in Column (8) should be “0.000042” instead of “0.00004”  
First entry in Column (9) should be “0.111” instead of “0.106”  
Footnote at bottom of Table 5.4.1 should also have “0.111” instead of “0.106”
- Page 117 Table 5.4.1 footnote “ $h_o = C_c$ ” should be “ $h_o = C_c$ ”
- Page 119 Figure 5.4.3, the elevations “3730” should be “5730” and “3750” should be “5750”  
Add the following sentence to the problem description, “Distance between cross-sections 1 and 2 is 500ft, between cross-sections 2 and 3 is 400 ft, and between cross-sections 3 and 4 is 400 ft.”

- Page 123 Table 5.4.2, first line of second footnote “\*\*....,  $h_o = C_e|$  “ should be “\*\*....,  $h_o = C_e|$  “
- Table 5.4.2, second line of the second footnote “ $h_o = C_e$ ” should be “ $h_o = C_c$ ”
- Page 124 Line above equation (5.5.5), “Alternatively,  $Q = B^2 y_2^2 V_2^2$ ” should be “Alternatively,  $Q = B y_2 V_2$ ”
- Page 125 Example 5.5.3, third line above equation at bottom of page, “Because  $y_n < y_c < 8$  ft, a supercritical flow ...” should read “Because  $y_n < y_c < 8$  ft, a subcritical flow ...”
- Page 138 Delete problem 5.2.6  
For Problem 5.3.5, “ Figure P5.3.4 “ should be “ Figure P5.3.5 “
- Page 139 Figure P5.3.4, slopes “ 0.002 “ should be “ 0.0002 “ and “0.003 “ should be “ 0.0003”
- Chapter 6**
- Page 141 Section 6.1, sixth line, “slit” should be “silt”
- Page 141 Seventh line from bottom of page, “connote” should be connate”
- Page 143 Second of page, “Aquilude” should be “Aquiclude”
- Page 148 Fourth line from bottom of page, “diameter,” should be “diameter),”
- Page 149 Example 6.1.1, the solution should be  $\Delta h_1 = 3.33$  ft and  $\Delta h_2 = 5.67$ ft and  $Q = 3.33$  gpd/ft
- Page 152 Equation 6.2.14, in denominator “y” should be “x”  
Equation 6.2.15, in denominator “x” should be “y”
- Page 153 Equation 6.2.21, in numerator “h” should be “H”
- Page 155 Equation (6.3.3) should be  $h = q/K_x + \text{constant}$   
Line above Equation (6.3.4) delete “per unit width”
- Page 163 Line above equation 6.5.2 should read “solve for the *drawdown* s given as”
- Page 164 Add the following after equation 6.5.5, “ where Q is  $m^3/\text{day}$  and T is  $m^2/\text{day}$  for s in m; or Q is gal/day and T is gpd/ft for s in ft; or Q is  $ft^3/\text{day}$  and T is  $ft^2/\text{day}$  for s in ft.”

- Page 165 Sentence above equation 6.5.9, after S add “,using time-drawdown data,”  
Figure 6.5.2 curves in this figure should be changed to reflect  $\log 1/u$  on the x-axis so that all curves increase from left to right instead of decrease.
- Page 169 Last line → 366.700 should be 366,700  
Second line of step 4, “2.56 – 1.48” should be “2.67 – 1.45”
- Page 170 Step 7, “366.700” should be “366,700” and “ $t \geq 12.6$  min” should be “ $t \geq 25.3$  min”.
- Page 173 Line after equation (6.6.3), “ $? = r^2 k_z / b^2 k_r$ ” should be “ $? = r^2 K_z / b^2 K_r$ ”
- Page 174 Equation (6.7.3) denominator in radical “ $Kb'_b$ ” should be “ $Kbb$ ”
- Page 176 In Figure 6.8.2, the arrow for the recharge well should be point downward.
- Page 178 Equation 6.8.12, “4” should be in the denominator, and not in the numerator
- Page 183 Line above equation (6.9.12), “equation (11.2.7)” should read “equation (6.9.7)”
- Page 186 Fourth line from bottom of page, “models in the MODFLOW” should read “models is the MODFLOW”
- Page 188 The first line of problem 6.4.7:  
*Reposition the wells in example 6.4.4 should be:*  
*Reposition the wells in problem 6.4.6*
- Page 189 Problem 6.8.5, “1,485 gpm “ should be 1,485 gpd”
- Page 189 Second line of Problem 6.8.5 statement “...two barrier boundaries was ...” should read “... two barrier boundaries perpendicular to each other was ...”
- Chapter 7**
- Page 222 In Table 7.2.2, “ $P_t/P_{24}$ ” should be “ $P_t/P_{24}$ ”
- Page 223 Figure 7.2.7. the box for rainfall distribution Type I should be shaded the same as for Alaska and Southern California
- Page 225 Figure 7.2.19 (a) is for 12 hours not 6 hours  
Figure 7.2.19 (b) is for 6 hours not 12 hours

- Page 230 Line above equation (7.3.7), “(dz/dt (0))” should be “(dz/dt = 0)”
- Page 231 Second line of SOLUTION, “ $l_v = 2501 - 2.36 \times 28.5$ ” should be “ $l_v = 2501 - 2.37 \times 28.5$ ”
- Page 235 First line change 0.75 to 0.4
- Page 236 Equation 7.4.14 should have minus sign after the first equal sign  
Second line of solution “ $? = [-65+-(60)]/2$ ” should be “ $? = [-65+(-60)]/2$ ”
- Page 237 Figure 7.4.4, the label “moisture content” should be changed to “Saturation”
- Page 240 First line under equation (7.4.23)  $\psi - h_o$  should be  $\psi + h_o$
- Page 244 Figure 7.4.9, in figure for the F – index delete the  $f_o$  and  $f_c$
- Page 244 Problem 7.2.9 should be “What is the all-season 6-hr PMP (in) for 200 mi<sup>2</sup> near Chicago, Illinois?”

## Chapter 8

- Page 254 Last line of Table 8.3.1, “ $+ U_{N-M+1}$ ” should be “ $+ P_M U_{N-M+1}$ ”
- Page 255 Figure 8.3.1, the bottom figure, in interval 5 the “ $P_1 U_4$ ” should be “ $P_1 U_5$ ” and in interval 6 the “ $P_1 U_5$ ” should be “ $P_1 U_6$ ”
- Page 256 Column (2) under Unit Hydrograph, “(cfs/m)” should be “(cfs/in)”
- Page 267 Under Table 8.7.3, footnote d, “conversation” should be “conservation”  
Third line from bottom of page, “imperious” should read “impervious”
- Page 271 Figure 8.8.1, replace “D” with “ $t_R$ ” and add “ $t_L$ ” next to Lag
- Page 281 Table 8.10.1, the web address for the U. S. Army Corps of Engineers Hydrologic Center should be [www.hec.usace.army.mil](http://www.hec.usace.army.mil)
- Problem 8.3.1, the storm flows should be 20, 30, 60, 95, 130, 170, 195, 175, 70, 25, 20
- Problem 8.4.2, “ $Q_p = 276$ ” should be “ $Q_{PR} = 276$ ”

Page 282 Problem 8.7.2, “ soil groups of B, C, and D. “ should read “soils groups of B, C, D, and B. “

The end of problem 8.7.3, “runoff volume?” should read “runoff volume per unit area?”

Problem 8.7.5, add the following “The rainfall pattern is 1.5 in during the first hour, 2.5 in during the second hour, and 1.0 in during the third hour. “

Problem 8.7.6, add the following “The rainfall pattern is 2.0 in during the first hour, 3.0 in during the second hour, and 2.0 in during the third hour. “

Problem 8.8.2, “ controlled “ should be “contoured “

## Chapter 9

Page 284 Line above Equation (9.2.2), “(9.1.1)” should read “(9.2.1)”

Page 286 First line below Table 9.2.1, “(columns 1 and 3)” should read “(columns 1 and 2)”

Page 287 Sentence above Table 9.2.2, “Refer to Table 9.2.1” should read “Refer to Table 9.2.2”

Page 290 Column (3) of Table 9.3.1, “24,00” should be “24,000”

Page 299 Equation (9.5.12), the first = should be +

Page 302 Second line below Equation (9.5.34), “Rhapson” should read “Raphson”

Page 304 First line below equation (9.6.4), “ equation (9.6.10) “ should be “equation (9.6.1)”

Page 307 Problem 9.1.1, “Storage ( $10^6 \text{ m}^3$ ) “ should be “ Storage ( $10^6 \text{ m}^3$ ) “ and “Outflow ( $\text{m}^3$ )” should read “Outflow ( $\text{m}^3/\text{s}$ )”

Problem 9.2.1, “ characteristics given in problem 3.6.1 “ should be “ characteristics given in problem 9.1.1 “

Problem 9.2.1, “  $10^6 \text{ m}^3$  “ should be “  $10^6 \text{ m}^3$  ”

Problem 9.2.4, “ example 9.1.1 ” should be “ example 9.2.1 “

Problem 9.2.5, “ example 9.1.1 ” should be “ example 9.2.1 “

Problem 9.2.6, “ example 9.2.2 “ should be “ example 9.3.2 “

Problem 9.2.7, “ example 9.2.2 assuming  $X = 0.3$  hrs “ should be “ example 9.3.2 assuming  $X = 0.3$  “

Problem 9.3.1, “ example 9.2.2 “ should be “ example 9.3.2 “

Page 308 Problem 9.3.3, in the table for time 14 h, the flow is 360 cfs

Page 311 In Table 10.1.2 for the lognormal probability density function, the  $x$  should not be under the radical)  
In Table 10.1.2, “Log Pearson Type 1” should be “Log Pearson Type III”

Page 312 In the first sentence, “Table 10.2.1” should be “Table 10.1.2”  
Equation (10.2.1), only the 2PI should be under the radical  
Equation (10.2.6), only the 2PI should be under the radical

Page 314 First line under Table 10.2.1, delete the word “where”

## Chapter 10

Page 310 Title of Table 10.1.1, “Parameter” should read “Parameters”

Page 321 Third line from top of page “(5) to the select of” should read “(5) for the selection of”

Page 323 Table 10.4.1, for a skew coefficient of  $-0.1$  and a recurrence interval of 50 years the value of  $K_T$  is 2.000 instead of 1.000

Page 328 Equation (10.5.8), delete the overbar on  $y_H$  and place an overbar on  $y$   
Equation (10.5.9), delete the overbar on  $y_L$  and place an overbar on  $y$

Page 335 Title of Figure 10.7.2, “by equation (10.6.3)” should read “ by equation (10.7.3)”

Page 340 “ $=F(-3.00)$ ” should read “ $=F(-0.300)$ ”

Page 342 Problem 10.7.6 add the statement, “ Use data in Problem 10.5.4. “

## Chapter 11

Page 385 Figure 11.5.1, in the abscissa label, “Quality” should read “Quantity”

## Chapter 12

- Page 419 After equation (12.1.2) should be added  
 “where  $Q$  is the discharge in  $gpm$  for U.S. customary units and  $m^3/s$  for SI units.”
- Also above equation (12.1.3)
- “ $D$  is the pipe diameter in  $ft$  ( $m$ )”
- should be changed to
- “ $D$  is the pipe diameter in  $in$  ( $m$ )”
- Page 419 Equation 12.1.5, the psi should be a phi
- Page 426 Figure 12.2.5, Abscissa axis label should be *Specific speed*, NOT *Specified speed*.
- Page 428 Third line below equation (2.2.8), “ $h_{Lp}$ ” should be “ $h_{Lf}$ ”
- Page 429 Example 12.2.4,  $P_v/\gamma$  from Table 2.1.2 = 0.25 m, NOT 0.24
- Page 430  $NPSH_A = 9.19 + 3 - 0.25 - (0.0399 + 1.941) - 0.249 = + 9.71$
- Page 443 Figure 12.4.3,  $h_2$  should be  $h_j$ ;  $h_2$  is 60 ft the distance between 2 and 3; the graph should be modified so that  $h_j$  is larger than  $h_2$
- Page 444 The equation  $0.0776Q_2^2 = 60 - h_j$   
 RHS should be  $h_j - 60$
- Page 444 The equation  $Q_2 = \sqrt{\frac{h_2 - h_j}{K_2}}$  should be  $Q_2 = \sqrt{\frac{h_j - h_2}{K_2}}$
- Page 446 Figure 12.5.3, the combined system curve needs to be modified
- Page 451 Second line of Example 12.5.1, “Figure 12.5.16” should read “Figure 12.5.13 (a)”  
 Sixth line of Example 12.5.1, “Figure 12.5.13” should read “Figure 12.5.13 (b)”  
 “Figure 12.5.16” at bottom of page should read “Figure 12.5.13 (a)”
- Page 452 First line of Example 12.5.2, “Figure 12.5.13” should read “Figure 12.5.13 (b)”  
 Delete part c of this example, solution not provided.
- Page 453 “Figure 12.5.13” should be “Figure 12.5.13 (b)”

Page 458 Part (d) of example 12.5.4, Equation for  $H_{\text{pumpA}}$  should be

$$\begin{aligned}H_{\text{pumpA}} = H_T &= 150 + 2.514Q^2 + 1.606(Q_{\text{pumpA}})^2 \\ &= 150 + 2.514(4.126)^2 + 1.606(2.676)^2 \\ &= 205 \text{ ft}\end{aligned}$$

Equation for efficiency should be

$$\begin{aligned}e_A &= \frac{62.4(205)(2.676)}{80(550)} = 0.78 \\ &= 78\% \text{ (efficiency)}\end{aligned}$$

Page 459 Figure 12.6.1, “550 gpm” should be “500 gpm”

Page 462 First line “Hardy and Cross “ should be “Hardy Cross “  
Three lines above equation (12.6.17), “ $p^{-1}$  “ should be a subscript, “ $p^{-1}$ ”

Page 468 Conservation of flows for Node 5 and 12 should read

$$\text{“Node 5: } Q_4 + Q_5 + Q_{13} = -550\text{”}$$

$$\text{“Node 12: } Q_{12} + Q_{19} - Q_{13} - Q_{18} = 0\text{”}$$

Page 468 Example 12.6.3, first line after the conservation equations, “All 12 of the conservation “ should be “Only 11 of the 12 conservation “

Page 471 Line above equation 12.7.3, “for bulk flow in a pipe “ should be “ for both reactions “

Page 473 Figure 12.8.2(b), the “c” should be “ $v_c$ ”

Page 475 Figure 12.8.3 (a), delete all of the  $-1$

Page 477 Line above equation (12.8.19), “ equation (12.8.16b) “ should be “equation (12.8.16) “

Equation 12.8.22, “  $V_c =$  “ should be “  $v_c =$  “

Page 478 Table 12.8.1 title, “ K “ should be “k”

Page 478 Part a of solution for Example 12.8.1,  $v_c = \dots = 1473 \text{ m/s}$   
Part a of solution for Example 12.8.1,  $V = Q/A = (400 \times 10^{-3})/\dots$

Page 479 First sentence above Figure 12.8.5, “(Figure 4.3.4)” should be “(Figure 4.3.5)”

Page 481 Fourth line should read “ and,  $V = 14.4$  ft/s. Check the Reynolds number:  $R_e = 14.1 \times 2 / 1.217 \times 10^{-5} = 2.37 \times 10^6$ . Entering “

Fifth line  $R_e = 2.37 \times 10^6$

Page 489 Problem 12.7.1, “ example 12.7.1 ‘ should be “ example 12.6.1 “

Problem 12.7.2, “ example 12.7.1 ‘ should be “ example 12.6.1 “

Delete problems 12.7.3 and 12.7.4

### Chapter 13

Page 522 First line of Problem 13.1.1, “ Figure 13.1.3a ‘ should be “ Figure 13.1.17a”

First line of Problem 13.1.2, “ Figure 13.1.3b ‘ should be “ Figure 13.1.17b”

Page 522 Problem statements 13.2.1 and 13.2.2

“(e = 1.0 mm)” should be “(k<sub>s</sub> = 1.0 mm)”

### Chapter 14

Page 545 Line above equation 14.4.2, “Figure 14.4.1” should be “Figure 14.4.2e”

Page 546 Figure 14.4.2, Caption should read : (b) Stage-discharge (c) Discharge-damage. (a), (d), and (e) are OK.

Page 558 Figure 14.6.4, “(annual = 22°)” should be “(annual = 22 inches)” and “(annual = 51°)” should be “(annual = 51 inches)”

Page 559 Problem 14.6.1, “ hsitory “ should be “ history “

### Chapter 15

Page 565 Table 15.2.3, The C factor for a 10-yr return period Forest/Woodlands should be “0.36” instead of “0.26”

Page 569 In Table 15.2.6, column 6, the units “ft” should be deleted

Page 570 Seventh line from bottom which begins with Column 18, “ column 13 ‘ should be “ column 15 “

- Page 578 Elevation sketch, the direction of the arrow for  $Q_L$  should be reversed to the opposite direction
- Page 579 Elevation sketch, the direction of the arrow for  $Q_L$  should be reversed to the opposite direction  
The two statements “from Figure 4.15 “ should be “ from Figure 15.2.8 “
- Page 580 Elevation sketch, the direction of the arrow for  $Q_L$  should be reversed to the opposite direction
- Page 581 last line on page should be “ at MH – 4 “
- Page 583 third and fourth lines from bottom of page, “ $m_L$  “ should be “  $M_L$  “
- Page 584 fifth and sixth lines from top of page, “  $m_u$  “ should be “  $M_u$  “
- Page 590 second line from bottom of page, “ concrete grouted riprap, “ should be “ concrete, grouted riprap, “
- Page 596 First line of subsection 15.3.2, “vegetable linings” should be “vegetative linings”
- Page 599 Example 15.3.3 SOLUTION, step 1, “  $D_{50} = 2.5$  cm “ should be “  $D_{50} = 5.0$  cm “; and in step 6 the square root of  $2/4$  should be the square root of 2 divided by 4
- Page 609 Third line below Figure 15.4.14, “Figure 15.4.15” should be “Figure 15.4.14”
- Page 609 Equation 15.4.12, “ $(t_D + t_c)$ ” should be “ $(t_D + t_c)$ ”
- Page 611 fourth line from bottom of page, “ 256917 cfs “ should be “ 256917 ft<sup>3</sup> “
- Page 615 Table 15.4.1 title, “ Example 15.4.8 “ should be “ Example 15.4.5 “
- Page 618 Example 15.4.7 first line “ For the situation in example 15.4.9, “ should be “ For the situation in example 15.4.6, “
- Page 622 In problem 15.2.3 add the sentence, “Use FigureP15.2.1b for rainfall.”
- Page 624 Problem 15.4.3, “ example 15.4.6 “ should be “ example 15.4.3 “
- Problem 15.4.4, “ example 15.4.6 “ should be “ example 15.4.3 “
- Problem 15.4.5, “ example 15.4.7 “ should be “ example 15.4.4 “
- Problem 15.4.6, “ example 15.4.7 “ should be “ example 15.4.4 “

Problem 15.4.7, “ example 15.4.8 “ should be “ example 15.4.5 “

Problem 15.4.8, “ example 15.4.8 “ should be “ example 15.4.5 “

## Chapter 16

Page 629 Figure 16.1.1, “ $T_w = d \tan$  “ should be “  $T_w = d/\tan$  “

Page 640 Third line, “Equation (16.1.26) “ should be “ Equation (16.1.27) “  
Also, the following changes are necessary in the solution:

$$A = \frac{1}{2}(d_1 + d_2)W + \frac{1}{2}d_2(T_w - W) = \dots$$

$$R_s = \frac{1}{\left[1 + \frac{0.15V^{1.8}}{S_x L^{2.3}}\right]} = \dots$$

3 lines lower → from example 16.1.5 (NOT 16.1.6)

Page 645 Example 16.1.10, first line of part (b) of solution, “ $h + a/12 =$ ” should be “ $(h + a)/12 =$ ”

Page 647 Equation above Figure 16.1.12 has a missing = sign

Page 648 Equation for  $R_s$  has missing = sign

Page 652 Figure 16.2.2 → Caption (a) should be *Outlet & inlet unsubmerged*  
(d) should be *Outlet & inlet submerged*

Page 654 Table 16.2.1 → 4<sup>th</sup> column heading → *Inlet Edge Description*

Page 654 Table 16.2.1, Heading in the Table “Monograph Scale” should read “Nomograph Scale”

Page 655 same as above

Page 659 Equation 16.2.5 → LHS should be:

$$HW_0 + \frac{V_u^2}{2g}$$

Page 660 Figure 16.2.6, at section 2 the top “ $H_o$ ” should be “ $H_e$ ”

Page 662 Third line from the bottom of the page (line with starting with Step 8) delete, “where”

Page 664 3<sup>rd</sup> line → Need new paragraph after “...above equation for  $EL_{h0}$ .”  
SPACE  
The new paragraph starts with “Now consider inlet control and ...”

Also, after the line “To check,”

$$\left[ \frac{Q^2}{AD^{0.5}} \right] \text{ should be } \left[ \frac{Q}{AD^{0.5}} \right]$$

Page 664 First line, “4.63” should be “4.64”

Page 665 Second line above Example 16.2.2, “Administration CAP” should read “Administration and CAP”

Page 667

Fourth equation from top of page “ $K_t$ ” should be “ $k_t$ ”  
Table 16.2.4, “ $MW_i$ ” should be “ $HW_i$ ” and “ $d_c + D$ ” should be “ $(d_c + D)/2$ ”

## Chapter 17

Page 693 Figure 17.2.20 title should be “Culvert spillway for Dulce Reservoir dam under construction in northern New Mexico (Photograph by L. W. Mays)”

Page 695 Line above equation (17.3.1), “(Section 5.7)” should be “(Section 5.6)”

Page 698 Figures 17.3.2 (b) and (c), the x-axis labels should be “ $h_a/H_0$ ”

Page 703 Table 17.3.1, all the “ $H_c$ ” should be “ $H_e$ ” and in the footnote the “0.922” should be “0.992”

Delete the column for Q and add the two columns below

L	Q
(ft)	(cfs)
168.7	539.
168.8	1576.
166.6	4670.
165.2	8886.
163.8	14026.
162.4	19998.

161.0	26710.
159.6	34177.
158.2	42180.

Page 707 Figure 17.3.2, 0+00 is located at the upstream side of the channel trough  
 Page 708 Figure 17.3.14, “Hydraulic gradient” should be “Hydraulic gradient”

Page 711 Sixth line down, “ Figure 17.3.15 “ should be “ Figure 17.3.16 “

Page 724 In Figure 17.4.5c the x-axis the “Length of jump” should be “Froude number”

Page 729 Equation for  $x =$ , six lines above Example 17.4.2, there appears 29 twice which in both cases should be  $2g$

Page 731 Example 17.4.3, energy equation which is fifth line in the solution, the “19.3” should be “4.15”

Page 731 Restatement of Example 17.4.3 and corrections in the solution:

**EXAMPLE 17.4.3** The objective of this example is to determine the appropriate stilling basin floor elevation in order to prevent the sweepout of a hydraulic jump from the basin. The crest length is 76.6 ft and the discharge is 2,000 ft<sup>3</sup>/s (refer to Figure 17.4.12).

**SOLUTION** First assume a basin floor elevation of 16.7 ft; then  $Z_c = 50 - 16.7 = 33.3$  ft,

$$q = 2,000 / 76.6 = 26.1 \text{ ft}^3/\text{sec}/\text{ft of width}; E_c = \frac{3}{2} \sqrt[3]{\frac{q^2}{g}} = \frac{3}{2} \sqrt[3]{\frac{(26.1)^2}{(32.2)}} = 4.15 \text{ ft.}$$

The energy equation between the crest and depth  $y_1$  before the jump is used to compute  $y_1$  (ignoring losses):

$$E_c + Z_c = y_1 + \frac{V_1^2}{2g} = y_1 + \frac{q^2}{2gy_1^2}$$

$$19.3 + 33.3 = y_1 + \frac{(26.1)^2}{2(32.2)y_1^2}$$

$$y_1^3 - 37.45y_1^2 + 10.59 = 0$$

Solving yields  $y_1 = 0.54$  ft; then  $V_1 = 26.1/0.54 = 48.8$  ft/s and the Froude number is  $Fr_1 = V_1/\sqrt{gy_1} = 48.8/\sqrt{(32.2)(0.54)} = 11.7$  Because  $Fr_1 > 4.5$  and  $V_1 > 50$  ft/s, a type-II or III stilling basin would be recommended. Using Figure 17.4.3b  $TW/y_1 = 17$  for  $Fr_1 =$

11.7 and  $TW/y_2 = 1.05$  then  $TW = 17y_1 = 9.18$  ft and  $y_2 = TW/1.05 = 8.8$  ft. Other stilling basin floor elevations should be considered.

Page 746      Problem 17.4.4, “Example 17.4.1” should be “Example 17.4.2”  
Problem 17.4.5, “Example 17.4.1” should be “Example 17.4.3”  
Problem 17.4.6, “Example 17.4.1” should be “Example 17.4.4”  
Problem 17.4.4, “Example 17.4.1” should be “Example 17.4.5”

## **Appendix A**

Page 751      First sentence on page, “Table 5.2.1”, should be “Table 5.1.2”